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Perceived innovativeness in the travel industry

How can a traditional tour operator survive in 2021?

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Preface

Dear reader,

In front of you is my master thesis research. After a period of hard work, it has been finalised.

The context of the research has always interested me, as I love to travel. I am a curious person, I like to discover new places and to meet new people. This was a perfect match with the research subject and that gave extra energy to produce a meaningful result. It is hard to imagine how many people helped me achieve this end result! I would like to express my gratitude to prof. dr. Hillebrand for his feedback and confidence during the whole writing period. Next, I would like to thank prof. ir. Migchels for believing in me and for the guidance at the beginning of this research. Then, a big gratitude to my parents, brothers and girlfriend for always believing in me and for always being available for feedback during these tough months. Lastly, I thank all the respondents who filled in the survey. Thank you all!

Brian Brands

Nijmegen, 30-08-2021

Abstract

When travellers want to book their holidays, the number of choices they have are countless. A holiday can be precisely planned by the traveller, or it can be outsourced to an intermediary organisation. The travel market is highly competitive, in that traditional firms are competing with innovative newcomers. Tour operators are intermediary organisations which have to adapt to survive in a quickly changing market—or face the possibility of bankruptcy. The main goal of this research is to identify the area of their business where tour operators in the Netherlands can innovate best to create a stronger position in the market. The research assesses the relationships among four proposed antecedents of perceived firm innovativeness, which indicates how innovative customers perceive a firm to be. Moreover, the relationship between perceived firm innovativeness and the relative attractiveness of a tour operator within the market is discussed. Finally, the relation between relative attractiveness and the purchase intention is assessed. The research is conducted as a survey with 289 respondents, and the conclusions are drawn based on structural equation modelling with the partial least squares method. The results show that the four antecedents do not have a significant influence on the perceived firm innovativeness, while the relations between perceived firm innovativeness, relative attractiveness, and the purchase intention are significantly positive. Moreover, it has been established that the knowledge of the customer, the frequency of booking with a tour operator, and the education level are important influential factors in the model.

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Chapter 1 introduction

1.1 Problem introduction

In September 2019, the tourism industry was shocked by the bankruptcy of Thomas Cook, the oldest and one of the largest tour operators of the world. Subsequent analyses pointed to large debt, the failure of a takeover, and Brexit uncertainty as potential causes for the company's collapse (Collinson, 2019). Moreover, Thomas Cook was considered to lack the innovativeness necessary to survive the shift from analog to digital travel bookings (Tedder, 2019). While other tour operators had diversified and offered the customer an increased value proposition, Thomas Cook failed to change its business model sufficiently as it was considered as the most analog travel company in a mostly online market (Nijjar, 2019). The industry competition had invested in online innovation, where customer experience is a priority, and a personalised travel offer is the key. Moreover, newcomers like AirBnB and Booking.com have disrupted the market, causing a threat to existing tourism firms (Guttentag & Smith, 2017). While Thomas Cook was a disrupter itself in 1841 (Hjalager, 2009), it had largely maintained its original business model which included many physical offices where customers could book their travels (Nijjar, 2019). The bankruptcy highlighted that innovation is essential to survival in the highly competitive tourism industry.

In 2020, the situation suddenly turned worse for many industries—especially for tourism. The COVID-19 pandemic severely impacted the travel-related industries—hitting the tour operator industry particularly hard—as governments implemented travel restrictions and closed their borders in an effort to contain the virus (Aburuman, 2020). The TUI Group (2020) is one of the largest tour operators in the world and reported a revenue loss of 98% in the third quarter of

2020, which indicates the severity of the current crisis for tour operators and the tourism business as a whole. It is difficult to predict how the global market will recover and to identify what might be left of the original travel patterns. It is believed that the tourism sector will take until 2024 to return to the original level of spending from 2019 (Bingelli et al., 2020). Although the tourism industry is going through a major crisis, this period also offers opportunities for tourism firms to innovate and diversify their offerings (Kyriakakis & Tzirakis, 2020).

Firm innovativeness is defined as ‘a firm’s receptivity and inclination to adopt new ideas that lead to the development and launch of new products’ (Rubera & Kirca, 2012, p. 130). The literature usually treats firm innovativeness as a self-perception—that is, how innovative the firm considers itself to be. However, firms are prone to overestimate the uniqueness of their own product or service innovation (Danneels & Kleinschmidt, 2001). That is why it would be better to look at a firm’s innovativeness not from the firm’s perspective, but from the customer’s perspective, as it is believed that the customers themselves know how they perceive the product or service—not the firm (Danneels & Kleinschmidt, 2001). Kunz et al. (2011) agreed on the importance of firm innovativeness from the customers’ perspective and concluded that this perspective was largely missing in the literature. Therefore, they intended to fill that gap in the literature by introducing a new conceptualisation of firm innovativeness: the ‘perceived firm innovativeness’ (PFI), which assumes the perspective of the customer. They define PFI as ‘the consumer’s perception of an enduring firm capability that results in novel, creative, and impactful ideas and solutions for the market’ (Kunz et al., p. 817). Since the introduction of the customer-centric PFI view of Kunz and his colleagues, the perspective has been used in other research. For example, PFI has been shown to positively affect the perceived luxury value of cruise ship travellers (Hwang & Hyun, 2019). Additionally, Jin et al. (2015) have found a

positive relationship between PFI and brand credibility, preference, and customer loyalty in higher-class restaurants. Moreover, in the context of first-class airline passengers, Kim et al. (2016) have concluded that PFI is an important driver of brand loyalty. These examples emphasise that managers have to take the innovativeness perceived by the customers into account when running. Clearly, PFI is treated as important in the literature, but how is PFI formed in the context of tour operators?¹ This question will be the focus of the present research.

1.2 Goal of the research

The main topic of this research is to examine how PFI is formed—from the customers' perspective—in the context of tour operators in the Netherlands. Ideally the goal is to determine the antecedents forming the concept of perceived firm innovativeness and to test the impact of PFI on the purchase intention. The question also arises of how significant the impact of perceived firm innovativeness is on the purchase intention, as this can give companies in the tourism industry a better understanding of the opinion of their customers. These considerations lead to the following research question:

Which factors influence the consumer perceived firm innovativeness of tour operators and how does that affect the purchase intention?

¹ It is important to emphasise that consumer and customer are used interchangeably in this research, although they have slightly different definitions, to respect the original quotes from the literature. In this research, both words relate to the person who buys and uses the product and/or service of a firm.

1.3 Relevance

From a managerial point of view, the topic of this research is highly relevant in the rapidly changing world. The tourism industry is a highly uncertain, quickly changing sector, and tour operators have to constantly revise their strategy in order to survive (Aguiar-Quintana et al., 2016). This research will provide more information for managers of tour operators about the importance of each of the antecedents of consumer perceived firm innovativeness, the PFI itself, and its effect on the purchase intention. Companies could use the results of this research to assess which antecedents to focus on so as to allocate their resources effectively. If a positive relationship is confirmed in this research, companies can try to manipulate the antecedents of PFI to consequently increase the purchase intention. The results for tour operators could possibly be generalised to be useful for more tourism-related businesses.

From the academic point of view, this research will make a contribution to the literature because it investigates the importance of the different antecedents of customer perceived firm innovativeness. The Norwegian Innovation index (Lervik-Olsen et al., 2017) is seen as a pioneering study that uses perceived innovativeness as the key variable in the research and is one of the few studies in the literature that explores a consumer's perspective. Due to the focus on Norway and a limited number of industries in the Norwegian Innovation Index, there is a clear gap to be explored in more specific industries such as the tour operators in the Netherlands. Attempting to fill this gap is important as it can improve the research validity of the antecedents and consequences of perceived firm innovativeness. The current research can contribute to the literature as it can demonstrate the importance of this relatively new concept of innovativeness for future research.

1.4 Structure of the research

Chapter 1 introduces the research problem, the goal, the research question, and the relevance of the research. In Chapter 2, the theoretical background of this research is presented. The three concepts of customer perceived innovativeness, relative attractiveness, and purchase intention will be further defined and related to this research. Moreover, Chapter 2 will contain the hypotheses of the expected relationships between the variables. In Chapter 3, the research method will be presented, including the sampling technique, scales used, and design of the research. Chapter 4 will discuss the results, and Chapter 5 will summarise and conclude the results. Moreover, it will clarify the limitations and offer suggestions for future research.

Chapter 2 Theory

This chapter discusses the literature relevant for perceived firm innovativeness and ultimately the relationship of this concept with customer loyalty. The antecedents of PFI are explained, and their effects on the current concept are discussed. Moreover, the relationship between PFI and relative attractiveness is analysed. Next, the relationship between relative attractiveness and purchase intention is examined. Finally, the relationships are visualised in the theoretical framework in Section 2.5.

2.1 The tourism industry

Over the recent years, customers in the tourism industry have demanded more from tourism companies (Omerzel, 2015). For example, they increasingly desire personalised travel options (Aguiar-Quintana et al., 2016), sustainable and green tourism (Ashraf et al., 2020), or authenticity in the firm's offerings (Kovacs et al., 2014). Over the last few years, the market has emphasised last-minute demand where customers are better informed and look for the best deals (Scaglione et al., 2018). In the tourism industry, tour operators are considered to be among the most influential and powerful players in the industry because of their market knowledge, their ability to direct demand flows to different destinations, and their dominant role in price determination within the whole industry (Picazo & Moreno-Gil, 2018). The role of the tour operator is to act as a middleman between the suppliers of aspects of a travel package and the purchaser or undertaker of that travel (Maru & Kieti, 2013). Moreover, Maru and Kieti (2013) explain that a tour operator often buys capacity in bulk and produces a certain package to offer directly to customers or via travel agencies, who in general sell packages from multiple tour

operators. The tour operator adds value for the customer by creating a complete travel package for the customer, often for a discounted price due to their bulk buy-in at the beginning of a season (Maru & Kieti, 2013). The power of tour operators on the supply side is confirmed by Tveteraas et al. (2014, p. 582), who found that tour operators have the power to decrease the price of regional hotels by 24%. Moreover, hotels that can be easily substituted by similar hotels in the region could have a disadvantage in their negotiation power, as they can lose profitability in the long run (Tveteraas et al., 2014, p. 582).

As mentioned in Chapter 1, new players like Airbnb and Booking.com have entered the tourism industry. The change of the market from a mostly analog state to a primarily online travel booking system has caused disruption in the tourism market (Pavlovic et al., 2016). In the analog state, customers had to go to a physical store to book a holiday. The development of the internet and customer migration to this platform have created numerous opportunities for innovation in the globalised tourism industry (Slivar et al., 2016). To be able to stay competitive as a traditional tour operator, Omerzel (2015) argues that constant innovation is crucial.

