



Technology at the table: **An overview of Food Delivery Apps**

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Dissertation written under the supervision of Miguel Rita

Dissertation submitted in partial fulfilment of requirements for the MSc in Management with specialization in Strategy and Entrepreneurship, at the Universidade Católica Portuguesa, 19/12/2018.

Abstract

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The ultimate goal of this study is to provide an overview of food delivery apps. With this service, the chance consumers have to eat a nice restaurant meal at the comfort of their homes is now at a distance of a click. Firstly, this research starts by identifying which attributes of food delivery apps consumers value the most, among online convenience, perceived control, visual design, and order accuracy. Secondly, perceived technology anxiety and need for interaction, lack of customer service and privacy & security concerns were tested as the main barriers preventing people from using the service. And lastly, a model of e-loyalty and repurchase intentions was designed, based on e-loyalty antecedents – e-satisfaction and e-trust. Two methodologies were chosen – in-depth interviews (12 interviewees) and an online survey (202 participants). Results indicated online convenience and order accuracy as the most important attributes for consumers. Further, contrarily to what it would be expected, consumers did not perceive the mentioned barriers as the aspects preventing them from using these apps. Finally, the positive effects of e-trust on e-loyalty and e-satisfaction were verified, as well as the relationship between e-loyalty and repurchase intentions. Yet, e-satisfaction effects on e-loyalty were not relevant. A detailed and critical analysis of the results is provided in the last chapter.

Key words: food delivery apps, attributes, barriers & concerns, e-loyalty, e-satisfaction, e-trust

Resumo

O grande objetivo deste estudo passa por fornecer uma visão geral das aplicações de telemóvel de entrega de comida ao domicílio. Com este serviço, a possibilidade que os consumidores têm de comer uma boa refeição de um restaurante no conforto das suas casas está agora à distância de um clique. Em primeiro lugar, esta pesquisa começa por identificar os atributos destas aplicações que os consumidores mais valorizam, entre a conveniência *online*, as perceções de controlo, o design visual e a precisão do pedido. Em segundo lugar, as barreiras tecnológicas, a necessidade de interação pessoal, a falta de apoio ao consumidor e os riscos adjacentes ao serviço foram testados como barreiras que impedem certas pessoas de usar o serviço. Por último, criou-se um modelo de *e-loyalty* e de intenções de recompra, baseado nos antecedentes de *e-loyalty* – *e-satisfaction* e *e-trust*.

Foram adotadas duas metodologias – entrevistas presenciais (12 entrevistados) e um questionário *online* (202 participantes). Os resultados revelaram que a conveniência *online* e a precisão do pedido são os atributos mais importantes para os consumidores. Além disso, ao contrário do que seria esperado, os consumidores não consideraram as barreiras mencionadas como os aspetos que os impedem de usar estas aplicações. Por último, foram verificados os efeitos positivos de *e-trust* em *e-loyalty* e em *e-satisfaction*, bem como a relação entre *e-loyalty* e a intenção de recompra. Contudo, os efeitos de *e-satisfaction* em *e-loyalty* não foram considerados relevantes. No último capítulo, é apresentada uma análise crítica e detalhada dos resultados.

Acknowledgements

First of all, I would like to thank my advisor Miguel Rita for all the unconditional support and quick responses for all my doubts. Specially, I am grateful for all the insights and optimism he passed me through all our meetings.

Secondly, I would like to thank the people I interviewed for their time and valuable insights to this research. Likewise, I am grateful for all the people who answered the online survey. Their contribution was crucial to this study.

Finally, I am thankful for my parent's effort to enable me to study in the best universities in Portugal and for their support throughout this university process.

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1. Introduction

While living in a dynamic world, sometimes people find it difficult to manage simple tasks like buying food or cooking dinner. Fortunately, consumers can now solve these tasks with a few taps on their mobile phones. Smartphones have become their tool to obtain everything they want at their doorstep because of on-demand services. Indeed, digital technology is reshaping the delivery market (Hirschberg, Rajko, Schumacher, & Wrulich, 2016). The food service industry is no exception. On-demand food delivery apps are disrupting the food delivery concept.

Food delivery apps are giving consumers the chance to order food from a wide array of restaurants, allowing them to compare menus, prices, and reviews from other users in a fast and easy way. Indeed, previous studies have proved that consumers rather use online services because of its speed, precision, and ease of use (Dixon, Kimes, & Verma, 2009; Kimes, 2011b). Besides, consumers keep on asking for more convenient orders and delivery. Convenience is certainly one of the strongest motives for consumers to intensify their relationships with any service platform (Goebel, Moeller, & Pibernik, 2012; Seiders, Voss, Godfrey, & Grewal, 2007). Unsurprisingly, these food delivery services are most popular among millennials, the consumer segment who uses the most online services (“Online On-demand Food Delivery Services Market - Growth Analysis and Forecast| Technavio | Business Wire,” 2017).

Over the years, several researchers studied consumer behavior and preferences in an online context, however, there is a lack of research when it comes to food delivery apps. Therefore, it is essential to understand the underlying motivations that make consumers use them, as well as the features of these apps that they consider to be most important. These attributes can be tangible, like the design of the app, or intangible, such as the service’s convenience and quality. Further, there are several reasons that prevent people from adopting online purchase behavior. When it comes to this service, there is any research to date analyzing those reasons, which is why throughout this research there will be evaluated the main barriers & concerns of the people who do not order food through mobile applications.

Additionally, another crucial element to study in an online context is loyalty (J. Kim, Jin, & Swinney, 2009; C. Park & Kim, 2003; Yang & Peterson, 2004). Hence, the second part of this study will focus on studying e-loyalty in the food delivery apps’ service. In detail, the antecedents of loyalty will be examined, as well as the relationship between loyalty and repurchase intentions.

Overall, this research aims to identify which attributes of these platforms’ consumers value the most, to analyze the critical barriers & concerns of the non-users of food delivery apps and to

study the concept of loyalty in this service. Specifically, the following research questions ought to be answered:

- What is the most important attribute of food delivery apps?
- What are the main barriers & concerns that prevent people from using food delivery apps?
- Which factors are responsible for consumer's loyalty in the food delivery app's market?

This dissertation consists of 6 chapters. The next chapter presents a market description of the service of food delivery apps. Chapter 3 will consist of a review of all the academic literature regarding food delivery, online services, and online transactions, as well as loyalty and repurchase intentions. Afterward, Chapter 4 and 5 will describe the chosen methodologies and its further results. Finally, the last chapter presents the final conclusions and limitations of the current study.

2. On-demand food delivery apps – Market Description

Nowadays, consumers have 2 major types of online platforms (excluding the restaurant's individual websites) available when they choose to order food online. Hence, one must understand the differences between the “aggregators” and the more recent food delivery players – food delivery apps. The aggregators have a more traditional approach, taking solely orders from consumers, while the restaurant takes care of the delivery. This traditional approach has no additional costs to consumers. Contrarily, the new food delivery apps, that will be the focus of this research, take care of the delivery themselves, charging fees for both restaurants and consumers.

Food delivery apps serve as the middleman - connecting people to food (Bakker, 2016) – and allowing consumers to order different meals from their partner restaurants, that previously did not offer delivery themselves. As a consequence, restaurants that now want to start offering delivery can choose to partner with third-party delivery services, expanding the number of restaurants available for customers to choose from.

In 2018, the global Platform-to-Consumer Food Delivery market already amounts for US \$ 17.413 million (Online Food Delivery - Platform-to-Consumer Delivery - worldwide | Statista Market Forecast, 2018). Moreover, the user penetration rate reached 6% worldwide and it is expected to reach 10.3% in 5 years. China has been the leading country in this industry, reaching a market volume of US \$ 12.078 million, followed by the US, UK, and India. Nonetheless, when it comes to user penetration, Hong Kong is leading the race, followed by China, The Netherlands, and Canada.

The major players around the world in the food delivery apps' market are GrubHub, Delivery Hero, Deliveroo, Just Eat, DoorDash and Uber Eats. The competition in this industry was intensified when big names started taking their first moves into the delivery market: Amazon launched Prime Now, a restaurant delivery service, and Macdonald's partnered with Uber Eats. Further, these platforms have different sources of revenue. For instance, DoorDash does not have a fixed fee, depending on the restaurant, the company charges them a revenue-share that varies from 10% to 25%. While Uber Eats charges its restaurant's partners in two different ways: one is a fixed revenue-share of 30% over each order, the second is a marketing fee (non-fixed), which is optional, giving restaurants the opportunity to be placed at the top of their app search results. Overall, not all food delivery apps offer the chance for marketing to their restaurant partners, but most do. Moreover, these apps differ on how they charge consumers for the delivery. Once more, some charge a fixed fee and others a variable fee, dependent on the location of the consumer when compared to the one from the restaurant.

In Portugal, the revenue of the Platform-to-Consumer Food Delivery market reached US \$ 3 million in 2018 and the user penetration rate is 0.8%, a value that is expected to more than double until 2022 (Online Food Delivery - Platform-to-Consumer Delivery - Portugal | Statista Market Forecast, 2018). From the most well-known food delivery apps, only Uber Eats operates in Portugal. Apart from this one, Portugal already counts with 5 more food delivery apps - Glovo, NoMENU, SendEAT, Takeaway.com, and Comer Em Casa.

Uber Eats, NoMENU, Comer Em Casa, and Takeaway.com only focus on food delivery from their partner restaurants, while Glovo goes beyond food, by additionally offering consumers the chance to order from pharmacy to fashion products, as well as anything that can fit the box carried on the driver's motorbike. Likewise, SendEAT also offers consumers the chance of delivery from a Portuguese supermarket (Continente).

Regarding fees to consumers, Uber Eats, SendEAT, and Comer Em Casa charge, respectively, a fixed fee of 2.9€, of 2.95€ and of 3.60€. Contrarily, Glovo, NoMENU, and Takeaway.com charge a variable fee starting on 1.90€, 2.90€, and 2€, respectively. Finally, some apps allow consumers to follow the route the delivery person is taking, providing them with constant updates.

3. Theoretical Framework and Hypothesis Development

This chapter is divided into two groups: on-demand food delivery apps and e-loyalty & repurchase intentions. Firstly, there will be analyzed the major attributes that consumers value the most. Also, the main barriers & concerns the non-users have regarding the service will be studied. Besides, demographic factors will be explored in an online context.

Secondly, this study will evaluate consumer's loyalty and repurchase intentions while looking for loyalty's antecedents. Lastly, hypotheses are developed for each critical variable.

3.1. On-demand Food Delivery Apps

3.1.1. Attributes – Users

When it comes to food delivery app's attributes there are many aspects to consider, given a large number of mobile app attributes which might influence consumer's intention to purchase (Kapoor & Vij, 2018). This research particularly focuses on the visual design of the app, as the only tangible attribute to be studied, and on online convenience, perceived control and order accuracy, as its intangible attributes. While analyzing these four attributes one might conclude which one consumer's value the most and consider most important.

a) Online Convenience

The term convenience has been described as the amount of time and effort consumers recognize saving while performing activities related to shopping (Seiders, Berry, Gresham, Leonard, & Larry, 2000; Berry, Seiders, & Grewal, 2002; Goebel et al., 2012; Seiders et al., 2007). Indeed, convenience is considered one of the major incentives for consumers to embrace online shopping (Beauchamp & Ponder, 2010; Jiang, Yang, & Jun, 2013). Moreover, researchers proved that convenience influences customer satisfaction and behavioral intentions (Colwell, Aung, Kanetkar, & Holden, 2008; Seiders et al., 2007).

“Service convenience” can be described as the consumers' perceptions of time and effort when buying or using a service (Berry et al., 2002; Seiders et al., 2007). Berry et al. (2002) proved that when the time costs related to a specific service increases, consumers' perceptions of service convenience decrease. Those researchers acknowledged 5 dimensions for service convenience that reflect different stages of the activities related to buy or use a service: access, decision, transaction, benefit, and post-benefit convenience. One must realize that the general convenience evaluations consumers make are influenced by their time and effort perceived costs related to each convenience dimension. *Decision convenience* is related with whether to buy the service or to self-perform, thus, involves consumer's perceived effort and time costs

implied when making that decision. Definitely, the decision to “make-or-buy” is more common for services when compared with products. *Access Convenience* is associated with consumer’s perceived effort and time costs upon service delivery (includes the actions to ask for the service and to receive it). *Transaction convenience* has its main focus on all the actions one must take in order to secure his/her right to use that specific service. Usually, the transaction includes an exchange of money. *Benefit convenience* is linked with consumer’s perceived time and effort costs when experiencing the service’s fundamental benefits. Lastly, *Post-benefit convenience* is related to further contact with the service provider after the benefit stage, thus, it can be associated with product reparations, exchange or maintenance.

Regarding retail convenience, Seiders et al (2000) suggested 4 dimensions: *access* (how easy it is to reach a retailer), *search* (how easy it is for consumers to recognize and select what they want to buy), *possession* (how easy it is to obtain the desired product) and *transaction* (how easy it is for consumers to effect transactions). Later, Beauchamp & Ponder (2010) compared retail convenience for both in-store and online shopping and concluded that online shoppers have better perceptions of all the dimensions of convenience.

When it comes to online service convenience, there are some exclusive features related with the quality of the online service, like interactivities, ease of use, information search and security (Jiang et al., 2013; Jun, Yang, & Kim, 2004; Parasuraman, Zeithaml, & Malhotra, 2005; Wolfinbarger & Gilly, 2003; Yang, Cai, Zhou, & Zhou, 2005; Yang & Peterson, 2004). In an attempt to further understand the dimensions of convenience only related to the online world, Jiang et al. (2013) defined 5 different factors: *access* (the availability and ease of access to the online platform), *search* (whether the platform is user-friendly and related to the variety of the search options), *evaluation* (related with how detailed and organized is product information), *transaction* (how easy and flexible are the payment methods) and *possession/post-purchase* (how fast is the delivery). Indeed, they acknowledged that online convenience is a major factor for the success of online businesses. Therefore, the importance to study this concept in the food delivery app’s market.

Nevertheless, Beauchamp & Ponder (2010) concluded on their study that while the dimensions of convenience exist in theory, consumers tend to see convenience as a general concept. Hence, in this study, convenience will be treated as a general construct, considered to be an app attribute of food delivery apps.

Taking into consideration the previous literature, the following hypothesis will be tested:

H1: Online Convenience is the attribute that consumers value the most regarding food delivery apps.

b) Visual Design

One of the most important attributes of a mobile app is visual design (Kapoor & Vij, 2018; Nah, Eschenbrenner, & DeWester, 2011). Consumers use mobile apps through their smartphones which have small screens, thus, they must provide only the necessary data with a simple presentation. The aesthetic, consistency and attractive looks of the mobile app are the main aspects related with visual design, which include its colors, images, fonts, animations, layouts and shapes (Cyr, Head, & Ivanov, 2006; Kapoor & Vij, 2018). While using the platform, visual design affects the consumer experience as well (Wells, Valacich, & Hess, 2011).