2.2 Customer perceived firm innovativeness

2.2.1 Innovation and innovativeness

It is widely accepted that to be able to survive and grow as a firm, it is important to innovate (Zahra & Covin, 1994). Innovation is defined as “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” (OECD, 2005, p. 46). Improvements can be called an innovation if they are new to the firm (OECD, 2005, p. 46); consequently, the improvements do not necessarily have to be new to the

market. Innovation differs between products and services. The most important difference is that a service innovation provides a service where personnel deliver the service—meaning that personnel are part of the innovation, in contrast to product innovation (Berry et al., 2006). The literature on innovation has focused on the degree of change, noting a distinction between incremental and radical innovation (Snyder et al., 2016). Radical innovation is defined by ‘the creation of a totally new product, i.e., one defined in terms of characteristics unconnected with those of an old product’; by contrast, an incremental innovation only improves the characteristics of existing or old products or services (Gallouj & Weinstein, 1997).

It is important to emphasise, however, that an *innovation* is not the same as the *innovativeness* of a product or firm. Innovation is about the practical implementation of a product or service improvement, while innovativeness refers to ‘the capability of a firm to be open to new ideas and work on new solutions’ (Kunz et al., 2011). Moreover, Kunz et al. (2011) elaborated on the idea that innovativeness is about a long period of time instead of a snapshot at that moment.

Keiningham et al. (2019) distinguished three types of innovativeness: consumer, firm, and product/service innovativeness. Consumer innovativeness is defined as the tendency of a consumer to buy a product or service that is new to them, instead of conservatively buying familiar brands and products (Steenkamp et al., 1999). Consumer innovativeness is not further discussed in this thesis, as it is not relevant to the research goal. In Chapter 1, firm innovativeness is already introduced as the ability and willingness of a firm to adopt new ideas. In the past, research has shown that a firm’s innovativeness has a significantly positive influence on the performance of the firm financially as well as the firm value. This topic has proved interesting to researchers and has been often studied (Keiningham et al., 2019). If a firm is able

to successfully adopt a radical innovation, this can lead to a re-evaluation of the rules of competition between firms in the market, potentially resulting in an improved competitive position for the innovating firm (Nijssen et al., 2006). The majority of research was conducted either by relying on the views of firm managers or with statistical data—for example, the number of innovations presented by the firm (Keiningham et al., 2019). The final type is service innovativeness. Leckie et al. (2017) define service innovativeness as the ‘service concept newness and relative advantage’, whereby ‘relative advantage’ refers to the degree that innovation is perceived as an improvement on its predecessor. The ‘service concept newness’ can increase customer loyalty as it potentially can meet unsatisfied needs of customers which the current alternatives can or do not currently offer (Leckie et al., 2017).

2.2.2 Customer perceived firm innovativeness

As mentioned before, firm innovativeness can be seen from three perspectives: the perspective of the firm (or its managers), industry experts, or the customers (Keiningham et al., 2019). In this section, the customers’ perspective is explained more extensively as this view is the one adopted in this research. Taking this perspective seriously as a firm will not only result in novel, creative, and impactful ideas and solutions (Kunz et al., 2011), but also can increase customer excitement and a competitive advantage if the firm fulfils customer needs better than the competition (Szymanski et al., 2007). The perceived firm innovativeness relates to a period of years during which the customer has created his or her perception of a firm’s ability to innovate (Henard & Dacin, 2010). If there is a high perceived innovativeness in the mind of the customer, it generally means that the customer has noticed a track record of several new product or service introductions (Henard & Dacin, 2010). If a firm wants to be perceived as innovative, it

should strive to be associated over a long period with a creative, dynamic, and market-changing image (Kunz et al., 2011).

2.2.3 Antecedents of customer perceived service innovativeness

Lervik-Olsen et al. (2017) identified four possible observable antecedents of PFI: a change in the value proposition, in the value delivery, in customer treatment, and the innovation in the interaction space. These antecedents predict the construct ‘perceived firm innovativeness’ and have causal relationships with that variable. In the present research, the four areas of possible change are conceptualised as antecedents because they logically precede the variable perceived firm innovativeness. First the customer has to notice a change in at least one of the areas before they possibly perceive the innovativeness of the firm differently. The four antecedents are further explained in the section that follows.

The antecedent change in value proposition refers to ‘the degree to which the consumer perceives the functionality and usefulness of the product or service as new as compared to existing alternatives’ (Keiningham et al., 2019). Zomerdijk and Voss (2010) emphasised that firms have realised the high importance of the customer experience and consequently have put customer service in the centre of their service offering. The customer value proposition (CVP) is used to create recognisable and unique products and services, and is determined by the experience, service attributes, and price (Zomerdijk & Voss, 2010). If a customer perceives the offering of a firm as new compared to the previously available offers, he or she is likely to perceive the offering as more innovative (Keiningham et al., 2019). A concrete example of value proposition is the introduction of Netflix, which outperformed traditional alternatives like Blockbuster because consumers perceived the service as functional and useful compared to the competition (Newman, 2018).

The second antecedent—change in value delivery—is defined by ‘the degree to which the consumer perceives the process of offering the product or service as new’ (Keiningham et al., 2019). The value delivery can be perceived by the customer in the way a firm delivers its products or services, the ease of using the firm’s offerings, the delivery speed of the firm, and the efforts of the customer when making use of the offering (Lervik-Olsen et al., 2017). Particularly in service industries, this antecedent is important because service innovations often include changes in the process of delivering the service and the skills of employees in contact with the customers (Nijssen et al., 2006). A firm that wants to be innovative should focus on the value delivery in order to fill the gap in customer needs, and it should strive to become more efficient in the opinion of the customer (Zolfagharian & Paswan, 2008). An example of an innovation in the value delivery is the delivery of packages or food with drones, as this is a noticeable innovative solution for the customer to reduce delivery time (Singh & Sarkar, 2021).

Third, the change in customer treatment is defined as ‘the degree to which the consumer perceives the interaction between him/her and the firm as new’ (Keiningham et al., 2019). Moreover, Keiningham et al. (2019) explain that a firm can create a change in customer treatment by involving customers in a new way, training their staff in interaction skills, or by using technological innovations. Especially in a world where new ways to interact technologically are being created (for example, Facebook and Twitter), companies have new opportunities to increase their perceived firm innovativeness. The interactions on social media and the internet in general directly influence the relationship between the firm and the customer (Raab et al., 2016). For instance, the firm can innovate by using new technologies to communicate with their customers. An example of this antecedent is how the Japanese online

clothing shop Uniqlo combined the online world with its brick-and-mortar stores, where customers are able to interact with the online environment (Venkatesan, 2018).

Lastly, the change in interaction space is defined as ‘the degree to which the consumer perceives the appearance of the physical and virtual surrounding of the innovation as new’ (Keiningham et al., 2019). The interaction space finds its origin in the servicescape literature, where Bitner (1992) pointed out the importance of the physical environment on internal responses of the customers and employees. A customer perceives the interaction space with his or her senses; therefore, Zomerdijk and Voss (2010) highlighted the importance of the stimulation of all the senses in an experience-based service offering. Moreover, virtual servicescape has a significant influence on the feelings and experiences of the customer (Vilnai-Yavetz & Rafaeli, 2006), where the senses are stimulated to create a feeling of pleasantness and satisfaction. Firms can increase the PFI by a change in the context where the product or service is offered (Keiningham et al., 2019). A recent example is the electric car manufacturer Lucid Motors that created a unique experience store where customers can experience the new car in a living room atmosphere (Berg, 2021).

A change in (one of) the four antecedents (value proposition, value delivery, customer treatment, and interaction space) will change the perceived firm innovativeness. In line with Lervik-Olsen et al. (2017) and Keiningham et al. (2019), it is believed that the following hypotheses are true:

Hypothesis 1a: Perceived change in value proposition has a positive effect on perceived firm innovativeness.

Hypothesis 1b: Perceived change in value delivery has a positive effect on perceived firm innovativeness.

Hypothesis 1c: Perceived change in customer treatment has a positive effect on perceived firm innovativeness.

Hypothesis 1d: Perceived change in interaction space has a positive effect on perceived firm innovativeness.

2.3 Relative attractiveness

The construct of ‘perceived relative attractiveness’ indicates how attractive a firm is towards its competitors and can vary based on the perceived change by the consumer in terms of the offering of the firm itself or of their competitors (Andreassen & Lervik-Olsen, 2008). The comparison can be assessed in terms of perceived differences in quality, the reputation of the firms, and often the price of the product or service (Andreassen & Lervik-Olsen, 2008). However, to make a fair comparison, it is important that the consumer can compare the offerings of the firms easily and that the products or services do not deviate much in origin. The offerings have to be closely related to each other; for example, a customer cannot compare the offers of an oil company and a pet store as the product/service range is unrelated. Andreassen and Lervik-Olsen (1999) have found that perceived relative attractiveness is the main driver of customer intent. They argue that it is important for a firm to ‘wow’ the consumer in order to create a positive perceived attractiveness compared to the direct competitors. Moreover, it is important that a firm creates and retains positive expectations for the future, as this is crucial to keep customer loyalty high (Andreassen & Lervik-Olsen, 1999).

If a firm is known for introducing meaningful and useful innovations in the market, consumers can become enthusiastic about that firm, resulting in anticipating new products and services and creating expectations for the future (Henard & Dacin, 2010). If a firm has a

well-known history for frequently introducing innovations, it can trigger customers to have a positive attitude towards that company, and they are likely to be more attracted to it as part of their ‘expectation of satisfaction’ (Henard & Dacin, 2010). A change in the market offerings of a firm can trigger a change in the relative attractiveness of a firm with regard to their competitors, as customers perceive comparable offerings differently and therefore value them accordingly (Andreassen & Olssen, 2008). This is the reasoning that lies behind the following hypothesis:

Hypothesis 2: The perceived firm innovativeness has a positive effect on the relative attractiveness.

2.4 Purchase intention

Purchase intention is defined as the likelihood of purchasing a brand, product, or service when confronted with a buy decision situation (Crosno et al., 2009). In the literature, purchase intention is often used to predict later, actual purchasing of the product or service (Samadi & Yaghoob-Nejadi, 2009). The most efficient way to know if someone will behave in a certain way (i.e., buy a product or service) is to ask if there is an intention to execute that behaviour (Fishbein & Ajzen, 1975, pp. 368-369). In particular, when the consequences of buying the product or service are high—as with booking a holiday—the purchase intention can accurately predict the actual purchase behaviour (Morwitz et al., 2007). As previously discussed, Andreassen and Lervik-Olsen (1999) have found that perceived relative attractiveness in the present time and the expected relative attractiveness in the future are key drivers of the future intention of a customer to buy a product or service. Hence, the following hypothesis is formulated:

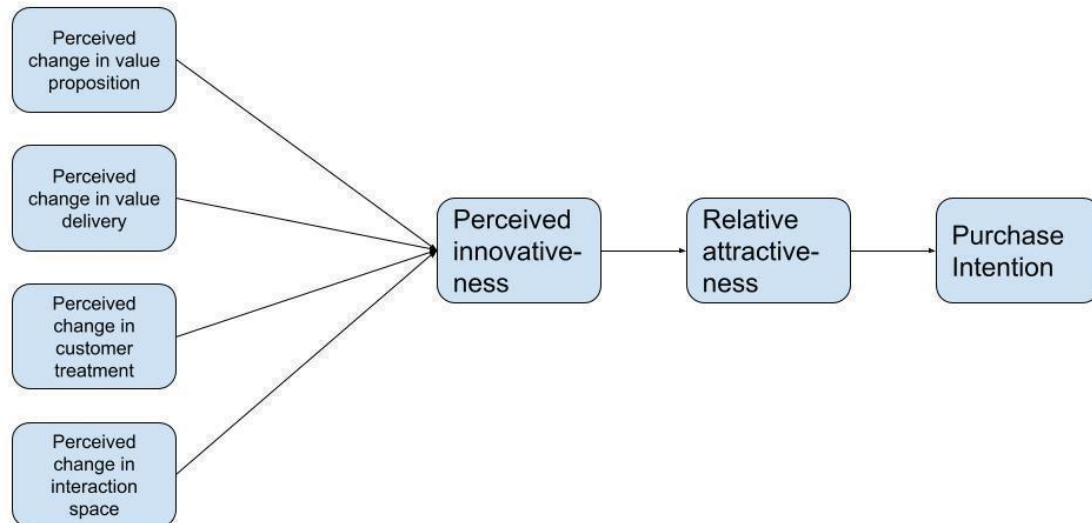
Hypothesis 3: Relative attractiveness has a positive effect on purchase intention.

2.5 Conceptual model

The visual representation of the hypotheses and the relationships are presented in Figure 1. The figure shows the relationship between the perceived change in the four antecedents of perceived firm innovativeness and in perceived firm innovativeness itself, which represent hypotheses 1A through 1D. The relationship between perceived firm innovativeness and relative attractiveness is formulated as hypothesis 2. Finally, hypothesis 3 represents the relationship between relative attractiveness and purchase intention.

Figure 1.

Conceptual Model



Chapter 3 Methodology

This chapter introduces the methodology used to test the hypotheses formulated in Chapter 2. In Section 3.1 the research design is clarified. Section 3.2 describes the context in which the research is conducted. The pre-test and its results are explained in Section 3.3. This is followed in Section 3.4 by the actual survey design and the decisions taken in the survey development. Next, Section 3.5 explains how the data collected in the survey will be analysed. Section 3.6 contains the reliability and validity analyses of the survey results. Finally, Section 3.7 clarifies the research ethics that are considered when conducting the survey.

3.1 Research design

In this study, a descriptive and quantitative approach is deemed appropriate. The descriptive perspective is used to explain if the relationships between the constructs are valid and sufficiently useful to draw conclusions about the whole model. A quantitative survey with a larger sample size increases the reliability of the results when the sample is compared to the whole population. The design is based on the Norwegian Innovation Index (Lervik-Olsen & Andreassen, 2017), but changes were made to create a better fit with the research context. The research has been designed as a survey consisting of multiple parts: the introduction, the first three questions, the main part of the survey, and the demographic questions. The survey begins with an introduction to the research and the researcher, the ultimate goal, the time needed to finish the survey, and a thank you for participating. (Section 3.4 explains the structure of the survey in more detail.)

3.2 Context of the research

The context of this research is the Dutch travel industry and, in particular, the tour operators active in the Dutch market. Between October 2017 and September 2018, around 22 million travels were booked in the Netherlands with an average spending of around 2800 euros per household (*Netherlands: Leading tour operators, by revenue 2017*, 2021). The largest tour operator is still TUI, with more than 1.2 billion euros in revenue, followed by Corendon and the Sundio group (publicly known by the name Sunweb).

3.3 Sample of the population

The ideal number of survey respondents at a confidence interval of 90% and an alpha of 5% is at least 271 (Qualtrics, 2020). The data were collected between 17 June and 3 July 2021 from the population of consumers living in the Netherlands above 15 years old. The quantitative survey was distributed online via general social media posts on Facebook, Instagram, LinkedIn, and Twitter. To encourage people to fill in the survey, personal messaging was also used, communicating the request to help the researcher to graduate. Moreover, family and friends were asked to send the survey to others in their networks to create a larger pool. To increase the willingness of people to complete the survey, one 25-euro coupon for Bol.com will be raffled among the participants who fill in their email address. The platform used to collect the data was Qualtrics, which is well known for its user-friendly overview of results. The data was collected via convenience sampling, which means that respondents are not chosen in a completely random way, but rather the survey is spread via mouth-to-mouth (Hair et al., 2014). It is a fast data collection method, which is necessary due to the limited time period for this research. During the survey period, the respondents were checked regularly to see if the demographics adequately

reflected society. If a certain demographic group would be seriously underrepresented, an extra appeal could be done for that specific group to fill in the survey.

The final sample consists of 467 responses, of which 289 filled in the main part of the survey. Of those 289, three did not fill in the demographic questions but were still included in the analysis. A reason for the large number of dropouts could be that people did not think they had enough knowledge about tour operators or that they never travel with them. Most of the dropouts filled in a maximum of the first three questions.

3.4 Pre-test

Before the actual research, the entire survey was tested on 16 participants. The participants were not randomly chosen but were asked to help as part of the inner circle of the researcher. The respondents completed the survey and provided valuable feedback regarding the construction of sentences in the survey, the comprehensibility of the questions and statements, and the whole format of the survey. After feedback was received, the introduction to the research was adjusted with more information; some questions and statements were rewritten to make them easier to understand. The pre-test of the survey was also conducted via Qualtrics. Two respondents filled in the survey with the researcher present and were asked to read out loud to assess the readability of the questions. One question was adjusted to make it easier to read.

The data from the 16 participants were analysed in SPSS to determine the Cronbach's Alpha of the constructs. The construct 'change in value proposition' scored an alpha of 0.646. To increase the reliability, one extra item was added to value proposition after the pre-test. Moreover, relative attractiveness scored below 0.5 for Cronbach's Alpha. Moreover, for this construct, one item was added.

3.5 Survey

The survey opened with the aforementioned introduction to the research. The main part of the survey consisted of multiple pages with questions. First, respondents were asked how often they book a holiday via a tour operator (from never to more than once a year). Next, respondents were presented with the names of the three major tour operators—the largest tour operators in the Netherlands based on revenue—and they were asked to select the one they knew best. The respondent had no option for adding their own choice. In the next question, the respondent was asked to self-assess their level of knowledge of that tour operator. It is possible that a respondent had no or little knowledge about any of the tour operators in the question. Even if the respondent indicated a low level of knowledge, they are required to fill in the whole questionnaire. In this way, the effects of knowledge on the outcome could be assessed. The next page of the survey contained the set of five-point statements used to check for the perceived change in the antecedents of perceived firm innovativeness. These statements are based on the Norwegian Innovation Index (Lervik-Olsen et al., 2017), but they are adjusted to the context of the tour operators in the Netherlands. The possible answers of the five-point scale were: no change, less than average change, moderate change, more than average change and a large change. After the statements about the antecedents, respondents were asked to fill in four five-point statements about the perceived firm innovativeness, where the operationalisation is based on Kunz et al. (2011). Next, the respondents had to fill in statements regarding relative attractiveness. The four statements for relative attractiveness are based on Lervik-Olsen and Andreassen (2008). The statements with respect to perceived firm innovativeness and relative attractiveness could be answered on the following scale: completely disagree, disagree, don't agree/don't disagree, agree or completely agree. Purchase intention is measured using a scale

from Xu and Schrier (2019) with a five-point scale, varying from: for sure not, probably not, maybe, probably yes, and for sure yes.

Lastly, the demographic questions about age, gender, income, number of children, marital status, education, and employment status were asked. The number of children could be interesting in itself, as respondents with children might have different needs when booking a holiday than respondents without children (Conyette, 2011). An overview of all constructs, the original items from the literature, the translation and applied items in this research, and the sources can be found in the operationalisation in Appendix B.

3.6 Analysis of the data

Similar to the Norwegian Innovation Index, the data will be analysed with structural equation modelling (SEM) and partial least squares (PLS). Common tools to analyse the data with SEM-PLS are SmartPLS (which is used in the NII analyses) and Adanco. The latter analysis program, Adanco, is used in this research (Henseler et al., 2017). The greatest advantage of using Adanco and PLS is that it can test the whole model at once instead of testing the relationships one by one. Moreover, the model in the program can be easily adjusted to check several demographic dummy variables for their effects. The descriptives of the research will be analysed with the help of IBM SPSS.

3.7 Construct reliability and validity

Before any conclusions can be drawn, it is important that the constructs are reliable and valid. To check the internal consistency of the scales, the Cronbach's alpha is analysed. The alpha should be above 0.7 to indicate a good internal consistency of all the indicators used for

that construct. All constructs have an alpha higher than 0.7, so the internal consistency is achieved. However, relative attractiveness has one indicator (attract_1) which does not load on the same construct as the other three indicators (See appendix C for the pattern matrix with all indicators included.). Consequently, attract_1 is deleted from the analysis. The final construct, relative attractiveness, consists of the three remaining indicators. This also increases the alpha to 0.85, indicating a better consistency among the indicators.

To check the convergent validity of the constructs, an exploratory factor analysis has been conducted, including only the indicators of one construct at a time. The convergent validity of the constructs is assessed by the percentage of explained variance, which has to be above 50% to ensure validity. This requirement is met in all cases, so the indicators converge on the same construct.

The correlation matrix indicates if the variables are correlated—which they should be, according to the hypotheses. All correlations between the variables depicted in Table 2 are significant.

In Table 3, the pattern matrix is displayed. All the items load on one single component, except for innov_1. However, the value of that item is clearly larger for component five in this table, so the discriminant validity is ensured; the constructs are statistically different from each other. The factor analysis has been conducted with a Promax rotation.