In fact, for mobile apps, visual design is even more important when compared to other platforms because consumers, with just a few taps on their smartphones, expect to search, order and pay for their products or services (Cho, Bonn, & Li, 2018; D. J. Kim & Hwang, 2012).

Essentially, Wells et al. (2011) concluded that when the visual design of a platform is attractive, it influences positively the consumer quality perceptions of both product and company. Subsequently, studies proved that when a mobile application appears to have a better design, there is an increase in the level of users' engagement (Cheung, Shen, Lee, & Chan, 2015; Kapoor & Vij, 2018). On the other hand, as expected, consumers are doubtful in using a mobile application that appears to have a worse visual design (El Said, 2015; Kapoor & Vij, 2018).

Finally, Kapoor & Vij (2018) concluded that visual design has a strong influence on consumers' loyalty and purchase decisions relative to a specific brand.

Based on the prior literature review, the following hypothesis will be tested:

H2: Visual design is the attribute that consumers value the most regarding food delivery apps.

c) Perceived Control

Human beings have the necessity to control their own environment, i.e., people have the need to show others their mastery and superiority over the environment (White, 1959). The concept of control can be broken down in 3 different perspectives: *behavioral control* (related with direct responses to the environment), *cognitive control* (related with uncertainty reductions) and *decisional control* (related with having a choice between different outcomes or goals) (Averill, 1973).

When it comes to service encounters, Lovelock & Wirtz (2010) suggested that production and consumption happen at the same time. Hence, one can recognize 3 different parties: first, the consumer who aims to feel satisfied and to attain value for money; second, the employee who wishes to gain remuneration and job fulfilment; and third, the company who desires to satisfy

both consumers and employees while focusing on the company's profits (Bateson, 2000). Either way, Bateson (2000) concludes by stating that the three forces pursue control over the service encounter.

Moreover, perceived control, in general, influences consumers' satisfaction with service experiences (Hui & Bateson, 1991; Hui & Tse, 1996; Noone, Wirtz, & Kimes, 2012). Likewise, in many cases, higher levels of control tend to increase both consumer satisfaction and their intention to either use or recommend a service (Hui & Bateson, 1991; Kimes, 2011b). Nevertheless, one must acknowledge that these higher levels of control might not attract all consumers, especially the ones who seek personal contact (Kimes, 2011b).

In fact, in order to create a successful self-service system, companies should emphasize consumer's perceived control, because consumers will likely use the system without being next to an employee (Kimes, 2011b).

Regarding online food ordering, Kimes (2011) concluded in her study that control is one of the strongest reasons for consumers to embrace online ordering. Besides, Noone et al. (2012) explained that by providing consumers real-time information regarding their meals, that is a way to enhance their perceptions of control. Similarly, when using mobile apps for food ordering and delivery, consumers are able to choose what they want, as well as the time and location to order their meal, experiencing higher levels of perceived control (Noone et al., 2012). Finally, another way to enhance consumers' perceived control is to allow them to choose the payment method (Kimes, 2011b).

Hence, the following hypothesis was derived:

H3: Perceived control is the attribute that consumers value the most regarding food delivery apps.

d) Order accuracy

When it comes to services, delivering quality is a fundamental strategy for companies that aim to differentiate their services from their competitors' offerings while satisfying their customer needs and creating value (Collier & Bienstock, 2006; Ozment & Morash, 1994). In order to deliver service quality and create good relationships with consumers, companies must be aware of their preferences, needs, and wants (Howard & Worboys, 2003).

In an online context, consumers worry about both service delivery and the outcome of the specific service (Katz, 2001). Indeed, consumers want the guarantee that their order will be accurate and that it will be delivered in the stipulated time (Kimes, 2011b).

Moreover, to better understand e-service quality, Wolfinbarger & Gilly (2003) developed a scale known as eTailQ that includes 4 different dimensions: fulfillment/reliability, website design, customer service, and security/privacy. *Fulfillment/reliability* is related with the accuracy of the product information and description on the online platform, to make sure consumers receive exactly what they ordered, and further is also related with whether that product was delivered in the promised schedule. *Website design* concerns all the features that affect consumer's experience with an online platform (navigation, search for information, order processing, and product selection). *Customer Service* is related with the quick response from the company to every customer need, from platform problems that may arise to inquiries. Lastly, *security/privacy* concerns the privacy of the information consumers share with the company and the security of payments by credit card. Moreover, fulfillment/reliability is one of the best predictors of quality (Wolfinbarger & Gilly, 2003) and customer satisfaction (Ding, Hu, & Sheng, 2011).

From the 4 factors mentioned above, fulfillment/reliability is the one that will be analyzed more deeply in the context of food delivery apps, since it concerns the attribute order accuracy. In fact, previous studies have proved that order accuracy is the most important attribute of online ordering (Kimes, 2011b). Therefore, there are several strategies companies can take to emphasize order accuracy, such as: showing the order on the side of the screen to allow the consumer to check what he/she has in the basket, giving consumers the chance to review, modify and approve their order, sending a confirmation email with the list of items ordered and giving delivery time estimates (Kimes, 2011a).

Accordingly, the following hypothesis was derived:

H4: Order accuracy is the attribute that consumers value the most regarding food delivery apps.

3.1.2. Barriers & Concerns – Non-users

When studying consumer behavior and preferences towards a technological platform, one must also look for the main barriers and concerns that make some consumers not to use them. Therefore, this research attempts to understand the perspective of the non-users of food delivery apps – what are the main barriers that prevent them to start using these platforms, as well as, some concerns they might have related to the service.

The major reasons that prevent consumers from ordering food online are related to the perceived need for interaction and perceived technology anxiety (Kimes, 2011a), as well as, to privacy & security concerns and lack of customer service (Ahuja, Gupta, & Raman, 2003).

The perceived need for interaction can be translated as someone's necessity to maintain personal contact with other people upon a service encounter (Curran & Meuter, 2005; Dabholkar, 1992). Indeed, retaining personal contact between consumers and service providers makes it possible for the establishment of interpersonal relationships between the two parties (Curran & Meuter, 2005). However, Curran & Meuter (2005) explained that self-service technologies (like food delivery apps) exclude those interpersonal relationships that many consumers value and who tend to evaluate the quality of services based on those interactions. Thus, it is clear that, for some people, the inexistence of personal contact consists of a barrier to the use of food delivery apps.

Moreover, Parasuraman (2000) concluded that consumers who do not feel comfortable with new technologies might be hesitant to use an online self-service platform because they might be afraid of not being able to deal with the technology correctly. Certainly, Kimes (2011a) completed by affirming that some people are reluctant towards online food ordering because they are afraid of making a mistake without knowing how to correct it or simply because the technology is unfamiliar to them. Therefore, it is possible to conclude that perceived customer technology anxiety is a barrier to the use of food delivery apps.

Privacy & security is known to be the biggest concern consumers have upon online transactions (Ahuja et al., 2003). Wolfinbarger & Gilly (2003) defended that the security of payments by credit card and the privacy of an individual's shared personal details are both characteristics related to privacy & security. Indeed, the fact that most online transactions imply possible losses of one's security and privacy of personal information, is a major barrier for consumer's online purchase adoption (Hui, Teo, & Lee, 2007).

Lastly, Ahuja et al. (2003) enhanced that the lack of customer service also appears to be a concern. In detail, the lack of customer service englobes not only the inability to find help from the company whenever consumers have a problem while ordering or doing a purchase but also problems that might arise after the purchase of the service.

3.1.3. Demographics

Over the years, researchers have been studying demographic variables to better distinguish consumers' adoption of online purchases vs offline purchases, and most of the times they proved that demographics have a substantial impact on the consumer online shopping behavior (Brown, Pope, & Voges, 2003; Donthu & Garcia, 1999; Korgaonkar & Wolin, 1999; Koyuncu & Lien, 2003; Naseri & Elliott, 2011).

Regarding the role of demographics in the adoption of online shopping, Naseri & Elliott (2011) found out that age, gender, education, and income are the demographic factors that are more significant when studying consumer's behavior.

Age is one of the most studied demographic factors when it comes to former literature about consumer behavior in an online context (Chang, Cheung, & Lai, 2005). Several pieces of research proved that, in general, older people are less likely to embrace online shopping. Hence, age tends to have a negative impact on the adoption of online behavior (Donthu & Garcia, 1999; Joines, Scherer, & Scheufele, 2003; Naseri & Elliott, 2011). Roy Dholakia & Uusitalo (2002) concluded by arguing that usually older people are less familiar with technology, as a consequence, older consumers are more anxious about online purchases.

When it comes to gender, several studies proved that, in general, men tend to make more online transactions than women (Brown et al., 2003; Donthu & Garcia, 1999; Koyuncu & Lien, 2003; Naseri & Elliott, 2011). However, it appears that there are quite a few exceptions to this pattern, depending on the product/service category in question. Indeed, it was found that women tend to shop online groceries, clothing and entertainment services more often than men (Naseri & Elliott, 2011). Nevertheless, men are less concerned with the risks associated with the purchase of online goods and services (Bartel Sheehan, 1999; Kolsaker & Payne, 2002).

Moreover, better-educated consumers tend to embrace more online shopping (Koyuncu & Lien, 2003), have a greater frequency of online purchases and spend higher amounts of money online (Burroughs & Sabherwal, 2002). Further, higher education levels can be related to increased skills to manage uncertainty and enhanced self-efficacy, characteristics that improve one's ability to deal with online purchases (Burroughs & Sabherwal, 2002).

Lastly, income is also positively related to online shopping adoption (Donthu & Garcia, 1999; Koyuncu & Lien, 2003). Taking advantage of the New Theory of Consumer Behavior (Michael & Becker, 1973; Pollak & Wachter, 1975), Kinsey (2011) noticed that when the value of time increases, people prefer to choose the transaction option (credit card) that will make them lose the minimum time. Further, Naseri & Elliott (2011) suggested that people who have higher salaries tend to work longer hours, thus, also their lack of time contributes to a higher interest in online shopping. Finally, consumers with higher incomes can choose to "buy" when facing the service decision "make vs buy", ending up having more experience within a larger set of services (Keaveney & Parthasarathy, 2001).

Overall, it is expected during this research that the previous demographic variables behave in the same way in regard to food delivery apps.

3.2. E-loyalty & Repurchase Intentions

In an attempt to define loyalty, Keller (1993) concluded that consumers are considered loyal when they have positive attitudes toward a specific subject, which results in repeated purchase behavior over a specific period of time. Nevertheless, other researchers defend that repeated purchase does not include the emotional side of loyalty, ending up reflecting solely the outcome of the decision process (Berkowitz, 1978). For Shankar, Smith, & Rangaswamy (2003) a consumer is considered to be loyal when he/she shows commitment and a strong connection towards a given company, and also when that same person does not get easily interested by other attractive alternatives.

The need to study loyalty in the online context has been an important factor to measure the success of online businesses. Therefore, Srinivasan, Anderson, & Ponnnavolu (2002) defined e-loyalty as consumer's commitment and positive attitudes towards the online platform that fallouts in the repeated purchase. Consequently, due to strong consumer commitment and decreased costs of acquiring new consumers, e-loyalty results in higher profitability to the online platform (Reichheld, Markey, & Hopton, 2000). Indeed, e-loyal customers benefit from lower operating costs when compared to recently acquired consumers (Van Riel, Liljander, & Jurriëns, 2001).

Most importantly, one must understand how e-loyalty is established. E-satisfaction (R. E. Anderson & Srinivasan, 2003) and e-trust (Reichheld & Scheffer, 2000) are the two attributes considered to be crucial in the development of e-loyalty, thus, responsible for the consumer's repurchase intentions.

Given the popularity of food delivery apps, and the lack of research regarding loyalty for this service, the last part of this research will focus on the effects of e-satisfaction and e-trust on e-loyalty for those services, and the subsequent effects of e-loyalty on repurchase intentions.

Hence, according to the previous literature, the following hypothesis was created:

H5: E-loyalty has a positive effect on repurchase intentions.

3.2.1. E-satisfaction

Oliver (1997) defined satisfaction as the pleasing perceptions of fulfillment consumers experience in each transaction. Likewise, e-satisfaction can be described as a cumulative concept since it consists on the sum of satisfaction on each purchase of goods or services over time (E. W. Anderson, Fornell, & Lehmann, 1994). In an online context, customer satisfaction is highly important for the firm's relationship with its customers (Winer, 2001). Furthermore, Ram & Jung (1991) proved that satisfied consumers are related to increased levels of service

usage. Besides, satisfied consumers tend to have more repurchase intentions as well as recommend the product or service to others (J. Kim et al., 2009; Zeithaml, Berry, & Parasuraman, 1996). As expected, dissatisfied consumers have higher incentives to search for substitute information and tend to switch to other online platforms (J. Kim et al., 2009). However, one should acknowledge that there are external factors that might influence consumer's e-satisfaction, such as the quality of his/her equipment and of the internet. Lastly, although there are several studies proving the influence of e-satisfaction on e-loyalty, no one has yet studied this relationship for food delivery apps, thus, the following hypothesis was derived:

H6: E-satisfaction has a positive effect on e-loyalty.

3.2.2. E-trust

Trust can be expressed as the consumer's confidence in the reliability and quality of a specific service (Garbarino & Johnson, 1999). E-trust is thereby defined as the level of confidence consumers have in an online platform, and in its transactions (Ribbink, Streukens, Van Riel, & Liljander, 2004).

Moreover, Reichheld et al. (2000) suggested that when consumers choose to establish a closer connection with one online platform, trust is the utmost important attribute, not price as some would expect. Additionally, Reichheld & Schefter (2000) defend that when online platforms want to gain their consumer's loyalty, they need to assure they gain their trust first. Indeed, several researchers have proved the positive influence that e-trust has on e-loyalty (C. H. Park & Kim, 2003; Pitta, Franzak, & Fowler, 2006; Reichheld et al., 2000).

Additionally, other studies discovered that e-trust has not only a direct effect on e-loyalty but also an indirect effect through e-satisfaction (Gummerus, Liljander, Pura, & Van Riel, 2004). When purchasing a product or service, the trust evaluations consumers have over a particular transaction have a direct effect on their post-purchase satisfaction (Singh & Sirdeshmukh, 2000). When it comes to online services, consumers acknowledge they face higher risks when compared to offline services, in regard to payments, delivery and their personal information disclosure (J. Kim et al., 2009; Singh & Sirdeshmukh, 2000). Thus, they have a stronger need to opt for the online platforms they trust the most. Hence, one can argue that to have satisfied consumers, trust must be established first.