Table 1.
Internal Consistency and Convergence Validity

Construct	# of items	Cronbach's alpha	# of items deleted	Cronbach's alpha	% explained variance
Value proposition	4	0.898	0		77%
Value delivery	4	0.895	0		76%

Customer treatment	3	0.934	0		88%
Interaction space	3	0.907	0		84%
Perceived innovativeness	4	0.848	0		69%
Relative attractiveness	4	0.792	1	0.850	77%
Purchase intention	4	0.950	0		87%

Table 2.
Correlation Matrix and Descriptive Statistics

	1	2	3	4	5	6	7
1. Value proposition							
2. Value delivery	0.77						
3. Customer treatment	0.69	0.74					
4. Interaction space	0.60	0.73	0.59				
5. PFI	0.31	0.35	0.30	0.31			
6. Relative attractiveness	0.24	0.27	0.20	0.28	0.47		
7. Purchase intention	0.31	0.26	0.19	0.26	0.46	0.46	
Mean	2.18	2.12	2.13	2.21	3.10	3.37	3.16
Standard Deviation	1.09	1.04	1.19	1.12	0.84	0.78	1.08

$N = 289$; all $p < 0.01$

Table 3.
Rotated Factor Analysis Solution

Pattern Matrix							
	Component						
	1	2	3	4	5	6	7
Prop_2	0.925						
Prop_1	0.86						
Prop_4	0.834						

Prop_3	0.815			
Intent_1	0.958			
Intent_2	0.924			
Intent_4	0.92			
Intent_3	0.913			
Space_1		0.972		
Space_2		0.931		
Space_3		0.803		
Treat_1			0.961	
Treat_2			0.906	
Treat_3			0.819	
Innov_4				0.87
Innov_3				0.869
Innov_2				0.841
Innov_1				0.725
Attract_3				-0.408
Attract_2				0.939
Attract_4				0.835
Deliv_2				0.813
Deliv_3				0.653
Deliv_1				0.587
Deliv_4				0.465
			0.321	0.389

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalisation.

A Rotation converged in seven iterations.

3.8 Research ethics

The respondent should not feel obliged to complete the survey, and anonymity should be guaranteed. Participants in this research were asked to fill in the survey to help the researcher

graduate from university and were aware that no reward is included for its completion. Only one respondent could win a Bol.com gift card to increase the willingness to participate fully. In the introductory text, it is clearly indicated that participation is highly appreciated to help the researcher graduate from university. The time to fill in the questionnaire should be a maximum of ten minutes, but preferably five to seven minutes. Before the survey was broadcast, it was tested for time consumption to avoid an unnecessarily lengthy survey. Moreover, the contact details from the researcher were shared if any questions or remarks regarding the survey were to arise. The respondent could also fill in their email address in order to receive the results of the survey afterwards. The last question was an open question where the respondent could indicate any remarks about the survey. After the last question, the survey showed a message thanking the respondent for the time spent on the survey and emphasising anonymity once again.

Chapter 4 Results

This chapter contains the results from the statistical analyses conducted. Section 4.1 presents the descriptive results derived from SPSS, while Section 4.2 explains the reasoning behind the creation of the dummy variables. Section 4.3 lays out the results from the PLS analyses from Adanco. Last, section 4.4 includes the alternative analyses conducted based on the results.

4.1 Descriptive analysis

To assess the sample and its representativeness of the population, the respondents were asked to answer several demographic questions. With respect to the gender of the respondents, the number of females (57.4%) was higher than the number of males (39.8%). Eight respondents either did not answer the question or selected ‘other’ in the survey. Regarding the age, the greatest part of the sample falls into the 18-34 category (54.3%). Moreover, the group of respondents in the 45-54 group (18.3%) is remarkably larger than the other age groups. In Table 4, the demographics are visually displayed. In terms of the education level, it is notable that the majority of the respondents (78.9%) have a degree in the two highest levels of education in the Netherlands (e.g., HBO and university), which is a consequence of the convenience sampling method. The respondents mostly did not have any children (60.9%). The majority of the respondents chose the market leader Tui (55.4%), followed by Corendon (28%) and Sunweb (16.6%).

Table 4.
Demographic Table

		Frequency	Percentage
Gender	Male	115	39.8
	Female	166	57.4
	Other	8	2.8
Age	18-24	64	22.1
	25-34	93	32.2
	35-44	39	13.5
	45-54	53	18.3
	55-64	29	10.0
	65-74	5	1.7
	75-80	3	1.0
	Other	3	1.0
Education	Basisschool	1	0.3
	Middelbaar	12	4.2
	MBO	45	15.6
	HBO	119	41.2
	University	109	37.7
	Not specified	3	1.0
Job	Fulltime	153	52.9
	Parttime	63	21.8
	Unemployed	8	2.7
	Pensioned	9	3.1
	Student	53	18.3
	Not specified	3	1.0
Marriage	Married	102	35.3
	Divorced	11	3.8
	Alone	102	35.3

	Living togeth.	71	24.6
	Not specified	3	1.0
Child	No	176	60.9
	Yes, one	31	10.7
	Yes, two	48	16.6
	Three or more	31	10.7
	Not specified	3	1.0
Income	0-25.000	75	26.0
	25.000-50.000	101	34.9
	Over 50.000	110	38.1
	Not specified	3	1.0

4.2 Dummy variables

The control variables mentioned in chapter 3 were transformed into dummy variables to be able to assess any differences across the groups. The control variables included in the analysis with Adanco (see section 4.3) were: age, job, marriage, income, child, gender, education, frequency and knowledge. The final analysis explained in section 4.3 only includes the ones with a significant influence in the model.

Some of the dummy variables contain a natural cut-off point, to divide the groups into two categories. The variables gender (male/female) and child (yes/no) are easily divided into two groups. Age is divided into two groups based on the group sizes, to create two equally sized groups. The variable is divided into a young group (30 years or younger) and the older group (over 30 years old). Education is split into lower education (primary school, middle school, MBO) and higher education (HBO, University). Also the variables frequency and knowledge

were separated into two groups. For the frequency of booking, a cut-off was made at respondents indicating they book with a tour operator at least once every few years. This resulted in two groups: the group that never books at a tour operator versus the group that sometimes books a travel via a tour operator. The variable knowledge is cut-off between respondents that know the tour operator only little or moderate and respondents that know the tour operator at least average or better. The control variables job, marriage and income included all the categories available with the reference categories full time, married and high income (over 50.000 euro).

In the analysis, the values of the control variables were checked if the groups gave significantly different responses. The results show that three control variables are significantly influencing the results and therefore have to be included in the model—namely, the knowledge of the tour operator, the frequency of booking with a tour operator, and the level of education of the customer.

4.3 PLS-SEM analysis

The relationships between the constructs of the model are measured in Adanco, a statistical program that is able to calculate strength and value in complex models simultaneously. Adanco is variance-based Structural Equation Modelling (SEM) with Partial Least Squares (PLS; Henseler et al., 2017).

The graphical image of the Adanco model used in this research can be found in Appendix C. The four antecedents are included as exogenous latent variables, with four and three indicators per antecedent. ‘Perceived firm innovativeness’ is also an exogenous latent variable with four indicators. In the model, the exogenous latent variable ‘relative attractiveness’ has three

indicators because the first indicator was deleted after the factor analysis. Finally, ‘purchase intention’ is an endogenous variable with four indicators.

In the model, the dummy variable ‘knowledge’ is included, which represents the group of respondents who indicated to have at least moderate knowledge on the tour operator. The dummy variable has an effect on the endogenous variable ‘purchase intention’.

4.3.1 Measurement model

To be able to assess the structural model in SEM, first it is important that the measurement model is assessed and that a good model fit has been established (Henseler, Hubona & Ray, 2017). The model fit compares the estimated model’s covariance matrix with the actual, observed covariance matrix. There are several tests to establish a good model fit. The first test is the SRMR—a measure of approximate model fit—which compares the correlation matrix from the theory and the observed correlation matrix. To ensure a good model fit, the SRMR cannot exceed the 0.08 threshold for both the saturated (observed) model and the estimated model (Henseler et al., 2017). In this research, the SRMR value of the saturated model is 0.0401, and the estimated model is 0.0684; as both are beneath the threshold, there is a good model fit.

The assessment of the measurement model normally also includes a check of the internal consistency and the convergent validity. These measures are already assessed in Chapter 3 using SPSS, with the Cronbach’s alphas and the average variance extracted (AVE). Adanco also indicates that all Cronbach’s alphas are above 0.7 and that the AVE is above 50% for all constructs (see Appendix C). The discriminant validity is important to ensure that the factors are different enough and that the indicators do not correlate too much with each other. This discriminant validity is assessed with the HTMT ratio, which has to be below 0.85. In the

Adanco output, value proposition and value delivery correlate just above the threshold with a value of 0.8584. This means that the high correlation between the antecedents needs to be taken into account when drawing conclusions about the outcomes of the model.

4.3.2 Structural model

The structural model assesses the relationships of the endogenous constructs in the model. In this research, purchase intention is the only clear endogenous construct. Besides purchase intention, also perceived firm innovativeness and relative attractiveness are partly endogenous of origin as they receive input from other constructs.

Table 5.
Coefficient of Determination Table

Construct	R ²	Adjusted R ²
PFI	0.1389	0.1268
Relative attractiveness	0.2201	0.2173
Purchase intention	0.4428	0.4350

4.3.3 Assessment path coefficients and effects

The output of Adanco indicates both the strength and direction of the relations between independent variables and the dependent variables. The path coefficients are the beta values, whereas the *t* value and the *p* value are results from the bootstrapping method (See appendix C). A confidence interval of 95% is applied, where the *t* value is above 1.96 (Hair et al., 2014). The value of Cohen's *f*² is used to interpret the effect sizes of the paths in the model. The value of *f*² indicates a weak effect for *f*² larger than 0.02, a moderate effect when larger than 0.15, and a

large effect when the f^2 is above 0.35 (Henseler et al., 2017). A f^2 lower than 0.02 indicates there is an unsubstantial effect size.

The effect of value proposition on perceived firm innovativeness has a positive path coefficient of 0.0810, but the relationship is non-significant and unsubstantial ($f^2 < 0.02$) according to Adanco. The second antecedent value delivery has a positive effect of 0.1798 on PFI, which is not significant and unsubstantial. Third, customer treatment has a positive effect on PFI (0.0455) where the p -value is non-significant and the f^2 is lower than 0.02 and thus has an unsubstantial effect size. The fourth antecedent, interaction space, also has a positive effect on PFI (0.1108) and is deemed non-significant. Moreover, the effect size f^2 is unsubstantial ($f^2 = 0.0064$).

The direct effect of perceived firm innovativeness on the relative attractiveness of tour operators has a beta value of 0.4691, is significant, and with a f^2 of 0.2822 has a moderate effect size. The last direct effect, relative attractiveness on purchase intention, has a path coefficient of 0.3273, significant p -value, and a moderate effect size ($f^2 > 0.15$) of 0.1728. The control variable knowledge also has a significant relationship with purchase intention, with a path coefficient of 0.2965, and weak effect size of 0.1206. The next control variable, frequency, has a significant relationship with purchase intention with a path coefficient of 0.3058 and a weak to moderate effect size of 0.1448. Lastly, the control variable education has also a significant relationship with purchase intention, with a negative path coefficient of 0.1119 and a weak effect size of 0.0209.

Adanco also found a significant indirect effect of PFI on purchase intention of 0.1535. Because it is an indirect effect, the effect size is not determined by Adanco. All other indirect effects were non-significant and can be found in Appendix C.

Table 6.
Summary of Path Analysis

Direct effects		Beta	<i>t</i>	<i>p</i> -value	Sign.
Value proposition	PFI	0.0810	0.7991	0.2122	No
Value delivery	PFI	0.1798	1.5754	0.0577	No
Customer treatment	PFI	0.0455	0.4978	0.3094	No
Interaction space	PFI	0.1108	1.4571	0.0727	No
PFI	Relative attractiveness	0.4691	8.4099	< 0.001	Yes
Relative attractiveness	Purchase intention	0.3273	6.5573	< 0.001	Yes
Control variables					
Dummy Knowledge	Purchase intention	0.2540	4.8490	< 0.001	Yes
Dummy Frequency	Purchase intention	0.3058	6.0990	< 0.001	Yes
Dummy Education	Purchase intention	-0.1119	-2.5368	0.0057	Yes
Indirect effects					
PFI	Purchase intention	0.1535	4.2980	< 0.001	Yes

Table 7.
Effect Sizes

	Cohen's f^2	Effect strength
Direct effects		
Value proposition PFI	0.0028	Unsubst.
Value delivery PFI	0.0096	Unsubst.
Customer treatment PFI	0.0010	Unsubst.
Interaction space PFI	0.0064	Unsubst.
PFI Relative attractiveness	0.2822	Moderate
Relative attractiveness Purchase intention	0.1728	Moderate

Control variable

Dummy Knowledge	Purchase intention	0.0935	Weak
Dummy Frequency	Purchase intention	0.1448	Weak/Mod.
Dummy Education	Purchase intention	0.0209	Weak

Indirect effects

PFI	Purchase intention	No result	No result
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4.4 Alternative analyses

The results show that none of the antecedents of PFI have a significant relationship with PFI. As mentioned before, it could be that they are not significant due to the inclusion of respondents without or with limited knowledge of the tour operators. Moreover, it could be that respondents never booked with a tour operator before and therefore did not know what to answer in the survey. The original analysis contained all the 289 respondents who filled in the main part of the survey, including the 3 respondents who did not fill in the demographic questions in the end. The goal of this sector is to see if alternative analyses show different outcomes in terms of the p-value of the relationships of the antecedents with PFI. The alternative analyses sector consists of 3 different analyses conducted with Adanco. First, the original analysis is replicated but without the respondents answering they have the lowest amount of knowledge possible for the selected tour operator (N=240 remaining). The second analysis disregards the respondents who answered either the lowest knowledge, or the second to lowest knowledge. The remaining respondents for the second analysis indicated they had at least an average amount of knowledge (N=166 remaining). The last alternative analysis includes only respondents who booked with a tour operator at least once during the last few 2 to 3 years (N=191 remaining). This analysis does not include respondents who never travel with a tour operator.

The results of the 3 alternative analyses did not lead to different results compared to the results of the original analysis. The p-value of all 4 antecedents in relation to PFI is not significant in the 3 alternative analyses. An overview of the analyses in this sector can be found in Appendix D.

Chapter 5 Conclusions

The final chapter of this thesis first draws conclusions on the central research question and discusses the results of the analyses in Chapter 4. Next, in Section 5.2 the practical implications for both the academic and practical world are discussed. Finally, the limitations of the study and possibilities for further research are presented.

5.1 Conclusion and discussion

The main topic of this research was to determine which factors influence the perceived firm innovativeness of customers in the context of Dutch tour operators. Moreover, the relationships between PFI, relative attractiveness, and the purchase intention are researched so as to estimate how they influence each other. This led to the following research question: “*Which factors influence the consumer perceived firm innovativeness of tour operators and how does that affect the purchase intention?*” Hypotheses 1a, 1b, 1c and 1d include the four antecedents in their relationship with perceived firm innovativeness. The results show that all four antecedents are not significant. Hypothesis 2 describes the relationship between perceived firm innovativeness and relative attractiveness as a positive effect of PFI on relative attractiveness. This hypothesis is accepted as there is a positive significant relationship between the two constructs. Lastly, hypothesis 3 describes the positive relationship between relative attractiveness and purchase intention. Moreover, hypothesis 3 is accepted as a result of the significant positive results in Adanco. The hypotheses are summarised in Table 8.

Table 8.
Overview of the Hypotheses

Constructs	Hypothesis	Result
Value proposition - PFI	Perceived change in value proposition has a positive effect on perceived firm innovativeness.	Not supported
Value delivery - PFI	Perceived change in value delivery has a positive effect on perceived firm innovativeness.	Not supported
Customer treatment - PFI	Perceived change in customer treatment has a positive effect on perceived firm innovativeness.	Not supported
Interaction space - PFI	Perceived change in interaction space has a positive effect on perceived firm innovativeness.	Not supported
PFI - Relative attractiveness	The perceived firm innovativeness has a positive effect on the relative attractiveness.	Supported
Relative attractiveness - Purchase intention	Relative attractiveness has a positive effect on purchase intention.	Supported

The main research question cannot be answered satisfactorily with these results, as the four antecedents all have non-significant relationships with consumer perceived firm innovativeness. The four antecedent-PFI relationships were alternatively analysed without the lowest scoring groups on knowledge, without the two lowest scoring groups on knowledge and without the lowest scoring group on frequency of booking. Those analyses also did not show any significant relationships regarding the 4 antecedents and PFI. The second part of the research question, the effects of PFI on relative attractiveness and the effects of relative attractiveness on purchase intention, show positive relationships between each other. A higher perceived firm innovativeness significantly increases the relative attractiveness of a tour operator and a higher relative attractiveness results in a higher purchase intention in the research. Moreover, the results present a clear influence of the control variable ‘knowledge’. If the respondent found itself at least moderately knowledgeable about the tour operator, this increases the purchase intention.

The control variable frequency of booking also has a significant influence on the purchase intention. Respondents who booked via a tour operator in recent years are likely to have a higher purchase intention than respondents who did not book a travel at a tour operator. The third control variable 'education' has a negative effect on the purchase intention when the respondent has finished a higher educational degree. Lastly, there is a significant indirect effect between the perceived firm innovativeness and the purchase intention. This indicates there is a mediation effect which is still undiscovered.

This research is based on Lervik-Olsen et al. (2017) and Keiningham et al. (2019) and aimed to create a better understanding of the relationships of the four antecedents (change in value delivery, value proposition, customer treatment and interaction space) with perceived firm innovativeness. There are some important differences between the Norwegian Innovation Index (Lervik-Olsen et al., 2017) and this research. The NII has a much larger sample size (40,000 respondents) and investigates the relationship between the customer and the firm. The sample size in this research is smaller ($N = 289$) and the respondents do not necessarily have to have booked a holiday with the tour operator they selected. That is also the reason why customer loyalty is replaced in this research with purchase intention. Another important difference is that this research does not account for emotions as a construct in the model, as the respondent does not have to have a historical booking experience with the tour operator. The differences between the research of Lervik-Olsen et al. (2017) and the current research possibly explain the difference in significance for the four antecedents in relation to PFI. It is possible that actual customers follow the company better and know better what offers they have, especially if the customer is a returning and loyal customer. The current research asked the respondents to indicate their knowledge based on self-assessment; this knowledge has not been tested for objectivity. For

non-customers, it is presumably difficult to observe differences in the innovation points; and their answers, therefore, might not be useful. In section 4.4 (also see Appendix D) the non-customers have been left out of the original analysis to check if the non-significant outcomes from hypotheses 1a-1d were also not significant for respondents who indicated that they have booked a holiday with a tour operator at least once in the recent years. Unfortunately, no differences were found between the two analyses regarding the frequency of booking. This could indicate that it is difficult to perceive change, both for customers and non-customers. Often customers do not notice changes in service industries like tourism, because they either do not notice them or they do not put emphasis on the changes when they happen (Zolfagharian & Paswan, 2008). In general the services that a tour operator offers are not changing radically, in the end it will still include the booking process, accommodation and transportation. It is a possibility that the respondents in this research were not informed enough to answer questions about the changes in the value proposition, value delivery, customer treatment and interaction space due to the low visibility or the size of the changes. This could have caused the hypotheses 1a-1d to be not significant.

The relationships between the perceived firm innovativeness, relative attractiveness and purchase intention were also part of the main research question. Conform the literature (Andreassen & Lervik-Olsen, 1999; Henard & Dacin, 2010) the relationships between the three variables were significant and substantial. Through the whole research the perception of the customer was central, in contrast with most firm innovativeness literature before Kunz et al. (2011) created a benchmark for further research. The results have shown that when a customer perceives a tour operator as innovative, they perceive it as relatively more attractive than the competition and thus increasing the purchase intention. As mentioned before, purchase intention

is a good indicator of the actual purchase or booking of a holiday (Morwitz et al., 2007). In the end, it is the customer that has a big influence on the success of a company as they have to make the actual decision to buy a service or a good. It is therefore good to acknowledge the customer's view on the innovativeness as important and one to monitor. Moreover, if firms want customers to perceive them als innovative they should create a track record of multiple visible innovations (Henard & Dacin, 2010) as they need to have a creative, dynamic and market-changing image over a longer period of time (Kunz et al., 2011). It is important for traditional tour operators to maintain or create this innovative image as the arrival of disruptors (like Airbnb, Booking.com) in the market has increased the competitiveness.

5.2 Practical implications

This research contributes to the general knowledge of perceived firm innovativeness from the perspective of the customers, as it indicates the importance of PFI on the actual purchase intention for tour operators in the Netherlands. This indicates that managers should continue to positively influence the consumer perceived firm innovativeness of their firm, by actively monitoring their customers, their needs, and when the customer perceives changes in innovations. If a tour operator does not improve their PFI, it can possibly lose attractiveness compared to their competitors and they could suffer from a lower purchase intention of travellers. This could lead to financial problems and ultimately the same faith as the bankrupt Thomas Cook. Unfortunately, the results are not clear enough to say exactly where tour operators can best make adjustments when it comes to the antecedents of the perceived firm innovativeness. Although the relationships of the four antecedents of PFI were not supported by the results, it does not mean they don't have a positive influence at all. They can still be helpful

for tour operators to identify the areas where they can focus on. Further market research should be done by the company to clarify the most important areas for their customers.

An important goal of this research was to fill the gap in the literature regarding the validity of the antecedents and the relationships of perceived firm innovativeness from the customers' perspective. The results contribute to filling the gap partially, especially regarding the importance of the customer view of innovativeness. Although the results of the antecedents are non-significant, they indicate that they are a better fit in a direct customer environment and are not very useful when non-customers are also included in the research.