Accordingly, the following hypotheses are proposed in regard to food delivery apps:

H7: E-trust has a positive effect on e-loyalty.

H8: E-trust has a positive effect on e-satisfaction.

H9: E-trust mediates the effect of e-satisfaction on e-loyalty.

4. Methodology

In this chapter, the research methods and the strategies behind them are presented, as well as details of how they were designed and analyzed.

4.1. Research Method

Researchers can follow two distinct analysis to test their hypothesis: a qualitative and a quantitative analysis. Due to the novelty of the food ordering service through apps, both a qualitative and a quantitative analysis were conducted.

Additionally, to better understand consumer's perspectives in regard to food delivery apps, it is crucial to analyze what are the characteristics of this service consumers dislike or would like to see improvements. Due to the lack of literature regarding the consumers' degree of dissatisfaction with the referred service, a thorough analysis on the market players' consumer comments helped in pointing low variety, quality of the food, packaging, time of delivery, and the way companies handle problems as the characteristics they would appreciate seeing improvements. Hence, the previous aspects will be tested and validated during this research.

4.1.1. Qualitative Analysis

In-depth interviews were the qualitative method chosen. This research technique encompasses conducting one-on-one interviews in order to investigate the respondents' perspectives upon a specific product, service, or simply an idea (Boyce & Neale, 2006). In-depth interviews allow the researcher to obtain very detailed insights into the consumer's behaviors and thoughts, allowing the generation of new ideas and helping in better design the questions for the quantitative analysis (Boyce & Neale, 2006).

Additionally, this analysis allows the interviewees to feel more comfortable, being able to give more personal insights even upon more sensitive subjects (Steber, 2017). Yet, there are some disadvantages: interviews can be time-consuming, which can lead to exhaustive analysis due to big amounts of information and, also, to smaller samples that might not be enough to reach valid conclusions (Boyce & Neale, 2006).

For this study, 12 in-depth interviews were conducted – 6 to users and 6 to non-users of food delivery apps. The research proceeded with the conduction of an online survey.

4.1.2. Quantitative Analysis

The second analysis of this study involved an online survey. In detail, online surveys are able to reach a much wider audience, with extremely low costs in a short period of time, when

compared to a qualitative analysis. Indeed, online surveys have many strengths, such as flexibility, speed, convenience, low administration cost, question diversity, large sample easy to obtain, ease of data entry and analysis, and control of answer order (Evans & Mathur, 2005). Nevertheless, Evans & Mathur (2005) concluded that privacy issues, the fact that online surveys are impersonal, and the possible lack of online experience/expertise from the respondent constitute the main weaknesses of online surveys.

Lastly, in the same way it was defined for the qualitative analysis, the survey was divided into 2 different parts according to the respondent's previous experience with food delivery apps.

4.2. Research Design and Instruments

4.2.1. Qualitative Analysis – In-depth interviews

The 12 interviews were carried out face-to-face and lasted between 15 to 30 minutes. Two distinct scripts were designed – one for users and another for non-users.

On one hand, the script (Appendix 1) for users was divided into 6 distinct parts: demographic data (gender, age, education level, and monthly income), simple questions about the general concept of food delivery apps, monthly usage frequency, attributes (to discover which one consumers value the most), loyalty (including questions about their level of trust and satisfaction) and, finally, points to improve.

On the other hand, the script (Appendix 2) for the non-user's was divided into 5 parts: demographic data (same as the user's script), then the general concept of food delivery apps was introduced and explained, later the interviewees were asked about their main barriers & concerns towards the service, as well as about the aspects they like about the service, and lastly, recommendations were requested.

4.2.2. Quantitative Analysis – Online survey

First of all, the online survey was prepared using the online *Qualtrics* software and it was accessible for one week. The survey was revised by asking 6 people to read it, to make sure the survey was clear and easy to understand. Consequently, it was later modified in terms of layout and wording according to the suggestions.

Secondly, the survey (Appendix 3) followed different routes depending on the respondent's use of food delivery apps. The first part of the survey explained the participants the purpose of this study and informed them about the chance they had to participate in a draw of a card from FNAC of 30€ at the end of the survey. In the second part, yes or no questions were asked to identify the participant's previous experience with food delivery in general. Afterward, an explanation of the service of ordering food through apps was provided, to ensure all participants

understand the referred service. Then, the participants were asked if they had ever used the service. This separated the survey into different parts: one for the respondents who had used and another for the ones who did not.

On one hand, the third part for users involved, firstly, questions about their food order frequency and, secondly, the participants were asked to state their level of agreement with several characteristics related with the food delivery app's attributes: online convenience, visual design, perceived control and order accuracy. This part was finalized by asking them to rank the four attributes in relation to each other, according to their level of importance. Moreover, the fourth part included questions about consumers satisfaction, trust, loyalty, and repurchase intentions. This part was finalized by asking the consumers to attribute 100 points, according to their level of dissatisfaction, upon the quality of the food, the packaging, the way the app handles problems, variety, and time of delivery.

On the other hand, for the non-users, the third part consisted mainly of questions about the barriers & concerns (perceived technology anxiety, perceived need for interaction, privacy & security and lack of customer service) they might have towards the referred service. The last question on this section aimed to test the intention the non-users have to start using this service. The final part of the online survey was the same for both users and non-users and included questions related to demographic factors and the participants' emails were requested to allow them to participate in the draw.

4.2.2.1. Measurement of Variables – Online survey

a) Food delivery app's attributes - Users

For each food delivery app attribute multi-items scales were developed. The Likert scales are widely used when analyzing attitudinal and behavioral elements (Boone & Boone, 2012). Therefore, the five-point Likert scale was chosen to measure those items. In this scale, 1 corresponded to "Strongly disagree" and 5 to "Strongly agree".

In general, the item-scales were based on previous literature related to online food ordering and online transactions and were later adapted for the food delivery service through apps. Firstly, the item-scales for online convenience were based on the presented theoretical framework and on Yeo, Goh, & Rezaei (2017) and Kimes (2011a) studies. Secondly, the constructs for the visual design were created accordingly to Kapoor & Vij (2018) measurement of items. Thirdly, perceived control measurement of items was also based on insights from the Kimes (2011a) study of electronic food ordering along with the other previous literature. Lastly, order accuracy measurements were based on the Wolfinbarger & Gilly (2003) study of service quality in an online context.

b) E-Loyalty and Repurchase Intentions - Users

For this part, the five-point Likert scale was once more chosen. The items to measure e-satisfaction were established based on J. Kim et al. (2009) and on Fornell, Johnson, Anderson, Cha, & Bryant (1996) and were adapted to the service of food delivery. Moreover, for e-satisfaction the scale ranged from 1 to 5, where 1 corresponded to “Not satisfied at all” and 5 to “Completely satisfied”. For e-trust, the constructs were taken and adapted from the research of Garbarino & Johnson (1999).

To measure e-loyalty, the study of Srinivasan et al. (2002) about e-loyalty in an online context was chosen. Finally, repurchase intentions were measured by a single item based on both studies of Cho et al. (2018) and Yeo et al. (2017), aiming to find out if consumers intend to use food delivery apps in the short run. It was used a five-point scale, where 1 was “Would definitely not order” and 5 was “Would definitely order”.

c) Barriers & Concerns – Non-users

For the main barriers & concerns, the five-point Likert scale was preferred once again. The items for perceived technology anxiety and perceived need for interaction were both based and adapted from the study of Kimes (2011a) regarding electronic food ordering. The items for privacy & security were based on the previous theoretical framework along with the study of Wolfinbarger & Gilly (2003). Lastly, the lack of social interaction was adapted from the research of Ahuja et al. (2003) about consumer purchasing behavior in an online context.

4.3. Data Collection – Research Sample

4.3.1. Qualitative Analysis – In-depth interviews

For the in-depth interviews, 12 Portuguese people were selected according to purposive sampling, i.e., a non-probability sampling method which implies that researchers choose their samples according to their judgments and it is often used when dealing with very small samples (Saunders, Lewis, & Thornhill, 2009). Further, as it was previously mentioned, there were chosen 6 users and 6 non-users of food delivery apps. Additionally, according to Kolsaker & Payne (2002) division of age range (21-30; 31 – 40; 41 – 50; 51 - 60), the interviewees were also chosen according to their age (to make sure the sample included at least 2 people of each age group – Table 1). Lastly, from the 12 interviewees, 7 were female and 5 were male.

Table 1 - *Age group of the interviewees*

| Nº of people | Age Group | Nº of Users | Nº of Non-users |
|--------------|-----------|-------------|-----------------|
| 4 | 21 - 30 | 3 | 1 |
| 3 | 31 - 40 | 1 | 2 |
| 3 | 41- 50 | 2 | 1 |
| 2 | 51 - 60 | 0 | 2 |

4.3.2. Quantitative Analysis – Online survey

The survey was written in Portuguese and it was designed to target only Portuguese individuals, both users, and non-users of food delivery apps. Most participants were recruited on social media, through Facebook posts and private messages on WhatsApp. And a few respondents were recruited through private emails. Further, the hypotheses derived from the previous theoretical framework were tested on a sample of 202 people, where 127 were users and 75 were non-users.

4.4. Data Analysis

4.4.1. Qualitative Analysis – In-depth interviews

All 12 in-depth interviews were audio-recorded and later transcribed, i.e., replicated in a written file (Saunders et al., 2009). Moreover, the interviews were held in Portuguese, meaning that after they were transcribed, they were carefully translated into English.

4.4.2. Quantitative Analysis – Online survey

The collected data was analyzed through the statistical software – IBM SPSS (Statistical Package for the Social Sciences) 24.

Initially, the sample was divided between users and non-users of food delivery apps, in the same way it was done for the in-depth interviews.

Later, the statistical analysis involved using descriptive and inferential statistics. The level of significance to reject the null hypothesis was set at $(\alpha) \leq .05$. Moreover, the Cronbach's alpha method was applied to prove internal consistency (J. Kim et al., 2009) of the measurement items used for the attributes, for the e-loyalty factors, and for the barriers & concerns. In detail, its values were evaluated based on George & Mallery (2003) rules of thumb: values lower than 5 are considered unacceptable, higher than 5 are poor, higher than 6 are questionable, higher than 7 are acceptable, higher than 8 are good, and finally higher than 9 are excellent.

Moreover, the Chi-square test of independence, the Anova Repeated Measures, and the Student t-test for independent samples were used. The homogeneity of variances was analyzed with the

Levene test. Additionally, when the normality assumption of the Student T-test for independent samples was not satisfied, it was alternatively used the Mann-Whitney test. When the Chi-square assumption that there should be no more than 20% of the cells with expected frequencies less than 5 was not satisfied, the Chi-square test was used by Monte Carlo simulation.

A Confirmatory Factor analysis (CFA) was conducted with the IBM SPSS Software AMOS 24 for the attributes and e-loyalty to verify if there is both internal and external consistency of the measurement items of those variables (Cho et al., 2018). Likewise, the previous software was used for the structural equation model (SEM) for repurchase intentions. The scales to measure the fit indexes of the results from the CFA were based on the study of Hu & Bentler (1999). These researchers defend that the values for the χ^2/df (Chi-square/degrees of freedom) below 2 are considered very good and lower than 5 are acceptable. The CFI (Comparative fit index) and GFI (Goodness fit index) should be higher than 9. Finally, for the RMSEA (Root mean square error of approximation) the fit is considered good for values lower than 0.05, moderate for lower than 0.1 and poor for values higher than 0.1.

5. Results

5.1. Qualitative Analysis – In-depth interviews

The results of the in-depth interviews are presented in two distinct parts: one for users and another for non-users. In the end, it is presented a comparative analysis between both groups.

5.1.1. Users

Table 2 presents the results of the users' demographic variables.

Table 2 - *Users' Demographic Variables*

| Users | Age | Gender | Education | Monthly Income (€) |
|----------|-----|--------|-------------------|--------------------|
| Inês | 23 | F | Bachelor's degree | 0-500 |
| Clara | 23 | F | Bachelor's degree | 501-1000 |
| Pilar | 25 | F | Bachelor's degree | 0-500 |
| Henrique | 33 | M | Master's degree | 3501-4000 |
| Vasco | 44 | M | Bachelor's degree | >4001 |
| Rodrigo | 47 | M | Master's degree | >4001 |

All 6 interviewees stated that before having the ability to order food through apps, they used to call directly the restaurants or order food from their website. Yet, when it became possible to order their meals through apps, all of them prefer to use this service.

The monthly usage frequency of food delivery apps varied among the 6 participants (Table 3). On average, the interviewees order food 5.5 times a month.

Table 3 – *Monthly Usage Frequency*

| Users | Monthly Usage Frequency |
|-------------|-------------------------|
| Inês | 3 |
| Clara | 2 |
| Pilar | 1 |
| Henrique | 6 |
| Vasco | 15 |
| Rodrigo | 6 |
| Mean | 5.5 |

Further, the most mentioned reasons of why the interviewees use the referred service were the ability to stay at home and to save time, while being able to order food from a very diverse set

of options. Indeed, consumers value the fact that using these apps is practical, easy and fast, being perfect for time-constraint circumstances.

Upon the major attributes that are important for consumers, the one they tend to value the most is its convenience, in which they expressed, by considering this service simple, intuitive and fast, where they can easily select what they want while being able to stay at the comfort of their homes. Likewise, they value the fact that they can have access to their previous orders and choose exactly the same meal they did in the past, saving time. Moreover, the interviewees mentioned they valued the variety these apps offer when it comes to the number of restaurants and menus available for them to choose from, which is also related to online convenience. Secondly, the majority of the interviewees value the fact that they can have real-time feedback – they know when their order is being prepared and they can follow the path of the delivery person, including time estimations of the delivery (aspects related with consumer's perceptions of control over the process). At this point, none of them made references in regard to the app's visual design and order accuracy.

Furthermore, the interviewees are satisfied with the service and the purchase experience through mobile apps. However, when asked about their level of satisfaction with the app itself their level of satisfaction changes depending on the app. Overall, all of them have tried Uber Eats, and they confirmed their satisfaction with the app and their willingness to both keep on using it and recommend it to others. The ones who tried Glovo have had bad experiences which made them not use the app again.

Additionally, all users trust these apps when it comes to the quality of the service and do not have any problems in providing their personal details to the companies. Currently, all users mentioned using the same app when they want to order food, yet, they mentioned the possibility to try a different app if the monetary incentives are better or if more variety is offered. The fact that the interviewees already have an account in Uber, because of the cars service, it is a big incentive for them to choose this app.

Lastly, some consumers mentioned being afraid of the quality of the food, and sometimes they do not like the packaging. Other concerns were related to the time estimations and the variety offered – the demand for healthier options and better estimations of time was noticed. Besides, interviewees mentioned times they were unhappy with the way the company handled problems with their orders.