5.3 Limitations and further research

This section discusses several limitations that applied to this research. Those limitations can be suggestions to other researchers who would like to increase the knowledge on the topic of this research. The first important limitation is the context of tour operators in the Netherlands. It is unclear if all the results will apply also in other segments of the tourism industry, other countries or other sectors. The second limitation is the control variable 'knowledge', which is self-assessed by the respondent. This can result in an overestimation or underestimation of their knowledge. Due to time constraints it was not possible to objectively test the knowledge of the respondent regarding the selected tour operator. A recommendation for further research is to test the knowledge of a respondent objectively so as to create a more scientifically valid variable. The third limitation concerns the convenience sampling technique used in this research., where respondents are partly coming from the (in)direct acquaintances of the researcher. The sample does not represent the population in some demographic categories—for example, in the percentage of respondents with a university degree. The fourth limitation is the time frame in

which the research has been conducted. During the survey period, travelling was uncertain due to the Covid-19 pandemic in various holiday countries. In 2020, booked holidays have been cancelled due to travel restrictions set by governments and in 2021 the situation is uncertain for the largest part of the year. Additional requirements like proof of vaccination or a negative test certificate were needed for most countries. Travelling outside of Europe is often still not possible as countries like the United States and Australia do not allow foreigners without an essential purpose. There is also a possibility that the pandemic period has caused a lower knowledge of the tour operators and a lower purchase intention due to these travel restrictions. Future research should ideally be conducted when the tourism industry has recovered or when the uncertainty of travelling is more limited. Limitation five is that tour operators often make use of other companies, for example airlines, hotels, taxi or bus companies and restaurants. The experiences of the customer of the tour operator could be influenced by the other companies, resulting in a biased perception of that tour operator. Lastly, the sixth limitation is regarding the survey. For some respondents it was not clear if the change in one of the antecedents of PFI could be positive, negative or both. According to Lervik-Olsen et al. (2017) every change should cause an increase in PFI, in theory. In the future, researchers are advised to mention that the respondent can perceive change both positively and negatively. Moreover, another control question can be asked if the change they perceived is a positive or negative change as this could make a difference in outcome.

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Appendix A - Survey

Beste lezer,

Met het invullen van deze vragenlijst helpt u mij afstuderen aan de Radboud Universiteit voor mijn master International Business, waarvoor dank!

Het uiteindelijke doel van dit onderzoek is om de mening van vakantiegangers beter inzichtelijk te krijgen zodat reisorganisaties beter kunnen inspelen op de behoeften en wensen van de klant.

Het invullen duurt ongeveer 10 minuten en serieuze antwoorden dragen bij aan het beantwoorden van de onderzoeksvraag. Het is belangrijk om te vermelden dat u volledig anoniem blijft. Mocht u het op prijs stellen om de resultaten van het onderzoek te ontvangen, kunt u uw e-mailadres achterlaten in het opmerkingenveld. Een Bol.com cadeaukaart van 25 euro zal verloot worden onder de deelnemers die het e-mailadres hebben achtergelaten.

Alvast heel erg bedankt voor het invullen!

Brian Brands

1. Hoe vaak boekt u een vakantie via een touroperator?
2. Onderstaand vindt u een lijst met de 3 grootste touroperators in Nederland. Welke touroperator kent u het beste?
3. Hoe goed kent u de touroperator die u in de vorige vraag geselecteerd heeft?
4. Denkt u aan het aanbod van touroperator X². In hoeverre heeft u in de laatste jaren een verandering waargenomen in:
 - hoe X voldoet aan uw wensen
 - hoe X tegemoet komt aan uw behoeften
 - het algehele aanbod
 - hoe goed X kan leveren wat u wil
5. Denkt u aan uw ervaringen met touroperator X. In hoeverre heeft u in de laatste jaren een verandering waargenomen in:
 - de manier waarop X zijn aanbod levert
 - hoe makkelijk het is om gebruik te maken van het aanbod van X
 - de leveringssnelheid van X
 - hoeveel inspanning u moet leveren als u gebruik maakt van het aanbod van X
6. Denkt u aan uw ervaringen hoe touroperator X omgaat met zijn klanten. In hoeverre heeft u in de laatste jaren een verandering waargenomen in :

² The program of Qualtrics automatically changes X into the tour operator the respondent selected in question 2.

- hoe X met u omgaat als klant
 - de manier waarop X u verzorgt als klant
 - de manier waarop X met u communiceert
7. Denkt u aan uw ervaring met de website en fysieke faciliteiten (winkels) van X. In hoeverre heeft u in de laatste jaren een verandering waargenomen in:
 - het uiterlijk van de webpagina of fysieke winkel?
 - het design van de fysieke omgeving (de winkel) of de online omgeving van X?
 - de aantrekkelijkheid van de faciliteiten (digitaal en fysiek) van X?
 8. In hoeverre bent u het eens met de volgende stellingen:
 - X verandert de markt met haar aanbod
 - X is een heel creatief bedrijf
 - X is een pionier in zijn markt
 - X is een innovatief bedrijf
 9. Vergelijk X met andere tour operators. In hoeverre bent u het eens met de volgende stellingen:
 - X heeft betere prijzen dan andere tour operators
 - X biedt producten en diensten aan van betere kwaliteit, vergeleken met andere tour operators
 - X heeft een betere reputatie dan vergelijkbare tour operators
 - X is aantrekkelijker dan andere tour operators
 10. In hoeverre bent u het eens met de volgende stellingen:
 - De kans dat ik zou overwegen om een vakantie via X te boeken, is groot.
 - Het is waarschijnlijk dat ik de volgende keer een vakantie boek via X
 - Mijn bereidheid om via X vakantie te boeken is hoog
 11. Wat is uw leeftijd? (in cijfers, bijvoorbeeld: 39)
 12. Wat is uw geslacht?
 13. Wat is uw hoogst genoten opleiding?
 14. Welke situatie past het best bij u? (werk)
 15. Welke situatie past het best bij u? (relatie)
 16. Heeft u kinderen onder de 18 jaar oud?
 17. Wat is het jaarlijkse inkomen van uw huishouden?
 18. Wilt u nog iets toevoegen of opmerken over de vragenlijst?
 19. Als u wil, kunt u hier uw e-mailadres opgeven om de resultaten van het onderzoek te ontvangen. Ook maakt u dan kans op een Bol.com cadeaukaart van 25 euro!

Na het versturen van de resultaten en het loten van de cadeaukaart worden de e-mailadressen binnen 7 dagen verwijderd uit het systeem.

Bedankt voor de tijd die u heeft genomen om aan deze enquête deel te nemen.

Uw antwoord is geregistreerd.

Appendix B - Operationalisation table

Construct	Definition	Original item	Adapted items	SPSS code	Source
Change in value proposition	The degree to which the consumer perceives the functionality and usefulness of the product or service as new as compared to existing alternatives	<p>-Think about the market offerings of company X. During the last years, to what extent has there been a change in:</p> <p>How the offerings of X match your wants?</p> <p>How the offerings of X meet your needs?</p> <p>X's overall market offerings?</p>	<p>-Denkt u aan het aanbod van touroperator X. In hoeverre heeft u in de laatste jaren een verandering waargenomen in</p> <p>hoe X voldoet aan uw wensen?</p> <p>hoe X tegemoet komt aan uw behoeften?</p> <p>het algehele aanbod van X</p> <p>hoe goed X kan leveren wat u wil</p>	<p>Prop_1</p> <p>Prop_2</p> <p>Prop_3</p> <p>Prop_4</p>	Lervik-Olsen, Kurtmollaiev & Andreassen, 2017
Change in value delivery	The degree to which the consumer perceives the process	-Think about your experience with getting what X offers.	-Denkt u aan uw ervaringen met touroperator X. In		Lervik-Olsen, Kurtmollaiev & Andreassen, 2017

	of offering the product or service as new	<p>During the last years, to what extent has there been a change in:</p> <p>The way X delivers what it offers</p> <p>How easy it is to make use of X's offerings</p> <p>How fast X delivers what it offers</p> <p>Your efforts when making use of X's offerings?</p>	<p>hoeverre heeft u in de laatste jaren een verandering waargenomen in</p> <p>De manier waarop X zijn aanbod levert</p> <p>hoe makkelijk het is om gebruik te maken van het aanbod van X</p> <p>De leveringssnelheid van X</p> <p>Hoeveel inspanning u moet leveren als u gebruikt maakt van het aanbod van X</p>	<p>Deliv_1</p> <p>Deliv_2</p> <p>Deliv_3</p> <p>Deliv_4</p>	
Change in customer treatment	The degree to which the consumer perceives the interaction between him/her and the firm as new	<p>-Think about your experience with how X takes care of their customers. During the last years, to what extent has there been a change in:</p> <p>The way X treats you as a customer</p>	<p>-Denkt u aan uw ervaringen hoe touroperator X omgaat met haar klanten. In hoeverre heeft u in de laatste jaren een verandering waargenomen in</p> <p>hoe X met u omgaat als klant</p>	Treat_1	Lervik-Olsen, Kurtmollaiev & Andreassen, 2017

		<p>The way X takes care of you as a customer</p> <p>The way X communicates with you</p>	<p>Waarop X u verzorgt als klant</p> <p>Waarop X met u communiceert</p>	<p>Treat_2</p> <p>Treat_3</p>	
Change in interaction space	The degree to which the consumer perceives the appearance of the physical and virtual surrounding of the innovation as new	<p>-Think about your experience with X's physical and digital facilities. During the last years, to what extent has there been a change in:</p> <p>The appearance of X's web page or the interiors</p> <p>The design of physical surroundings or digital solutions</p> <p>The visual appeal of X's facilities</p>	<p>-Denkt u aan uw ervaring met de website en fysieke faciliteiten (winkels) van X. In hoeverre heeft u in de laatste jaren een verandering waargenomen in</p> <p>Het uiterlijk van de webpagina of fysieke winkel</p> <p>Het design van de winkel of de online omgeving van X</p> <p>De visuele aantrekkelijkheid van de faciliteiten</p>	<p>Space_1</p> <p>Space_2</p> <p>Space_3</p>	Lervik-Olsen, Kurtmollaiev & Andreassen, 2017

			(digitaal of fysiek) van X		
Perceived innovativeness	The consumer's perception of an enduring firm capability that results in novel, creative, and impactful ideas and solutions for the market	<p>-To what extent do you agree or disagree to the following statement:</p> <p>X changes the market with its offerings</p> <p>X is a very creative company</p> <p>X is a pioneer in its category</p> <p>X is an innovative company</p>	<p>-In hoeverre bent u het eens met de volgende uitspraken:</p> <p>X verandert de markt met haar aanbod</p> <p>X is een heel creatief bedrijf</p> <p>X is een pionier in zijn markt</p> <p>X is een innovatief bedrijf</p>	<p>Innov_1</p> <p>Innov_2</p> <p>Innov_3</p> <p>Innov_4</p>	Kunz, Schmitt & Meyer, 2011
Relative attractiveness	How attractive is a firm towards its competitors	<p>-Please compare X with other companies that offer similar products and services. To what extent:</p> <p>Does X have better prices than other similar companies?</p>	<p>-Vergelijk X met andere tour operators. In hoeverre bent u het eens met de volgende stellingen:</p> <p>X heeft betere prijzen dan andere tour operators</p>	<p>Attract_1</p>	Andreassen & Lervik-Olsen, 2008

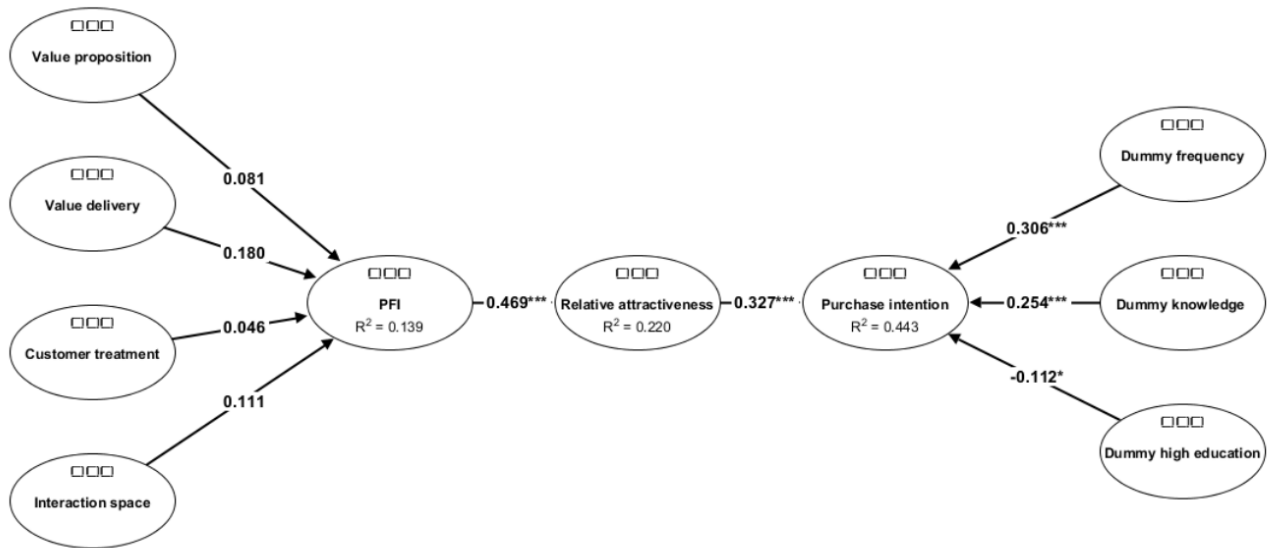
		<p>Does X provide products and services of better quality, compared to other companies?</p> <p>Does X have a better reputation than other similar companies?</p> <p>Is X more attractive than other companies?</p>	<p>X biedt producten en diensten aan van betere kwaliteit, vergeleken met andere tour operators</p> <p>X heeft een betere reputatie dan andere tour operators</p> <p>X is aantrekkelijker dan andere tour operators</p>	<p>Attract_2</p> <p>Attract_3</p> <p>Attract_4</p>	
Purchase intention	The likelihood of purchase of a brand, product or a service when confronted with a buy decision situation	<p>-To what extent do you agree or disagree to the following statement:</p> <p>The probability I would consider booking an accommodation from this website is high</p> <p>If I were to book an accommodation, I would consider booking it from this website</p> <p>The likelihood of my booking an</p>	<p>In hoeverre bent u het eens met de volgende stellingen:</p> <p>De kans dat ik zou overwegen om een vakantie via X te boeken, is groot</p> <p>Als ik een vakantie zou boeken, zou ik overwegen om deze via X te boeken</p> <p>Het is waarschijnlijk dat ik de volgende</p>	<p>Intent_1</p> <p>Intent_2</p> <p>Intent_3</p>	Xu & Schrier, 2019

		accommodation from this website is high My willingness to book an accommodation from this website is high	keer een vakantie boek via X. Mijn bereidheid om via X een vakantie te boeken is hoog	Intent_4	
Frequency of booking	How often someone books via a tour operator	How often do you book a holiday via a tour operator or travel agency?	Hoe vaak boekt u een vakantie via een touroperator?	Freq	
Tour operator		From the following list, select which tour operators you know best what they offer.	Onderstaand vindt u een lijst met de 3 grootste touroperators in Nederland. Welke kent u het beste wat betreft het aanbod dat ze aanbieden?	Tour	
Knowledge of offer	How well someone knows what a tour operator offers	How well do you know the offers of X?	Hoe goed kent u de tour operator die u in de vorige vraag geselecteerd heeft?	Know	
Age	Age in years	What is your age?	Wat is uw leeftijd?	Age	
Gender	(identified) sex	What is your gender?	Wat is uw geslacht?	Sex	
Education	Level of education	What is your highest followed education?	Wat is uw hoogst genoten opleiding?	Edu	

Job	Job situation	Which situation is applicable to you? Student Unemployed , Working, Pensioned, Other (specify:)	Welke situatie past het best bij u? (werk)	Job	
Amount of children	Number of children someone takes care of	Do you have children under 18?	Heeft u kinderen onder de 18 jaar oud?	Child	
Income	Amount of income in Euro	What is your income yearly?	Wat is uw jaarlijkse inkomen?	Income	
Country of residence		What is your country of residence?	In welk land woont u?	Country	
Marital status		What is your marital status?	Welke situatie past het best bij u? (relatie)	Marriage	

Appendix C - Output of the statistical programs

Graphical representation of the model



Overall Model

Goodness of model fit (saturated model)

	Value	HI95	HI99
SRMR	0.0401	0.0355	0.0374
d _{ULS}	0.6537	0.5108	0.5668
d _G	0.4712	0.4783	0.5124

Goodness of model fit (estimated model)

	Value	HI95	HI99
SRMR	0.0684	0.0493	0.0537
d _{ULS}	1.8998	0.9875	1.1714
d _G	0.5224	0.4922	0.5258

Construct Reliability

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_C)	Cronbach's alpha(α)
Value proposition	0.9109	0.9286	0.8980
Value delivery	0.9054	0.9271	0.8954
Customer treatment	0.9373	0.9579	0.9340
Interaction space	0.9228	0.9416	0.9077
PFI	0.8475	0.8973	0.8470
Relative attractiveness	0.8611	0.9088	0.8500
Purchase intention	0.9502	0.9638	0.9499
Dummy knowledge	1.0000	1.0000	
Dummy frequency	1.0000	1.0000	
Dummy high education	1.0000	1.0000	

Convergent Validity

Construct	Average variance extracted (AVE)
Value proposition	0.7651
Value delivery	0.7609
Customer treatment	0.8835
Interaction space	0.8431
PFI	0.6864
Relative attractiveness	0.7686
Purchase intention	0.8694
Dummy knowledge	1.0000
Dummy frequency	1.0000
Dummy high education	1.0000

Discriminant Validity: Heterotrait-Monotrait Ratio of Correlations (HTMT)

Construct	Value proposition	Value delivery	Customer treatment	Interaction space	PFI	Relative attractiveness	Purchase intention	Dummy knowledge	Dummy frequency	Dummy high education
Value proposition										
Value delivery	0.8584									
Customer treatment	0.7472	0.8075								
Interaction space	0.6679	0.8136	0.6443							
PFI	0.3575	0.4038	0.3337	0.3579						
Relative attractiveness	0.2726	0.3097	0.2240	0.3195	0.5506					
Purchase intention	0.3335	0.2796	0.2006	0.2777	0.5171	0.5087				
Dummy knowledge	0.3750	0.3536	0.2679	0.2546	0.1839	0.2979	0.4848			
Dummy frequency	0.3185	0.2640	0.2257	0.2228	0.1580	0.2345	0.4919	0.3349		
Dummy high education	0.0857	0.0805	0.0009	0.0566	0.0393	0.0111	0.2227	0.2336	0.1585	

Loadings

Indicator	Value proposition	Value delivery	Customer treatment	Interaction space	PFI	Relative attractiveness	Purchase intention
Prop_1	0.8312						
Prop_2	0.8940						
Prop_3	0.8763						
Prop_4	0.8957						
Deliv_1		0.8645					
Deliv_2		0.9042					
Deliv_3		0.8879					
Deliv_4		0.8308					
Treat_1			0.9513				
Treat_2			0.9463				
Treat_3			0.9219				
Space_1				0.9078			
Space_2				0.9250			
Space_3				0.9218			
Innov_1					0.7679		
Innov_2					0.8500		
Innov_3					0.8358		
Innov_4					0.8573		
Attract_2						0.8566	
Attract_3						0.8759	
Attract_4						0.8971	
Intent_1							0.9475
Intent_2							0.9361
Intent_3							0.9216
Intent_4							0.9243
DummyknowB							
Dummyfreq							
Eduhigh							

R-Squared

Construct	Coefficient of determination (R^2)	Adjusted R^2
PFI	0.1389	0.1268
Relative attractiveness	0.2201	0.2173
Purchase intention	0.4428	0.4350

Path Coefficients

Independent variable	Dependent variable		
	PFI	Relative attractiveness	Purchase intention
Value proposition	0.0810		
Value delivery	0.1798		
Customer treatment	0.0455		
Interaction space	0.1108		
PFI		0.4691	
Relative attractiveness			0.3273
Dummy knowledge			0.2540
Dummy frequency			0.3058
Dummy high education			-0.1119

Total Effects

Independent variable	Dependent variable		
	PFI	Relative attractiveness	Purchase intention
Value proposition	0.0810	0.0380	0.0124
Value delivery	0.1798	0.0843	0.0276
Customer treatment	0.0455	0.0214	0.0070
Interaction space	0.1108	0.0520	0.0170
PFI		0.4691	0.1535
Relative attractiveness			0.3273
Dummy knowledge			0.2540
Dummy frequency			0.3058
Dummy high education			-0.1119

Indirect Effects

Independent variable	Dependent variable		
	PFI	Relative attractiveness	Purchase intention
Value proposition		0.0380	0.0124
Value delivery		0.0843	0.0276
Customer treatment		0.0214	0.0070
Interaction space		0.0520	0.0170
PFI			0.1535
Relative attractiveness			
Dummy knowledge			
Dummy frequency			
Dummy high education			