Half of the participants suggested that the apps should start making promotions, like after a number of orders they would not have to pay the delivery fee.

Overall, as expected by previous literature, online convenience appears to be the attribute consumer's value the most. Additionally, it seems that e-satisfaction and e-trust positively

affect consumer's loyalty towards this service. Nevertheless, the participants are not as loyal to the app, but they intend to re-use it. Either way, these relationships will be deeper analyzed in the qualitative analysis. Also, the interviews made it possible to validate the factors previously identified as the dislikes of users – the quality of the food, packaging, time of delivery, low variety and the way the company handles some problems.

5.1.2. Non-users

First of all, Table 4 presents the sample characteristics of the non-users.

Table 4 - Non-users' Demographic Variables

| Non-users | Age | Gender | Education | Monthly Income (€) |
|-----------|-----|--------|-------------------|--------------------|
| Mariana | 26 | F | Bachelor's degree | 1001-1500 |
| Pedro | 32 | M | Master's degree | 1001-1500 |
| Francisca | 37 | F | Bachelor's degree | 1001-1500 |
| Carla | 41 | F | Bachelor's degree | 2001-2500 |
| Luís | 52 | M | Bachelor's degree | 3501-4000 |
| Ana | 56 | F | Master's degree | 2001-2500 |

Secondly, it appears that some interviewees have previous experience with food ordering, mentioning that they called directly the restaurant. From those, only one consumer had tried to order it online through the restaurant's website. Half of the interviewees were familiar with the concept of food delivery apps. Either way, a careful explanation of the concept was given to all participants, which included showing one app and the process of ordering food.

Further, half of the participants mentioned technology as their main barrier to start using the referred service, they do not consider themselves very technological people. Besides, the inability to solve unexpected situations related to their meals in real-time consists of a barrier, as well as they feel they cannot reach an employee. Furthermore, they are concerned with the payment methods (the fact that you only use credit cards). Additionally, they commented that the features/attributes that would make them start using these apps were the fact that it is a practical, fast and easy to use service, and they believe the apps' design is attractive.

Finally, the main things consumers do not like about the service are related to the inherent decline of the quality of the food, when compared to the one they get at the physical restaurant, and the lack of social interaction. All of them are skeptical in providing their personal details to the app, yet, they said that might not be a barrier at the end of the day. Some argued that if the service provided special promotions that would be an incentive to start using it. Curiously,

half of the interviewees mentioned the fact that using these apps appears to be so easy and practical, that they are afraid of wasting too much money if they get used to it, so they rather not make it a habit.

Overall, it seems that technology anxiety, privacy & security concerns, perceived need for interaction and the lack of customer service are indeed barriers preventing them to start using these apps, yet, one must validate these results with the ones from the survey.

5.1.3. Users vs. Non-users – Demographics

When looking at the age of all the interviewees, it is possible to recognize that age tends to have a negative impact upon the use of food delivery apps, which is aligned with the previous literature review. For the variables gender, education, and income is not possible to take significant conclusions, since there are no differences between users and non-users. Therefore, the results of the survey analysis will be crucial to validate the theoretical framework.

5.2. Quantitative Analysis – Online survey

The online survey (Appendix 3) followed different directions depending on the respondent's previous experience with food delivery apps. Therefore, the same approach chosen to analyze the results of the in-depth interviews separately was used.

5.2.1. General Sample Characteristics

First of all, 263 people started the survey but only 215 finished it, which translates into an 82% response rate, leading one to conclude that the survey length was adequate. Secondly, after cleaning the data set and deleting outliers the final sample was composed of 202 people. The results for the sample characteristics are presented in Appendix 4. In regard to age, 77% of the respondents belong to the 21-30 range, while the other ranges were uniformly distributed, with the exception of the range – (>60) – which only had one respondent. Moreover, the sample is composed mostly of women (72.3%) rather than men (27.7%). When it comes to education, most respondents (93.6%) had a higher level of education (Bachelor's degree – 54%; Master's Degree – 39.1%; Ph.D. – 0.5%), in contrast with 6,4% that finished their education in high school. Besides, the majority (65.8%) of the participants has a monthly income smaller or equal to 1000€ (0-500€: 39.1%; 501-1000€: 26.7%), when compared to the other ranges.

On average, the typical respondent of this survey is a woman aged between 21-30, with a bachelor's degree and a monthly income between 501-1000€.

Furthermore, 88.1% of the participants have past experiences in food delivery, i.e., they have ordered food in the past (Appendix 5). Likewise, almost all respondents (82.2%) are familiar with the service of ordering food through mobile apps (Appendix 6).

5.2.2. Users

From the total number (202) of participants, 127 were users (62.9%) of food delivery apps (Appendix 7). Therefore, for the following analysis, the sample was composed of 127 people.

(a) Food delivery in general

The sample of 127 users includes both people who have ordered food through apps and continue to order, as well as people who have ordered but do not order any more (Appendix 7). Throughout the analysis, the two groups are analyzed together as users.

Participants order food through apps, on average, 3 times a month (Table 5).

Table 5 - *Descriptive Statistics for frequency of monthly ordering (N=127)*

| Monthly orders | Values |
|--------------------|--------|
| Minimum | 1 |
| Maximum | 12 |
| Mean | 3.05 |
| Standard Deviation | 2.58 |

(b) Attributes

To validate the reliability of the constructs of the four attributes of food delivery apps, the Cronbach's alpha was analyzed (Table 6) and the results were interpreted according to the values presented in the last Chapter. Online convenience has the lowest Cronbach alpha, indicating a questionable reliability yet, it is very close to 7, which is considered acceptable. In contrast, visual design presents a Cronbach alpha above 8, which is considered good. And finally, both perceived control and order accuracy present a Cronbach alpha above 7, values that are perceived as acceptable.

Even with satisfactory values of the Cronbach's Alphas of the items used to measure the attributes, one should notice that it does not prove that the scale is unidimensional (Gliem & Gliem, 2003). Therefore, the results were further analyzed by conducting a Confirmatory Factor Analysis. Almost all the standardized factor loadings are above 0.5 (Appendix 8), which according to Hair, Black, Babin, & Anderson (2010), are considered good, indicating their convergence on the latent construct. Besides, Table 6 presents the values for the Construct

Reliability (CR) and for the Average Variance Extracted (AVE), which values should be higher than 7 and 5, respectively, in agreement with Hair et al. (2010). Although not all the values for the AVE are higher than 5, the values of the CR are all higher than 7, indicating a good convergent validity. Furthermore, Table 6 also presents the values of the Maximum Shared Variance (MSV), which should be lower than the AVE values to ensure discriminant validity (Hu & Bentler, 1999). Hair et al. (2010) describe discriminant validity as the difference between constructs, i.e., the uniqueness of each construct is related to high discriminant validity. In fact, AVE values are higher than the ones of the MSV, which ensures discriminant validity. Overall, the results show an acceptable quality of adjustment ($\chi^2/df=1.354$; CFI= 0.941; GFI=0.895; RMSEA=0.053), according to the rules presented in the last chapter.

Table 6 - Cronbach's Alpha & Confirmatory Factor Analysis

| Attributes | Nº of items | Cronbach's Alfa | CR | AVE | MSV |
|--------------------|-------------|-----------------|-------|-------|-------|
| Online Convenience | 5 | .691 | 0.735 | 0.369 | 0.115 |
| Visual Design | 4 | .810 | 0.816 | 0.532 | 0.239 |
| Perceived Control | 3 | .703 | 0.725 | 0.471 | 0.091 |
| Order Accuracy | 3 | .711 | 0.732 | 0.481 | 0.239 |

In general, the majority (Appendix 9) of respondents expressed their agreement with the items related with each attribute, and only a few exceptions were detected. The results of the means for each attribute are presented in Appendix 10.

When it comes to online convenience, respondents do not find it that easy to solve unexpected problems that might arise with their order (mean of 2.99). Likewise, it is evident some indifference related to the variety offered by the apps in terms of restaurants (mean of 3.72). Nevertheless, in general, participants perceived the service as convenient (mean of 3.9).

Respondents find the visual design of food delivery apps as generally attractive and consistent in aesthetic and informational terms (mean of 3.91).

Regarding perceptions of control, participants are indifferent when it comes to perceived level of control while ordering food without the presence of an employee (mean of 3.5). However, the majority believes they are able to order what they want, when they want, and where they want, as well as, being able to have real-time information. Therefore, they tend to feel they are in control while using this service (mean of 3.86).

Order accuracy is the most challenging attribute (mean of 3.56). Respondents do not perceive the time of delivery as accurate as they wish (mean of 3.26), and they do not always receive

what they order. Yet, they tend to perceive the information on the app as accurate (mean of 3.89).

Finally, respondents were asked to rank the attributes according to their level of preference or relevance/importance they give to them. The results of the ranking are presented in Appendix 11. In this case, a lower average means that a higher importance was given to the attribute. Therefore, by looking at the means, one can recognize that online convenience (mean of 1.69) is the attribute that participants value the most. Order accuracy (mean of 1.90) is the second attribute they consider more important, followed by perceived control (mean of 2.91) and visual design (mean of 3.5). In point f), the hypothesis for the attributes are further discussed.

(c) E-loyalty and Repurchase Intentions

First of all, it was analyzed the consistency of the measurement of e-satisfaction, e-trust, and e-loyalty. The values for the Cronbach's alpha (Table 7) are considered good for both e-satisfaction and e-loyalty, and acceptable for e-trust.

Secondly, the results from the confirmatory factor analysis are presented in Appendix 13. Once more, the majority of the standardized factor loadings are above 0.5, indicating a good convergence on the latent construct. Indeed, the values of the AVE and CR (Table 7) are almost all above the standard rule ($CR > .7$; $AVE > .5$), enhancing convergence validity. Yet, not all values of the MSV are lower than the AVE, implying some discriminant validity problems.

Overall, the results of the fit indexes indicate a questionable quality of adjustment ($\chi^2/df=3.116$; CFI=.845; GFI=.842; RMSEA=.130).

Table 7 - Cronbach's Alpha & Confirmatory Factor Analysis

| Variables | N° of items | Cronbach's Alfa | CR | AVE | MSV |
|----------------|-------------|-----------------|------|-------|-------|
| E-trust | 3 | .851 | 0.76 | 0.398 | 0.537 |
| E-satisfaction | 5 | .714 | 0.86 | 0.667 | 0.537 |
| E-loyalty | 4 | .795 | 0.84 | 0.568 | 0.198 |

Furthermore, the majority of the respondents is satisfied with the food delivery app they use, and they trust it, yet, they are not as loyal to the app as expected but they intend to re-use it in the short run (Appendix 14). The results of the means for e-satisfaction, e-trust, e-loyalty, and repurchase intentions are presented in Appendix 15.

Participants expressed their satisfaction with the app in general (mean of 4.10), with the service provided (mean of 4.09) and with the whole purchasing/ordering experience (mean of 4.11). When it comes to their level of trust, respondents believe the app they use to be reliable (mean

of 4.20), they trust on what the company says about its service (mean of 3.99), and they rely on it with their personal information (mean of 3.81). Nevertheless, participants do not feel the same in regard to the promises made by the app in terms of time of delivery and quality of the service (mean of 3.66), as well as, they are not confident in relying on the app with their credit card details (mean of 3.65).

In general, participants are not considered very loyal to the app they use (mean of 3.59). They would recommend the app to others (mean of 4.2), however, if they have the chance to try/use a different one they might do it (mean of 3.10). Respondents do not consider they have a favorite app (mean of 3.53) or a first choice (mean of 3.62).

Definitively, the majority of participants (73%) intend to re-use the food delivery app in the short run (mean of 3.91), proving that there are concrete repurchasing intentions.

Finally, a structural equation model (SEM) was created to test the relationships between repurchase intentions with e-loyalty, and its antecedents (e-satisfaction and e-trust), and to validate the hypothesis derived from the previous theoretical framework (Appendix 16). The results ($\chi^2/df=2.353$; CFI=.883; GFI=.853; RMSEA=.108) indicate a questionable fit. Also, the presented model only explains 20% of the variance of repurchase intentions. In point f) a deeper analysis of the results is provided.

(d) User's Dislikes

The results of the degree of dissatisfaction with the quality of the food, packaging, the way the company handles unexpected problems, low variety, and time of delivery are presented in Appendix 19. The factor with the highest average is low variety, in contrast with packaging, which has the lowest average. Therefore, one can argue that users would like to be offered with a wider range of choices of restaurants.

Nevertheless, it is crucial to realize that the participants were asked to distribute 100 points over the 5 factors, i.e. when 0 was attributed to one of the options it means they are not dissatisfied with that feature, which happened at least once for all the five features. Indeed, the goal was to identify which characteristics users are most dissatisfied with.

(e) App's in Portugal

The apps chosen by the participants while fulfilling the online survey are presented in Table 8. Due to the extremely low frequencies presented, the apps Comer Em Casa, noMENU, and Takeaway.com were not considered for the following comparative analysis. Therefore, only Glovo and Uber Eats were taken into consideration.

Table 8 - Frequency of the apps

| Apps | Frequency (%) |
|---------------|---------------|
| Comer Em Casa | 0.80 |
| Glovo | 22.90 |
| noMENU | 1.65 |
| Takeaway.com | 1.65 |
| Uber Eats | 72.90 |

The differences in the relationship between the user's dislikes and Uber Eats or Glovo are not significant (Appendix 20). Even for the variable packaging where the means have a bigger difference, that difference is not statistically significant ($p = .17$).

Furthermore, the same comparative analysis was done for the e-loyalty factors (Appendix 21). While evaluating the app in regard to their satisfaction, respondents who chose Uber Eats (mean of 4.15) appear to be a little more satisfied with the app, when compared to the ones who use Glovo (mean of 4.00). However, that difference is not significant ($p = .215$). Likewise, participants appear to be more loyal to Uber Eats (mean of 3.65) than Glovo (mean of 3.56), but the difference is not statistically significant ($p = .469$). Contrarily, respondents trust the app Glovo slightly more (mean of 3.97) than in Uber Eats (mean of 3.85). Nonetheless, the difference is not significant ($p = .415$).

Overall, there are not statistically significant differences between Uber Eats and Glovo.

(f) Hypothesis Testing

As presented above, the results of the ranking of the attributes indicate that online convenience is the attribute that participants value the most (it has the lowest mean – 1.69), which is aligned with the theoretical framework.