Effect Overview

Effect	Beta	Indirect effects	Total effect	Cohen's r^2
Value proposition -> PFI	0.0810		0.0810	0.0028
Value proposition -> Relative attractiveness		0.0380	0.0380	
Value proposition -> Purchase intention		0.0124	0.0124	
Value delivery -> PFI	0.1798		0.1798	0.0096
Value delivery -> Relative attractiveness		0.0843	0.0843	
Value delivery -> Purchase intention		0.0276	0.0276	
Customer treatment -> PFI	0.0455		0.0455	0.0010
Customer treatment -> Relative attractiveness		0.0214	0.0214	
Customer treatment -> Purchase intention		0.0070	0.0070	
Interaction space -> PFI	0.1108		0.1108	0.0064
Interaction space -> Relative attractiveness		0.0520	0.0520	
Interaction space -> Purchase intention		0.0170	0.0170	
PFI -> Relative attractiveness	0.4691		0.4691	0.2822
PFI -> Purchase intention		0.1535	0.1535	
Relative attractiveness -> Purchase intention	0.3273		0.3273	0.1728
Dummy knowledge -> Purchase intention	0.2540		0.2540	0.0935
Dummy frequency -> Purchase intention	0.3058		0.3058	0.1448
Dummy high education -> Purchase intention	-0.1119		-0.1119	0.0209

Inter-Construct Correlations

Construct	Value proposition	Value delivery	Customer treatment	Interaction space	PFI	Relative attractiveness	Purchase intention	Dummy knowledge	Dummy frequency	Dummy high education
Value proposition	1.0000									
Value delivery	0.7712	1.0000								
Customer treatment	0.6833	0.7321	1.0000							
Interaction space	0.6080	0.7360	0.5925	1.0000						
PFI	0.3181	0.3571	0.2981	0.3193	1.0000					
Relative attractiveness	0.2417	0.2708	0.1979	0.2770	0.4691	1.0000				
Purchase intention	0.3096	0.2622	0.1900	0.2588	0.4640	0.4632	1.0000			
Dummy knowledge	0.3542	0.3346	0.2585	0.2429	0.1694	0.2760	0.4729	1.0000		
Dummy frequency	0.3013	0.2488	0.2180	0.2130	0.1461	0.2179	0.4799	0.3349	1.0000	
Dummy high education	-0.0875	-0.0769	-0.0015	0.0556	-0.0341	0.0069	-0.2175	-0.2336	-0.1585	1.0000

Bootstrap

Direct Effects Inference

Effect	Original coefficient	Standard bootstrap results					Percentile bootstrap quantiles			
		Mean value	Standard error	t-value	p-value (2-sided)	p-value (1-sided)	0.5%	2.5%	97.5%	99.5%
Value proposition -> PFI	0.0810	0.0915	0.1014	0.7991	0.4244	0.2122	-0.1430	-0.1032	0.3034	0.3960
Value delivery -> PFI	0.1798	0.1808	0.1141	1.5754	0.1155	0.0577	-0.1235	-0.0439	0.4106	0.4716
Customer treatment -> PFI	0.0455	0.0376	0.0914	0.4978	0.6187	0.3094	-0.1905	-0.1338	0.2141	0.2716
Interaction space -> PFI	0.1108	0.1108	0.0760	1.4571	0.1454	0.0727	-0.0794	-0.0408	0.2601	0.2950
PFI -> Relative attractiveness	0.4691	0.4690	0.0558	8.4099	0.0000	0.0000	0.3121	0.3511	0.5687	0.6059
Relative attractiveness -> Purchase intention	0.3273	0.3305	0.0499	6.5573	0.0000	0.0000	0.1905	0.2354	0.4257	0.4460
Dummy knowledge -> Purchase intention	0.2540	0.2538	0.0524	4.8490	0.0000	0.0000	0.1179	0.1478	0.3494	0.3708
Dummy frequency -> Purchase intention	0.3058	0.3060	0.0501	6.0990	0.0000	0.0000	0.1777	0.2053	0.4034	0.4430
Dummy high education -> Purchase intention	-0.1119	-0.1112	0.0441	-2.5368	0.0113	0.0057	-0.2431	-0.1957	-0.0256	-0.0042

Total Effects Inference

Effect	Original coefficient	Standard bootstrap results					Percentile bootstrap quantiles			
		Mean value	Standard error	t-value	p-value (2-sided)	p-value (1-sided)	0.5%	2.5%	97.5%	99.5%
Value proposition -> PFI	0.0810	0.0915	0.1014	0.7991	0.4244	0.2122	-0.1430	-0.1032	0.3034	0.3960
Value proposition -> Relative attractiveness	0.0380	0.0423	0.0476	0.7984	0.4248	0.2124	-0.0659	-0.0500	0.1435	0.1796
Value proposition -> Purchase intention	0.0124	0.0136	0.0158	0.7898	0.4298	0.2149	-0.0252	-0.0179	0.0463	0.0589
Value delivery -> PFI	0.1798	0.1808	0.1141	1.5754	0.1155	0.0577	-0.1235	-0.0439	0.4106	0.4716
Value delivery -> Relative attractiveness	0.0843	0.0849	0.0547	1.5407	0.1237	0.0619	-0.0565	-0.0198	0.1945	0.2272
Value delivery -> Purchase intention	0.0276	0.0284	0.0196	1.4116	0.1584	0.0792	-0.0216	-0.0061	0.0702	0.0839
Customer treatment -> PFI	0.0455	0.0376	0.0914	0.4978	0.6187	0.3094	-0.1905	-0.1338	0.2141	0.2716
Customer treatment -> Relative attractiveness	0.0214	0.0182	0.0435	0.4911	0.6235	0.3117	-0.0947	-0.0604	0.1063	0.1468
Customer treatment -> Purchase intention	0.0070	0.0064	0.0150	0.4652	0.6419	0.3209	-0.0284	-0.0202	0.0378	0.0563
Interaction space -> PFI	0.1108	0.1108	0.0760	1.4571	0.1454	0.0727	-0.0794	-0.0408	0.2601	0.2950
Interaction space -> Relative attractiveness	0.0520	0.0527	0.0373	1.3944	0.1635	0.0818	-0.0342	-0.0172	0.1285	0.1509
Interaction space -> Purchase intention	0.0170	0.0178	0.0134	1.2692	0.2047	0.1023	-0.0115	-0.0053	0.0476	0.0579
PFI -> Relative attractiveness	0.4691	0.4690	0.0558	8.4099	0.0000	0.0000	0.3121	0.3511	0.5687	0.6059
PFI -> Purchase intention	0.1535	0.1562	0.0357	4.2980	0.0000	0.0000	0.0698	0.0887	0.2294	0.2498
Relative attractiveness -> Purchase intention	0.3273	0.3305	0.0499	6.5573	0.0000	0.0000	0.1905	0.2354	0.4257	0.4460
Dummy knowledge -> Purchase intention	0.2540	0.2538	0.0524	4.8490	0.0000	0.0000	0.1179	0.1478	0.3494	0.3708
Dummy frequency -> Purchase intention	0.3058	0.3060	0.0501	6.0990	0.0000	0.0000	0.1777	0.2053	0.4034	0.4430
Dummy high education -> Purchase intention	-0.1119	-0.1112	0.0441	-2.5368	0.0113	0.0057	-0.2431	-0.1957	-0.0256	-0.0042

Pattern Matrix with all indicators

	Component						
	1	2	3	4	5	6	7
Prop_1	0.875						
Prop_2	0.964						
Prop_3	0.946						
Prop_4	0.900						
Deliv_1	0.509		0.411				
Deliv_2	0.439		0.38				
Deliv_3	0.496						
Deliv_4			0.359		0.323		
Treat_1					0.967		
Treat_2					0.908		
Treat_3					0.828		
Space_1			0.994				
Space_2			0.969				
Space_3			0.859				
Innov_1				0.544			0.383
Innov_2				0.81			
Innov_3				0.908			
Innov_4				0.942			
Attract_1							0.963
Attract_2						0.828	
Attract_3						0.943	
Attract_4						0.801	
Intent_1		0.943					
Intent_2		0.923					
Intent_3		0.910					
Intent_4		0.902					

Extraction Method: Principal Component Analysis.

Rotation Method: Promax with Kaiser Normalization.

Appendix D - Alternative analysis

Path analysis for model without respondents answering 1 (low) knowlegde

Summary of Path Analysis

Direct effects	Beta	<i>t</i>	<i>p</i> -value	Sign.	Cohen f^2
Value proposition PFI	0.0691	0.6667	0.2525	No	0.0023
Value delivery PFI	0.1862	1.4968	0.0674	No	0.0113
Customer treatment PFI	0.0622	0.5899	0.2777	No	0.0018
Interaction space PFI	0.0937	1.2261	0.1102	No	0.0050
PFI Relative attractiveness	0.4204	6.8433	< 0.001	Yes	0.2147
Relative attractiveness Purchase intention	0.4165	7.8295	< 0.001	Yes	0.2755
Control variables					
Dummy Frequency Purchase intention	0.3663	6.8973	< 0.001	Yes	0.2093
Dummy Education Purchase intention	-0.1371	-2.9427	0.0017	Yes	0.0300
Indirect effects					
PFI Purchase intention	0.1751	4.2587	< 0.001	Yes	

Path analysis for model without respondents answering 1 (low) or 2 (moderate) knowledge

Summary of Path Analysis

Direct effects	Beta	<i>t</i>	<i>p</i> -value	Sign.	Cohen f^2
Value proposition PFI	0.0718	0.6728	0.2506	No	0.0027
Value delivery PFI	0.1417	1.0894	0.1381	No	0.0071
Customer treatment PFI	0.0651	0.5683	0.2850	No	0.0019
Interaction space PFI	0.1169	1.2981	0.0973	No	0.0074
PFI Relative attractiveness	0.4849	6.8137	< 0.001	Yes	0.3074
Relative attractiveness Purchase intention	0.4187	5.6977	< 0.001	Yes	0.2671
Control variables					

Dummy Frequency	Purchase intention	0.3648	5.1194	< 0.001	Yes	0.2014
Dummy Education	Purchase intention	-0.1044	-1.7664	0.0388	Yes	0.0167

Indirect effects

PFI	Purchase intention	0.2030	3.5952	< 0.001	Yes	
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Path analysis for model without respondents answering 1 (never) frequency

Summary of Path Analysis

Direct effects		Beta	<i>t</i>	<i>p</i> -value	Sign.	Cohen <i>f</i> ²
Value proposition	PFI	0.0807	0.7511	0.2506	No	0.0032
Value delivery	PFI	0.2366	1.6119	0.1381	No	0.0179
Customer treatment	PFI	0.0092	0.0757	0.2850	No	0.0000
Interaction space	PFI	0.1337	1.4383	0.0973	No	0.0104
PFI	Relative attractiveness	0.4954	8.3671	< 0.001	Yes	0.3253
Relative attractiveness	Purchase intention	0.4290	6.3575	< 0.001	Yes	0.2699
Control variables						
Dummy Knowledge	Purchase intention	0.3053	4.7789	< 0.001	Yes	0.1310
Dummy Education	Purchase intention	-0.1381	-2.6982	0.0388	Yes	0.0283
Indirect effects						
PFI	Purchase intention	0.2125	4.1782	< 0.001	Yes	