The differences in the ranking of the attributes were analyzed by conducting an ANOVA Repeated Measures (Appendix 12). Its results concluded that almost all the differences between the attributes are statistically significant ($F(2.799;352.715) = 97.187; p = .001$), with only the exception of the difference between online convenience and order accuracy ($p = .835$). Consequently, the hypothesis *H2 (visual design is the attribute that consumers value the most)* and *H3 (perceived control is the attribute that consumers value the most)* are both rejected, since they are considered to be the least important attributes when compared with online convenience and order accuracy. Given the fact that the difference between online convenience and order accuracy is not statistically significant, the hypothesis *H1 (online convenience is the attribute that consumers value the most)* is partially supported. Likewise, although order

accuracy does not have the lowest mean, H4 (order accuracy is the attribute consumers value the most) is partially supported.

Further, the results of the structural model of repurchase intentions (Appendix 16) verifies whether the hypothesis related to e-loyalty should be accepted or rejected and are presented in Appendix 17. Firstly, the relationship between loyalty and repurchase intentions is positive. Indeed, the standardized regression coefficient is positive, moderate and it is statistically significant ($r = .45; p = .001$), thus, supporting *H5 (E-loyalty has a positive effect on repurchase intentions)*. Secondly, the expected positive impact of e-satisfaction on e-loyalty does not occur. The standardized regression coefficient is positive, yet, it is very weak and not statistically significant ($r = .172; p = .237$). Hence, against previous literature, *H6 (E-satisfaction has a positive effect on e-loyalty)* is rejected. Further, e-trust influences positively both e-loyalty and e-satisfaction, being both the standardized coefficients positive, moderate and statistically significant ($r = .396; p = .01$ | $r = .699; p = .001$). Therefore, both *H7 (E-trust has a positive effect on e-loyalty)* and *H8 (E-trust has a positive effect on e-satisfaction)* are supported.

Lastly, to verify the mediation effect of e-satisfaction over the relationship between e-trust and e-loyalty, it was conducted the Sobel Test (Preacher & Leonardelli, 2010). The results (Appendix 18) indicate that the indirect effect of e-trust on e-loyalty is not statistically significant ($p = .429$). Hence, *H9 (E-satisfaction mediates the effect of e-trust on e-loyalty)* is rejected.

5.2.3. Non-users

The sample of non-users of food delivery apps is composed of 75 people, 37.1% of the total sample (Appendix 7).

(a) Food delivery in general

While the non-user's do not have experience with food delivery through mobile apps, 68% (Appendix 22) of them have past experiences with food delivery. Moreover, half of them (52%) are familiar with the concept of ordering food through apps, even without experiencing it (Appendix 23).

(b) Barriers & Concerns

First of all, the Cronbach's Alpha (Appendix 24) were calculated for the main the barriers & concerns. The construct of the items for perceived technology anxiety (.851) was considered good, showing high reliability. Then, the consistency of the items for perceived need for interaction (.726) is acceptable. For both privacy & security (.612) and lack of customer service

(.657), the Cronbach' alpha values indicate moderate reliability and are considered questionable according to George & Mallery (2003).

Second of all, participants do not perceive the mentioned four characteristics as barriers preventing them from using food delivery apps (Appendix 25 and 26). Indeed, they tend to disagree with the statements related to those barriers. In detail, perceived technology anxiety is not considered a barrier for the non-users of food delivery apps (mean of 2.11). Likewise, privacy & security concerns (mean of 2.76) are not the reason why non-users are not using food delivery apps. Moreover, participants seem indifferent in regard to perceived need to interaction (mean of 3.04) and the lack of customer service' concerns (mean of 3.36).

Overall, contrarily to what would be expected by previous literature, perceived technology anxiety, perceived need for interaction, privacy & security and lack of customer service are not perceived as barriers preventing people from start using the referred service. In the last chapter, a critical discussion of the results of both qualitative and quantitative analysis is presented in regard to the main barriers & concerns.

(c) Willingness to order

The results for the willingness to order are present in Appendix 27. Only 12% of the non-users mentioned they would not order. Around 28% expressed they would probably order. Nevertheless, the majority is undecided (60%), indicating that they could order but are not sure about it.

5.2.4. Users vs. Non-users - Demographics

Chi-square tests were used to do the comparative analysis between users and non-users in regard to the demographic variables.

Firstly, younger consumers appear to have more experience with food delivery apps (Appendix 28). Indeed, the majority of the participants until the age of 30 order food through mobile applications. On the contrary, the majority of the older participants is composed by non-users. Moreover, the difference between users and non-users regarding age is statistically significant ($p = .001$).

Secondly, when it comes to gender (Appendix 29), the results of the comparative analysis between users and non-users indicate that 75% (percentage within gender) of men order food through food delivery apps, while only 58,2% women use the service. This difference is statistically significant ($p = .034$) and it implies that men have a higher tendency to use the referred service.

Thirdly, in regard to education (Appendix 30), it is evident that as the education level increases the percentage of non-users decreases. Hence, one could argue that higher education levels influence positively the experience with food delivery apps ($p = .004$).

Lastly, the results related to income (Appendix 31) are not significant ($p = .400$). Apparently, an increase in income does not imply a higher experience with food delivery apps.

Overall, according to previous literature, it would be expected that younger consumers, with higher education levels and higher incomes, would have a higher experience with food delivery apps. Indeed, the results confirmed that users of these apps tend to be younger people with higher education levels. Nevertheless, the expected differences between users and non-users related to income do not occur. Indeed, receiving a higher salary does not imply a higher tendency to use the referred service, which is against the theoretical framework. Finally, men have more experience with food delivery apps than women, which so far was not studied or proved for the food delivery apps' service. In fact, according to prior literature, gender is the only demographic variable that does not follow a specific tendency and tends to alternate between product or service categories. Hence, the latest results support the conclusion that men have a higher tendency to use food delivery apps.

6. Discussion of Results

In this chapter, several conclusions and recommendations are specified. Indeed, by combining the previous theoretical framework with the analyzed results, this research provides food delivery apps' companies with essential information regarding their customers.

Moreover, the limitations of this study, as well as suggestions for future research are presented at the end of the chapter.

6.1. Conclusions

Nowadays, it is easier to find people who have ordered food than the opposite. Consumers do it in the most varied ways - either by calling the restaurant, ordering from the restaurant's website or by using a food delivery app. While focusing on food delivery apps, results suggest that consumers are familiar with the concept, regardless of being or not users of the service. Hence, this study leads to the conclusion that this concept is quite consolidated among consumers. Indeed, more than half of consumers have used a food delivery app. These people order food from apps, on average, 3 times a month. Yet, the order frequency varies a lot among consumers.

Both qualitative and quantitative analysis lead to the conclusion that online convenience is the attribute that consumers value the most. Nevertheless, the results pointed out that the differences between that attribute and order accuracy are insignificant. Therefore, this study suggests that consumers value online convenience in the same way they value order accuracy, as the most important attributes of food delivery apps, which is aligned with Kimes (2011b) study about online food ordering. Either way, consumers value the visual design of the apps and experience some level of control while using them, yet, they do not consider these attributes as important as the other two.

Regarding loyalty and repurchase intentions several recommendations ought to be made. In general, consumers are satisfied with the app they use and believe it to be reliable, yet, they apparently do not rely as much on the app's promises in terms of time of delivery and quality of the service. Moreover, consumers are not very loyal to one food delivery app in specific, as they consider changing if another with more variety or with better monetary incentives appears on the market. Still, they would definitely recommend the app to other people and they intend to re-order food in the short run.

Additionally, this research's findings supported the previously tested positive effects of e-loyalty on repurchase intentions (Shankar et al., 2003), of e-trust on e-loyalty (Reichheld & Schefter, 2000) and on e-satisfaction (J. Kim et al., 2009). Although it was hypothesized that

e-satisfaction would have a positive effect on e-loyalty in regard to food delivery apps, the results were not statistically significant. Likewise, according to past literature, e-satisfaction would mediate the effect of e-trust on e-loyalty which, according to this research, does not happen in the food delivery app's market.

In order to achieve more loyal consumers, companies could create a loyalty program for its users, such as having some promotion in regard to the delivery fee after a few orders, as it was suggested during the qualitative analysis.

Furthermore, this study provides valuable insights in regard to the app's characteristics with which consumers are somehow dissatisfied. According to this research, consumers think that food delivery apps should start offering more variety in terms of restaurants. Further, some consumers are unhappy with the time of delivery, believing that the promised time given by the app does not match reality. Besides, companies should work on how to improve the way they handle unexpected problems with consumer's orders. Curiously, consumers appear to be less dissatisfied with the quality of the food and the packaging, features that concern the restaurants and not the apps. Therefore, food delivery apps' companies should focus on increasing the number of restaurants on their platforms and improve customer service.

Against past literature, the results from the quantitative analysis indicate that perceived technology anxiety, perceived need for interaction, privacy & security concerns, and the lack of customer service are not considered barriers preventing people from start using the referred service. These results might be dubious since the distribution of the online survey was quite skewed, with the majority of the respondents being in the age range of 21-30. As a matter of fact, as mentioned in the theoretical framework, older people are less familiar with technology, feeling more anxious about online purchases (Roy Dholakia & Uusitalo, 2002). Hence, it is questionable that the results related to the main barriers & concerns might not be representing the reality, once the majority of the respondents of the survey were quite young. Nevertheless, when comparing these results with the ones from the qualitative analysis, the discrepancies are evident. The interviewees mentioned these 4 barriers as factors that are somehow preventing them from using these apps, and the interesting fact is that these people were older (belonging to age ranges above 21-30). Besides, one of the reasons revealed by the interviewees was that they were afraid of spending too much money if they get used to ordering food from these apps on a regular basis since the service is very easy to use. Besides, they also mentioned that the inherent decline of the quality of the food when compared to the one they get at the restaurant is also something that prevents them from ordering. Thus, these facts should be considered as barriers to be tested in future studies. Also, the previous literature was based in studies conducted in the US, hence, the presented differences might also be cultural, which would mean

that the Portuguese people have other reasons for not using food delivery apps. Either way, companies should come up with a plan for the non-users, starting by clearly identifying the reasons why younger people choose to not use their apps, which might be related to money constraints and the quality of the food.

Moreover, the comparative analysis between Uber Eats and Glovo did not find any significant discrepancies when it comes to the user's dislikes, neither for e-satisfaction, e-trust, or e-loyalty. Nonetheless, the percentage of consumers using Uber Eats app is by far bigger than any other app. Possibly, the fact that some consumers already have an Uber account because of the cars service, might explain consumer's preference for that app, as pointed out by some consumers during the in-depth interviews.

Undoubtedly, the majority of food delivery app's consumers are young and have a high education level, as it was expected by previous literature. However, prior research would lead one to conclude that consumers with higher incomes would have more experience with food delivery apps, which is something that does not match reality as the results were not significant. Curiously, this study's findings imply that men are the biggest users of food delivery apps, which is something that had not been proved yet.

Overall, the research questions were answered, and this study's results are certainly contributing to further knowledge about the food delivery app's market. Online convenience and order accuracy are both considered the most important attributes of food delivery apps. The relationships between e-satisfaction and e-trust with e-loyalty were analyzed, as well as the effect of loyalty on repurchase intentions. Lastly, regarding the main barriers & concerns, the results are somehow inconclusive, therefore, future research should focus on understanding better these characteristics. Still, one should acknowledge that the sampling characteristics might have impacted the results in an unfortunate manner.

6.2. Limitations and Future Research

One limitation of this study lies in the lack of academic literature related to food delivery apps in general. Consequently, this research was based on online shopping, online services and online food ordering literature.

The sample of the in-depth interviews was rather small (12). Although for the online survey the sample was significant (202), the fact that the results were analyzed depending on the consumer's past experience with food delivery apps (users and non-users), it diminished the number of respondents. Besides, the majority of the participants of the online survey belonged to the age range 21-30, which made the results biased, especially in regard to the main barriers & concerns.

Moreover, both analyses were conducted only with Portuguese people, making this research not sufficiently diversified. Yet, the market for food delivery apps in Portugal is recent and new players are still entering the market, therefore, this research's results may be generalized exclusively for countries in the same situation.

Additionally, this study focused solely on understanding the consumer's perspectives upon food delivery apps. In the future, it would be interesting to study the restaurant's side of this market, since their role is at most important for its success. Indeed, restaurant owners defend that offering delivery is no longer seen as an option, but as a necessity (Berta, 2016). Likewise, even Michelin star's restaurants started offering delivery through one of these apps (Hirschberg et al., 2016), which demonstrates that delivery is certainly seen as a requirement and makes it an appealing subject for future research.

Appendices

Appendix 1: Interview script for Users

| Section | Questions |
|--|--|
| 1. Demographics | Age |
| | Gender |
| | Education |
| | Income (€): (0 – 500) (501 - 1000) (1001 - 1500) (1501 - 2000) (2001 - 2500) (2501 - 3000) (3001 - 3500) (3501 - 4000) (> 4001) |
| | 1. Have you ever ordered food? |
| | 2. Did you order it online or did you call directly the restaurant? |
| | <i>Now let's focus on the times that you ordered it online:</i> |
| | 3. How did you do it? |
| 2. Concept of food delivery apps | <i>Now let's focus on the times you ordered through food delivery apps:</i> |
| | 4. How many times a month would you say you use food delivery apps? |
| | 5. Why do you use them? |
| | 6. What are the aspects/attributes that you value most of the food delivery app that you use? |
| | 7. Are you satisfied with the service and the purchase experience? |
| 3. Usage Frequency | 8. Are you satisfied with the app in general? |
| | 9. Would you recommend the app you use to other people? |
| | 10. Do you trust the food delivery app in regard to the quality of the service? |
| | 11. Do you rely on the food delivery app with your personal information? |
| | 12. Do you always use the same food delivery app? Why? |
| | 13. The food delivery app you choose is always your first choice? |
| | 14. Would you consider switching the app you use to another? Why? |
| | 15. What do you dislike about this service? |
| 4. Attributes | 16. What do you believe it would attract more people to start using food delivery apps? |
| | 17. Do you have any further suggestions to improve this service? |
| | |
| 5. Loyalty | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| 6. Points to improve | |
| | |
| | |

Appendix 2: Interview script for Non-users

| Section | Questions |
|---|---|
| 1. Demographics | Age |
| | Gender |
| | Education |
| | Income (€): (0 – 500) (501 - 1000) (1001 - 1500) (1501 - 2000) (2001 - 2500) (2501 - 3000) (3001 - 3500) (3501 - 4000) (> 4001) |
| | 1. Have you ever ordered food? |
| | 2. Have you ever ordered it online? (if yes) How? |
| | 3. Are you familiar with the concept of food delivery apps? |
| | <i>Note: If consumers are not familiar with the concept, it was given an explanation of the concept and of how a food delivery app works – showing one of the apps so that they will understand better.</i> |
| 3. Barriers & Concerns | 4. What are the main barriers preventing you to start using these apps? |
| | 5. Do you have any concerns regarding this service? |
| 4. Attributes | 6. What would be the main reasons/attributes that would make you start using these apps? |
| 5. Future Steps & Improvements | 7. What do you like the most about this service? |
| | 8. What do you dislike about this service? |
| | 9. Would be able to trust the app with your personal information and details? |
| | 10. Are there any changes you would make to the service in order for you to start using it? |
| | 11. Do you have any further suggestions to improve this service? |

Appendix 3: Online Survey

Q1: Introduction

Hello,

I am a master student at Católica's University, and I am currently writing my master's thesis, which is related to the service of food delivery through mobile applications (apps). My main goal is to identify the attributes that consumers value the most regarding food deliver apps. Likewise, I intend to classify the degree of satisfaction and trust consumers have upon this service.

Your answers are very important to my study. They are completely confidential and will only be used to accomplish the purpose of this thesis. The survey will take around 6 minutes to complete.

If you complete the survey until the end, you have the chance to participate in a draw of a 30€ card from FNAC!

If you have any doubt while fulfilling the survey, or if you are curious about this study, please do not hesitate to contact me (catarinashjr@gmail.com).

Thank you very much,

Catarina Jardim Ribeiro

Q2 Have you ever ordered food?

- ☐ Yes (1)
- ☐ No (2)

Q3 Are you familiar with the concept of ordering food through mobile applications (apps)?

- ☐ Yes (1)
- ☐ No (2)

Q4: NOTE – For the following questions, please consider the service of ordering food through apps in general, instead of focusing on one app specifically.

The service of food delivery through apps can be explained in the following way:

- The apps of food delivery incorporate a wide number of restaurants in the platform (this number tends to increase).

- It implies downloading an app, associating a payment method (usually a credit card) and your address – both credit card and address can be easily changed, if necessary.
- You need access to the internet to use the app.
- When you open the app, you have the chance to choose the restaurant from where you want to order your meal, as well as, drinks, desserts, etc.
- When ordering, you have the chance to add a special description if it is relevant for your order.
- After you order, the app gives you an estimate for the time of the delivery.
- Some apps let you know when your order is being processed and the subsequent steps until the order arrives to your location.

Q5: Have you ever ordered food through apps?

- ☐ Yes, and I keep on ordering. (1)
- ☐ Yes, but I do not order anymore. (2)
- ☐ No. (3)

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q6: On average, how many times a month would you say you order food through apps?

(Please indicate the number)

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q7: Given the food delivery service through apps in general, please indicate your level of agreement with the following statements related to the degree of online convenience of this service:

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|--|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| I believe I am saving time and effort when ordering food through apps. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ordering food through apps is fast, easy and practical. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| These apps have a lot of variety when it comes to the number of restaurants. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I find it easy to solve any kind of unexpected situations with my order. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In general, I consider that this service is convenient and that it satisfies my needs. (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q8: Given the food delivery service through apps in general, please indicate your level of agreement with the following statements related to the visual design of the apps:

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|--|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| The app has attractive colors and attractive type of letter. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The design of these apps is visually attractive. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| These apps are consistent in the aesthetic point of view of the design. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| These apps are consistent in the informational point of view of the design. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q9: Given the food delivery service through apps in general, please indicate your level of agreement with the following statements related to the degree of your perceived control of this service:

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|--|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| I feel I can order what I want, when I want, and wherever I want. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel in control since I do not have the physical presence of any employee. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have access to information at any moment – when my order is being processed, when it is prepared and when it is on its way to my location. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q10: Given the food delivery service through apps in general, please indicate your level of agreement with the following statements related to the order accuracy of this service:

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| The information on these apps is correct, i.e., it matches reality. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I always received what I ordered. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The delivery was done in the promised time. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q11: Given the referred online convenience, visual design, perceived control, and order accuracy, please rank these 4 attributes according to your preferences or importance to you: (just drag and drop)

| |
|------------------------|
| Online Convenience (1) |
| Visual Design (2) |
| Perceived Control (3) |
| Order Accuracy (4) |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q12: NOTE – For the following questions, please consider the last food delivery app you used. Please, indicate the category that better describes your level of satisfaction related to the statements below.

(1 = Not Satisfied at all | 5 = Completely Satisfied)

| | 1 (1) | 2 (2) | 3 (3) | 4 (4) | 5 (5) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| The service, and the way they handle my orders. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The app in general. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The purchasing experience through the app. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q13: NOTE – For the following questions, please consider the last food delivery app you used. Please, indicate the category that better describes your level of trust related to the statements below.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|--|--------------------------|-----------------------|-----------------------------------|-----------------------|-----------------------|
| I trust on what the app says about its service. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The app is reliable. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I trust the app's promises (time of delivery, quality of the service). (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I rely on the app with my personal information. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I rely on the app with my credit card details. (5) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q14: NOTE – For the following questions, please consider the last food delivery app you used. Please, indicate your level of agreement with the statements below.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| When I want to order food, this app is always my first choice. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| This app is the best to order food, therefore, it is my favorite. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| While this app exists, and the quality of its service remains the same, I will not choose another app to order food from. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I would recommend this app to my friends and family. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q15: NOTE – For the following question, please consider the last food delivery app you used. Please, indicate your level of agreement with the statement below.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| I intend to order food through this app in the short run. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q16: Please, distribute 100 point through the following characteristics according to your level of dissatisfaction (dislikes) regarding the food delivery app you recently used.

(higher score = higher dissatisfaction)

(you are allowed to give 0 points to more than one category in case you are not unhappy with those characteristics, or 100 to just one if it is the only one with which you are dissatisfied)

Quality of the food: _____ (1)

Packaging: _____ (2)

Handling Problems (wrong orders, etc.): _____ (3)

Low variety: _____ (4)

Time of delivery: _____ (5)

Total: _____

Display This Question:

If 5. Have you ever ordered food through apps? = Yes, and I keep on ordering.

Or 5. Have you ever ordered food through apps? = Yes, but I do not order anymore.

Q17: Please indicate the app you were thinking while answering the last questions:

Display This Question:

If 5. Have you ever ordered food through apps? = No.

Q18. Please, indicate you level of agreement with the following statements related to your perceived technology anxiety, that might prevent you from start using food delivery apps.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| I hesitate in ordering food through apps because I am afraid I will do a mistake while ordering process. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Since I change my order after it is sent, I feel apprehensive in using this service. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have been avoiding ordering food through apps because I am not familiar with the concept and with those apps. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel confused with some terms apparently more technological. (4) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = No.

Q19: Please, indicate you level of agreement with the following statements related to your perceived need for interaction, that might prevent you from start using food delivery apps.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|--|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| Personal interaction with a restaurant employee makes the ordering process more enjoyable to me. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Having the attention of a restaurant's employee is important to me. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It bothers me to use an app when I can speak directly with an employee of the restaurant. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = No.

Q20: Please, indicate you level of agreement with the following statements related to privacy & security issues, that might prevent you from start using food delivery apps.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| I would feel safe doing the transaction with my credit card if I started using these apps. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel that there are many dangers related to this service, when it comes to the quality of the service. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel that there are many dangers related to this service, when it comes to the people responsible for the delivery. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = No.

Q21: Please, indicate you level of agreement with the following statements related to customer service, that might prevent you from start using food delivery apps.

| | Strongly Disagree (1) | Disagree (2) | Neither agree nor disagree (3) | Agree (4) | Strongly Agree (5) |
|---|-----------------------------|-----------------------|--------------------------------------|-----------------------|--------------------------|
| I feel that I cannot speak with anybody if a problem comes up when I am ordering food. (1) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I feel that, is my order is wrong or if something is not as I asked, I cannot speak with anybody and solve quickly the problem. (2) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Display This Question:

If 5. Have you ever ordered food through apps? = No.

Q22: Please, indicate which statement better suits your willingness to use the service:

“My willingness to order to order food through apps is...”

- ☐ Would definitely not order (1)
- ☐ Would probably not order (2)
- ☐ I might order (3)
- ☐ Would probably order (4)
- ☐ Would definitely order (5)

Q23: Almost there... Please indicate your age:

- ☐ < 21 (1)
- ☐ 21 - 30 (2)
- ☐ 31 - 40 (3)
- ☐ 41 - 50 (4)
- ☐ 51 - 60 (5)
- ☐ > 60 (6)

Q24: Please indicate your gender:

- ☐ Female (1)
- ☐ Male (2)

Q25: Please indicate your education level:

- ☐ High school (1)
- ☐ Bachelor's degree (2)
- ☐ Master's degree (3)
- ☐ PhD (4)

Q26 Please indicate your monthly income:

- ☐ 0 – 500€ (1)
- ☐ 501 – 1000€ (2)
- ☐ 1001 – 1500€ (3)
- ☐ 1501 – 2000€ (4)
- ☐ 2001 - 2500 € (10)
- ☐ 2501 – 3000€ (5)
- ☐ 3001 – 3500€ (6)
- ☐ 3501 – 4000€ (7)
- ☐ > 4001€ (8)

Q27: You have successfully completed the survey! Thank you very much. If you want to be considered to the draw of the 30€ card from FNAC, please your email address:

NOTE: your email won't be used for any other purpose rather this study. In case you are the winner of the draw, you will be contacted by email)

Appendix 4: Sample Characteristics (N=202)

| Demographic Variables | Values | Frequency | Percentage |
|-----------------------|-------------------|-----------|------------|
| Age | < 21 | 12 | 5.9 |
| | 21 - 30 | 156 | 77.2 |
| | 31 - 40 | 13 | 6.4 |
| | 41 - 50 | 8 | 4.0 |
| | 51 - 60 | 12 | 5.9 |
| | > 60 | 1 | 0.5 |
| Gender | Female | 146 | 72.3 |
| | Male | 56 | 27.7 |
| Education | High School | 13 | 6.4 |
| | Bachelor's Degree | 109 | 54.0 |
| | Master's Degree | 79 | 39.1 |
| | PhD | 1 | 0.5 |
| Income (€) | 0 -500 | 79 | 39.1 |
| | 501 - 1000 | 54 | 26.7 |
| | 1001 - 1500 | 24 | 11.9 |
| | 1501 - 2000 | 20 | 9.9 |
| | 2001 - 2500 | 10 | 5.0 |
| | 2501 - 3000 | 4 | 2.0 |
| | 3001 - 3500 | 2 | 1.0 |
| | 3501 - 4000 | 2 | 1.0 |
| | > 4000 | 7 | 3.5 |

Appendix 5: Past experience in food delivery in general

| Experience on food delivery | Percentage |
|-----------------------------|------------|
| Yes. | 88,10% |
| No. | 11,90% |
| Total | 100% |

Appendix 6: Familiarity with the concept of ordering food through apps

| Familiarity with the concept | Percentage |
|------------------------------|------------|
| Yes. | 82,20% |
| No. | 17,80% |
| Total | 100% |

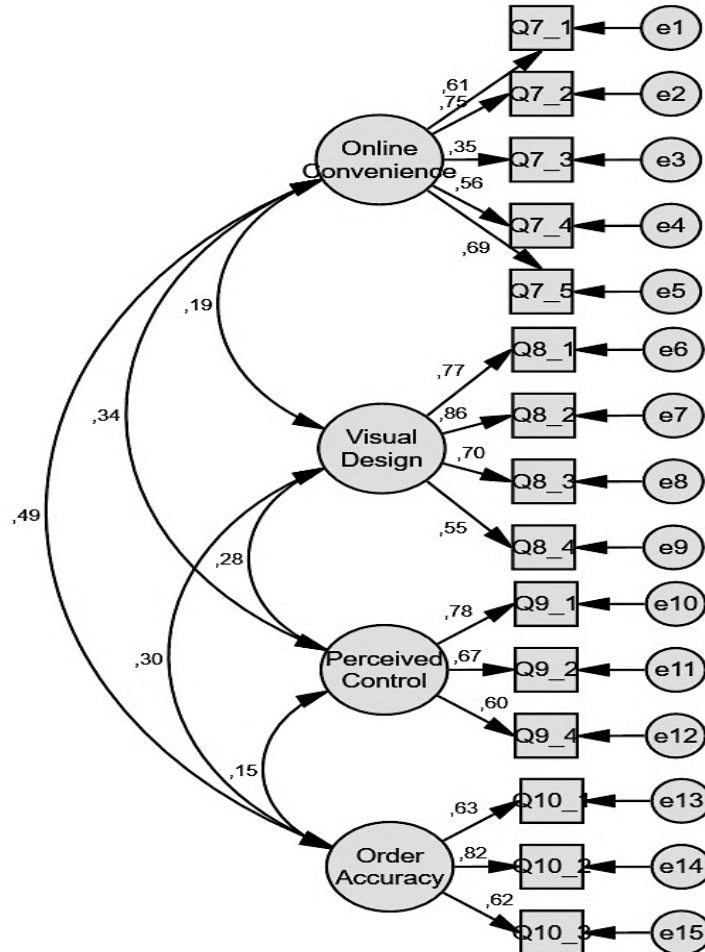
Appendix 7: Experience on food delivery through apps

| Experience on food delivery through apps | Frequency |
|--|-----------|
| Yes, and I keep on order. | 119 |
| Yes, but I do not order anymore. | 8 |

| | |
|-------|-----|
| No. | 75 |
| Total | 202 |

Appendix 8: Confirmatory Factor Analysis - Attributes

$\chi^2(84)=113,764$; $p=.017$; $\chi^2_{df}=1,354$
 $CFI=.941$; $PCFI=.753$; $GFI=.895$; $PGFI=.627$
 $RMSEA=.053$; $P(rmsea \leq 0.05)=.403$



Appendix 9: Attributes' Frequencies

| Online Convenience | 1 | 2 | 3 | 4 | 5 |
|--|-------|--------|--------|--------|--------|
| I believe I am saving time and effort when ordering food through apps. | 0,00% | 2,40% | 7,90% | 50,40% | 39,40% |
| Ordering food through apps is fast, easy and practical. | 0,00% | 2,40% | 3,10% | 52,00% | 42,50% |
| These apps have a lot of variety when it comes to the number of restaurants. | 0,00% | 12,60% | 20,50% | 48,80% | 18,10% |
| I find it easy to solve any kind of unexpected situations with my order. | 5,50% | 27,60% | 36,20% | 23,60% | 7,10% |
| In general, I consider that this service is convenient and that it satisfies my needs. | 0,00% | 1,60% | 7,10% | 63,80% | 27,60% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Visual Design | 1 | 2 | 3 | 4 | 5 |
|---|-------|-------|--------|--------|--------|
| The app has attractive colors and attractive type of letter. | 0,00% | 5,50% | 18,90% | 60,60% | 15,00% |
| The design of these apps is visually attractive. | 2,40% | 3,10% | 11,80% | 63,80% | 18,90% |
| These apps are consistent in the aesthetic point of view of the design. | 0,00% | 3,90% | 12,60% | 66,90% | 16,50% |
| These apps are consistent in the informational point of view of the design. | 0,00% | 6,30% | 11,80% | 70,90% | 11,00% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Perceived Control | 1 | 2 | 3 | 4 | 5 |
|--|-------|--------|--------|--------|--------|
| I feel I can order what I want, when I want, and wherever I want. | 0,00% | 2,40% | 8,70% | 63,00% | 26,00% |
| I feel in control since I do not have the physical presence of any employee. | 0,00% | 18,90% | 26,00% | 41,70% | 13,40% |
| I have access to information at any moment – when my order is being processed, when it is prepared and when it is on its way to my location. | 0,80% | 3,90% | 13,40% | 63,00% | 18,90% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Order Accuracy | 1 | 2 | 3 | 4 | 5 |
|---|-------|--------|--------|--------|--------|
| The information on these apps is correct, i.e., it matches reality. | 0,00% | 5,50% | 14,20% | 66,10% | 14,20% |
| I always received what I ordered. | 3,10% | 17,30% | 17,30% | 46,50% | 15,70% |
| The delivery was done in the promised time. | 2,40% | 26,80% | 25,20% | 33,90% | 11,80% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

Appendix 10: Attributes' Means

| Attributes | Mean |
|--------------------|------|
| Online Convenience | 3,90 |
| Visual Design | 3,91 |
| Perceived Control | 3,86 |
| Order Accuracy | 3,56 |

Appendix 11: Ranking of the Attributes – Descriptive Statistics

| Attributes | Minimum | Maximum | Mean | Standard Deviation |
|--------------------|---------|---------|------|--------------------|
| Online Convenience | 1 | 4 | 1,69 | 0,86 |
| Visual Design | 1 | 4 | 3,50 | 0,68 |
| Perceived Control | 1 | 4 | 2,91 | 0,90 |
| Order Accuracy | 1 | 4 | 1,90 | 0,88 |

Note: Lower mean = Higher importance

Appendix 12: Anova Repeated Measures

Mauchly's Test of Sphericity ^a

| Within Subjects Effect | Mauchly's W | Approx. Chi-Square | df | Sig. | Epsilon b | | |
|------------------------|-------------|--------------------|----|------|----------------------|-------------|-------------|
| | | | | | Greenhouse - Geisser | Huynh-Feldt | Lower-bound |
| factor1 | 0,835 | 22,546 | 5 | 0 | 0,911 | 0,933 | 0,333 |

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept

Within Subjects Design: factor1

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

| Source | | Type III Sum of Sq. | df | Mean Sq. | F | Sig | Part. Eta Sq. | Nonc. Par. | O P (a) |
|----------------|--------------------|---------------------|---------|----------|--------|-----|---------------|------------|---------|
| Fact.1 | Sphericity Assumed | 276,512 | 3 | 92,171 | 97,187 | 0 | 0,435 | 291,562 | 1 |
| | Greenhouse-Geisser | 276,512 | 2,733 | 101,18 | 97,187 | 0 | 0,435 | 265,593 | 1 |
| | Huynh-Feldt | 276,512 | 2,799 | 98,778 | 97,187 | 0 | 0,435 | 272,059 | 1 |
| | Lower-bound | 276,512 | 1 | 276,51 | 97,187 | 0 | 0,435 | 97,187 | 1 |
| Error (fact.1) | Sphericity Assumed | 358,488 | 378 | 0,948 | | | | | |
| | Greenhouse-Geisser | 358,488 | 344,332 | 1,041 | | | | | |
| | Huynh-Feldt | 358,488 | 352,715 | 1,016 | | | | | |
| | Lower-bound | 358,488 | 126 | 2,845 | | | | | |

a. Computed using alpha = .05

Pairwise Comparisons

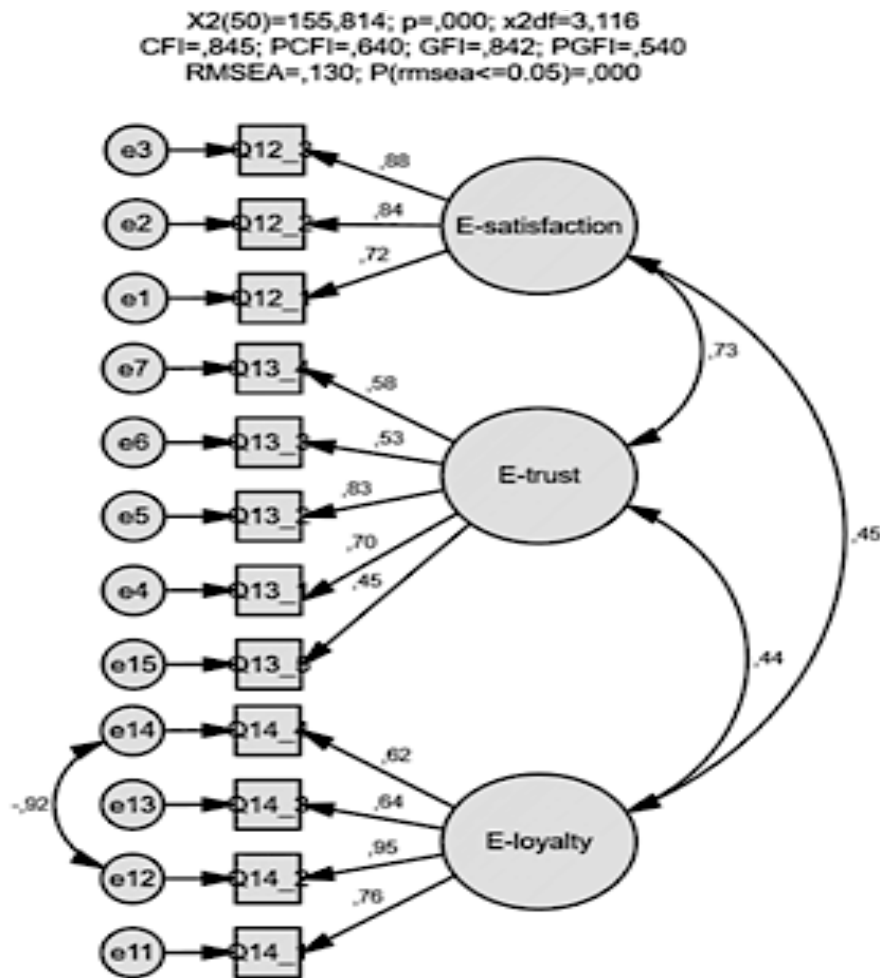
| (I) factor1 | (J) factor1 | Mean Difference (I-J) | Std. Error | Sig. b | 95% Confidence Interval for Difference b | |
|-------------|-------------|-----------------------|------------|--------|--|-------------|
| | | | | | Lower Bound | Upper Bound |
| 1 | 2 | -1,803* | 0,102 | 0 | -2,076 | -1,53 |
| | 3 | -1,220* | 0,13 | 0 | -1,569 | -0,872 |
| | 4 | -0,205 | 0,138 | 0,835 | -0,573 | 0,164 |
| 2 | 1 | 1,803* | 0,102 | 0 | 1,53 | 2,076 |
| | 3 | ,583* | 0,123 | 0 | 0,254 | 0,912 |
| | 4 | 1,598* | 0,109 | 0 | 1,306 | 1,891 |
| 3 | 1 | 1,220* | 0,13 | 0 | 0,872 | 1,569 |
| | 2 | -,583* | 0,123 | 0 | -0,912 | -0,254 |
| | 4 | 1,016* | 0,128 | 0 | 0,671 | 1,36 |
| 4 | 1 | 0,205 | 0,138 | 0,835 | -0,164 | 0,573 |
| | 2 | -1,598* | 0,109 | 0 | -1,891 | -1,306 |
| | 3 | -1,016* | 0,128 | 0 | -1,36 | -0,671 |

Based on estimated marginal means

* The mean difference is significant at the ,05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Appendix 13: Confirmatory Factor Analysis – E-loyalty



Appendix 14: E-loyalty's Frequencies

| E-satisfaction | 1 | 2 | 3 | 4 | 5 |
|---|-------|-------|--------|--------|--------|
| The service, and the way they handle my orders. | 0,00% | 2,40% | 15,00% | 53,50% | 29,10% |
| The app in general. | 0,00% | 0,80% | 14,20% | 59,10% | 26,00% |
| The purchasing experience through the app. | 0,80% | 0,80% | 15,00% | 53,50% | 29,90% |

Note: 1 – Not Satisfied at all | 5 – Completely Satisfied

| E-trust | 1 | 2 | 3 | 4 | 5 |
|--|-------|--------|--------|--------|--------|
| I trust on what the app says about its service. | 0,00% | 2,40% | 10,20% | 73,20% | 14,20% |
| The app is reliable. | 0,00% | 0,00% | 6,30% | 67,70% | 26,00% |
| I trust the app's promises (time of delivery, quality of the service). | 0,80% | 10,20% | 22,00% | 55,90% | 11,00% |
| I rely on the app with my personal information. | 0,00% | 4,70% | 26,00% | 52,80% | 16,50% |

| | | | | | |
|--|-------|--------|--------|--------|--------|
| I rely on the app with my credit card details. | 1,60% | 11,80% | 20,50% | 52,00% | 14,20% |
|--|-------|--------|--------|--------|--------|

Note: 1 – Strongly Disagree | 5 – Strongly agree

| E-loyalty | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| When I want to order food, this app is always my first choice. | 1,60% | 15,70% | 18,10% | 48,00% | 16,50% |
| This app is the best to order food, therefore, it is my favorite. | 0,00% | 15,00% | 31,50% | 39,40% | 14,20% |
| While this app exists, and the quality of its service remains the same, I will not choose another app to order food from. | 5,50% | 31,50% | 22,00% | 29,10% | 11,80% |
| I would recommend this app to my friends and family. | 0,00% | 0,80% | 8,70% | 68,50% | 22,00% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Repurchase Intentions | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| I intend to order food through this app in the short run. | 0,00% | 3,90% | 22,80% | 51,20% | 22,00% |

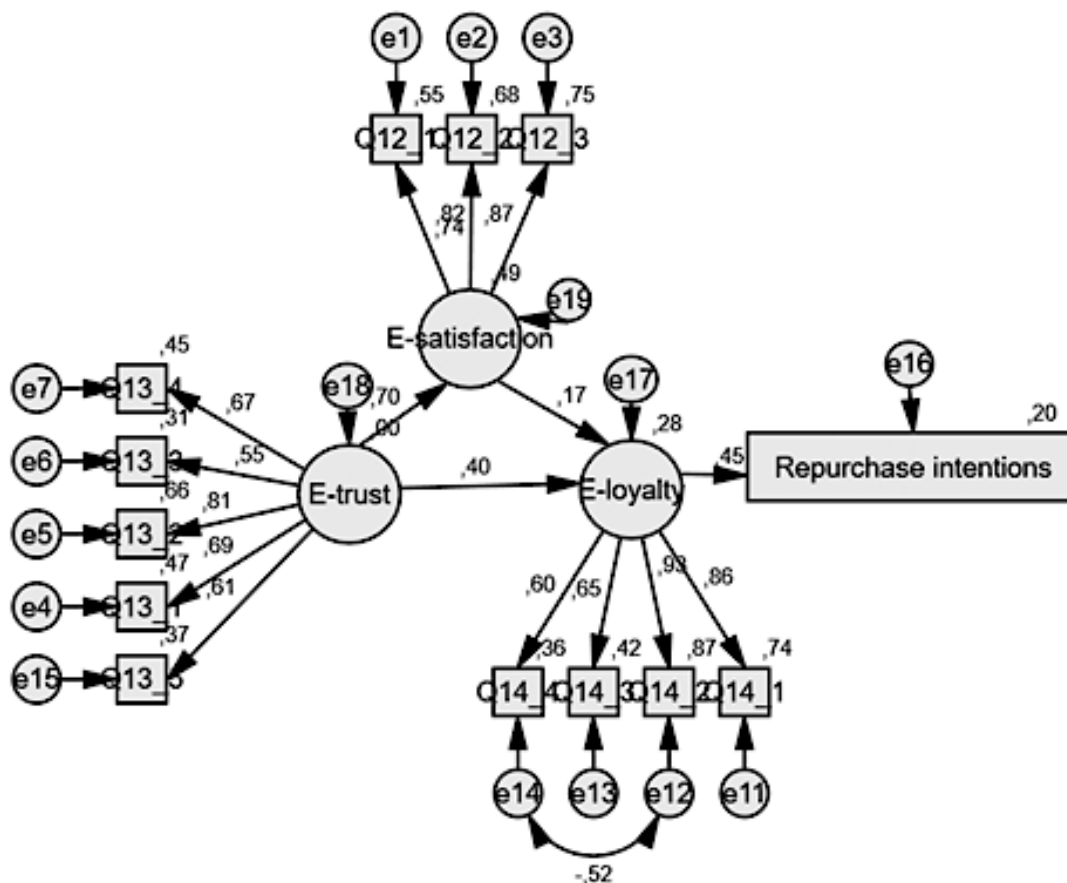
Note: 1 – Strongly Disagree | 5 – Strongly agree

Appendix 15: E-loyalty's Means

| Variables | Mean |
|-----------------------|-------------|
| E-satisfaction | 4,10 |
| E-trust | 3,86 |
| E-loyalty | 3,59 |
| Repurchase Intentions | 3,91 |

Appendix 16: Structural Equation Model – Repurchase Intentions

$\chi^2(61)=143,557$; $p=,000$; $\chi^2/df=2,353$
 $CFI=,883$; $PCFI=,691$; $GFI=,853$; $PGFI=,572$
 $RMSEA=,108$; $P(rmsea \leq 0.05)=,000$



Appendix 17: Standardized regression coefficients & P-values

| Relations | | | Estimate |
|-----------------------|------|----------------|----------|
| E_satisfaction | <--- | E_trust | 0,699 |
| E_loyalty | <--- | E_trust | 0,396 |
| E_loyalty | <--- | E_satisfaction | 0,172 |
| Repurchase intentions | <--- | E-loyalty | 0,450 |

| Relations | | | Estimate | S.E. | C.R. | P |
|-----------------------|------|----------------|----------|-------|-------|-------|
| E_satisfaction | <--- | E_trust | 1,022 | 0,188 | 5,43 | *** |
| E_loyalty | <--- | E_trust | 0,903 | 0,352 | 2,562 | 0,010 |
| E_loyalty | <--- | E_satisfaction | 0,268 | 0,227 | 1,182 | 0,237 |
| Repurchase intentions | <--- | E-loyalty | 0,417 | 0,082 | 5,062 | *** |

Appendix 18: Sobel test – Mediation effect

| Input: | | Test statistic: | Std. Error: | p-value: |
|----------------|-------|--------------------------|-------------|------------|
| a | 1.028 | Sobel test: 0.79081541 | 0.24438573 | 0.42905172 |
| b | .188 | Aroian test: 0.7679245 | 0.25167057 | 0.44253204 |
| s _a | .258 | Goodman test: 0.81588351 | 0.23687695 | 0.41456676 |
| s _b | .233 | Reset all | Calculate | |

Appendix 19: User's Dislikes

| Variables | Minimum | Maximum | Mean | Standard Deviation |
|---------------------|---------|---------|-------|--------------------|
| Quality of the food | 0 | 90 | 17,41 | 20,94 |
| Packaging | 0 | 60 | 14,42 | 15,38 |
| Handling problems | 0 | 100 | 20,8 | 21,24 |
| Variety | 0 | 100 | 25,14 | 24,35 |
| Time of delivery | 0 | 100 | 22,21 | 20,20 |

Note: Higher score = Higher dissatisfaction

Appendix 20: Comparative Analysis – User's Dislikes

| Variables | Uber eats | | Glovo | | Significance |
|-------------------|-----------|--------------------|-------|--------------------|--------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | P-value |
| Quality of food | 17,27 | 21,50 | 19,26 | 20,97 | 0,49 |
| Packaging | 15,14 | 15,83 | 9,07 | 8,99 | 0,17 |
| Handling problems | 19,79 | 21,04 | 23,81 | 23,02 | 0,34 |
| Variety | 25,85 | 26,85 | 25,15 | 16,59 | 0,35 |
| Time of delivery | 21,95 | 20,92 | 22,70 | 18,99 | 0,69 |

Appendix 21: Comparative Analysis – e-satisfaction, e-trust and e-loyalty

| Variables | Uber eats | | Glovo | | Significance |
|----------------|-----------|--------------------|-------|--------------------|--------------|
| | Mean | Standard Deviation | Mean | Standard Deviation | P-value |
| E-satisfaction | 4.15 | 0,57 | 4.00 | 0,60 | 0,215 |
| E-trust | 3,85 | 0,52 | 3,97 | 0,40 | 0,415 |
| E-loyalty | 3,65 | 0,74 | 3,56 | 0,69 | 0,469 |

Appendix 22: Past experience in food delivery – Non-user's

| Experience on food delivery | Percentage |
|-----------------------------|------------|
| Yes. | 68,00% |
| No. | 32,00% |
| Total | 100% |

Appendix 23: Familiarity with the concept of ordering food through apps – Non-user's

| Familiarity with the concept | Percentage |
|------------------------------|------------|
| Yes. | 0,52% |
| No. | 0,48% |
| Total | 100% |

Appendix 24: Cronbach's Alpha – Barriers & Concerns

| Barriers & Concerns | N° of items | Cronbach's Alfa |
|--------------------------------|-------------|-----------------|
| Perceived Technology Anxiety | 4 | .815 |
| Perceived Need for Interaction | 3 | .726 |
| Privacy & Security | 3 | .612 |
| Lack of Customer Service | 2 | .657 |

Appendix 25: Barriers & Concerns' Frequencies

| Perceived Technology Anxiety | 1 | 2 | 3 | 4 | 5 |
|---|--------|--------|--------|--------|-------|
| I hesitate in ordering food through apps because I am afraid I will do a mistake during the ordering process. | 44,00% | 32,00% | 13,30% | 9,30% | 1,30% |
| Since I change my order after it is sent, I feel apprehensive in using this service. | 32,00% | 32,00% | 17,30% | 16,00% | 2,70% |
| I have been avoiding ordering food through apps because I am not familiar with the concept and with those apps. | 32,00% | 34,70% | 12,00% | 16,00% | 5,30% |
| I feel confused with some terms apparently more technological. | 40,00% | 34,70% | 12,00% | 12,00% | 1,30% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Perceived Need for Interaction | 1 | 2 | 3 | 4 | 5 |
|--|--------|--------|--------|--------|-------|
| Personal interaction with a restaurant employee makes the ordering process more enjoyable to me. | 5,30% | 17,30% | 30,70% | 40,00% | 6,70% |
| Having the attention of a restaurant's employee is important to me. | 6,70% | 22,70% | 24,00% | 37,30% | 9,30% |
| It bothers me to use an app when I can speak directly with an employee of the restaurant. | 13,30% | 34,70% | 29,30% | 17,30% | 5,30% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Privacy & Security | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| I would feel safe doing the transaction with my credit card if I started using these apps. | 9,30% | 22,70% | 8,00% | 52,00% | 8,00% |
| I feel that there are many dangers related to this service, when it comes to the quality of the service. | 6,70% | 30,70% | 33,30% | 29,30% | 0,00% |
| I feel that there are many dangers related to this service, when it comes to the people responsible for the delivery. | 6,70% | 40,00% | 34,70% | 16,00% | 2,70% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

| Lack of Customer Service | 1 | 2 | 3 | 4 | 5 |
|---|----------|----------|----------|----------|----------|
| I feel that I cannot speak with anybody if a problem comes up when I am ordering food. | 4,00% | 17,30% | 26,70% | 46,70% | 5,30% |
| I feel that, is my order is wrong or if something is not as I asked, I cannot speak with anybody and solve quickly the problem. | 1,30% | 21,30% | 18,70% | 53,30% | 5,30% |

Note: 1 – Strongly Disagree | 5 – Strongly agree

Appendix 26: Barriers & Concerns' Descriptive Statistics

| Barriers & Concerns | Minimum | Maximum | Mean | Standard Deviation |
|--------------------------------|----------------|----------------|-------------|---------------------------|
| Perceived Technology Anxiety | 1,00 | 4,50 | 2,11 | 0,89 |
| Perceived Need for Interaction | 1,00 | 5,00 | 3,04 | 0,85 |
| Privacy & Security | 1 | 4,5 | 2,76 | 0,76 |
| Lack of Customer Service | 1,00 | 5,00 | 3,36 | 0,81 |

Appendix 27: Willingness to Order

| Willingness to order | Frequency | Percentage |
|-----------------------------|------------------|-------------------|
| Would definitely not order | 1 | 1,30 |
| Would probably not order | 8 | 10,70 |
| I could order | 45 | 60,00 |
| Would probably order | 19 | 25,30 |
| Would definitely order | 2 | 2,70 |
| Total | 75,00 | 100,00 |

Appendix 28: Comparative Analysis – User vs. Non-users – Age

| Age | Values | Users | Non-users | Total |
|---------|-------------------|--------|-----------|---------|
| < 21 | Count | 7 | 5 | 12 |
| | % within age | 58,30% | 41,70% | 100,00% |
| | Adjusted Residual | -0,7 | 0,7 | |
| 21 - 30 | Count | 113 | 43 | 156 |
| | % within age | 72,40% | 27,60% | 100,00% |
| | Adjusted Residual | 3,3 | -3,3 | |
| 31 - 40 | Count | 6 | 7 | 13 |
| | % within age | 46,20% | 53,80% | 100,00% |
| | Adjusted Residual | -1,7 | 1,7 | |
| 41 - 50 | Count | 1 | 7 | 8 |
| | % within age | 12,50% | 87,50% | 100,00% |
| | Adjusted Residual | -3,4 | 3,4 | |
| 51 - 60 | Count | 0 | 12 | 12 |
| | % within age | 0,00% | 100,00% | 100,00% |
| | Adjusted Residual | -5,4 | 5,4 | |
| Total | Count | 127 | 74 | 201 |
| | % within age | 67,20% | 32,80% | 100,00% |

Chi-Square test

| Age | Value | df | Asymp. Sig. (2sided) | Monte Carlo Sig. (2sided) | | | Monte Carlo Sig. (1sided) | | |
|------------------------------|---------|----|----------------------|---------------------------|-------------------------|-------|---------------------------|-------------------------|-------|
| | | | | | 99% Confidence Interval | | | 99% Confidence Interval | |
| | | | | Sig. | LB | UB | Sig. | LB | UB |
| Pearson Chi-Square | 15,839a | 3 | 0,001 | ,001b | 0 | 0,002 | | | |
| Likelihood Ratio | 15,216 | 3 | 0,002 | ,003b | 0,001 | 0,004 | | | |
| Fisher's Exact Test | 14,882 | | | ,001b | 0 | 0,002 | | | |
| Linear-by-Linear Association | 8,838c | 1 | 0,003 | ,004b | 0,002 | 0,005 | ,003b | 0,002 | 0,005 |
| N of Valid Cases | 189 | | | | | | | | |

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.62.

b. Based on 10000 sampled tables with starting seed 726961337.

c. The standardized statistic is 2.973.

Appendix 29: Comparative Analysis – User vs. Non-users – Gender

| Gender | Values | Users | Non-users | Total |
|--------|-------------------|--------|-----------|---------|
| Female | Count | 85 | 61 | 146 |
| | % within gender | 58,20% | 41,80% | 100,00% |
| | Adjusted Residual | -2,2 | 2,2 | |
| Male | Count | 42 | 14 | 56 |
| | % within gender | 75,00% | 25,00% | 100,00% |
| | Adjusted Residual | 2,2 | -2,2 | |
| Total | Count | 127 | 75 | 202 |
| | % within gender | 62,90% | 37,10% | 100,00% |

Chi-Square test ^c

| Gender | Value | df | Asymp. Sig. (2sided) | Exact Sig. (2sided) | Exact Sig. (1sided) | Point Probability |
|------------------------------|--------|----|----------------------|---------------------|---------------------|-------------------|
| Pearson Chi-Square | 4,883a | 1 | 0,027 | 0,034 | 0,019 | |
| Continuity Correction b | 4,19 | 1 | 0,041 | | | |
| Likelihood Ratio | 5,076 | 1 | 0,024 | 0,034 | 0,019 | |
| Fisher's Exact Test | | | | 0,034 | 0,019 | |
| Linear-by-Linear Association | 4,858d | 1 | 0,028 | 0,034 | 0,019 | 0,011 |
| N of Valid Cases | 202 | | | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.79

b. Computed only for a 2x2 table

c. For 2x2 crosstabulation, exact results are provided instead of Monte Carlo results

d. The standardized statistic is -2.204

Appendix 30: Comparative Analysis – User vs. Non-users – Education

| Education | Values | Users | Non-users | Total |
|-------------------|--------------------|--------|-----------|---------|
| High School | Count | 5 | 8 | 13 |
| | % within education | 38,50% | 61,50% | 100,00% |
| | Adjusted Residual | -1,9 | 1,9 | |
| Bachelor's Degree | Count | 62 | 47 | 109 |
| | % within education | 56,90% | 43,10% | 100,00% |
| | Adjusted Residual | -2 | 2 | |
| Master's Degree | Count | 60 | 19 | 79 |
| | % within education | 75,90% | 24,10% | 100,00% |
| | Adjusted Residual | 3 | -3 | |
| Total | Count | 127 | 74 | 201 |
| | % within education | 63,20% | 36,80% | 100,00% |

Chi-Square Test

| Education | Value | df | Asymp. Sig. (2sided) | Monte Carlo Sig. (2sided) | | | Monte Carlo Sig. (1sided) | | |
|------------------------------|----------|----|----------------------|---------------------------|-------|-------|---------------------------|----|-------|
| | | | | 99% Confidence Interval | | | 99% Confidence Interval | | |
| | | | | Sig. | LB | UB | Sig. | LB | UB |
| Pearson Chi-Square | 10,812 a | 2 | 0,004 | 0,004 b | 0,002 | 0,005 | | | |
| Likelihood Ratio | 10,982 | 2 | 0,004 | 0,005 b | 0,003 | 0,007 | | | |
| Fisher's Exact Test | 10,863 | | | 0,004 b | 0,002 | 0,006 | | | |
| Linear-by-Linear Association | 10,756 c | 1 | 0,001 | 0,001 b | 0 | 0,002 | ,001 b | 0 | 0,002 |
| N of Valid Cases | 201 | | | | | | | | |

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.79

b. Based on 10000 sampled tables with starting seed 1993510611

c. The standardized statistic is -3.280

Appendix 31: Comparative Analysis – User vs. Non-users – Income

| Income | Values | Users | Non-users | Total |
|---------------|-------------------|--------|-----------|---------|
| 0 – 500€ | Count | 54 | 25 | 79 |
| | % within income | 68,40% | 31,60% | 100,00% |
| | Adjusted Residual | 1,3 | -1,3 | |
| 501 – 1000€ | Count | 34 | 20 | 54 |
| | % within income | 63,00% | 37,00% | 100,00% |
| | Adjusted Residual | 0 | 0 | |
| 1001 – 1500€ | Count | 14 | 10 | 24 |
| | % within income | 58,30% | 41,70% | 100,00% |
| | Adjusted Residual | -0,5 | 0,5 | |
| 1501 – 2000€ | Count | 13 | 7 | 20 |
| | % within income | 65,00% | 35,00% | 100,00% |
| | Adjusted Residual | 0,2 | -0,2 | |
| 2001 - 2500 € | Count | 4 | 6 | 10 |
| | % within income | 40,00% | 60,00% | 100,00% |
| | Adjusted Residual | -1,5 | 1,5 | |
| 2501 – 3000€ | Count | 2 | 2 | 4 |
| | % within income | 50,00% | 50,00% | 100,00% |
| | Adjusted Residual | -0,5 | 0,5 | |

| | | | | |
|--------------|-------------------|---------|---------|---------|
| 3001 – 3500€ | Count | 2 | 0 | 2 |
| | % within income | 100,00% | 0,00% | 100,00% |
| | Adjusted Residual | 1,1 | -1,1 | |
| 3501 – 4000€ | Count | 0 | 2 | 2 |
| | % within income | 0,00% | 100,00% | 100,00% |
| | Adjusted Residual | -1,8 | 1,8 | |
| > 4001€ | Count | 4 | 3 | 7 |
| | % within income | 57,10% | 42,90% | 100,00% |
| | Adjusted Residual | -0,3 | 0,3 | |
| Total | Count | 127 | 75 | 202 |
| | % within income | 62,90% | 37,10% | 100,00% |

Chi-Square Test

| Income | Value | df | Asymp. Sig. (2sided) | Monte Carlo Sig. (2sided) | | | Monte Carlo Sig. (1sided) | | |
|------------------------------|--------|----|----------------------------|------------------------------|-------------------------------|-------|------------------------------|-------------------------------|------|
| | | | | | 99% Confidence Interval | | | 99% Confidence Interval | |
| | | | | Sig. | LB | UB | Sig. | LB | UB |
| Pearson Chi-Square | 8,459a | 8 | 0,390 | 0,4 b | 0,387 | 0,412 | | | |
| Likelihood Ratio | 9,621 | 8 | 0,293 | 0,405 b | 0,393 | 0,418 | | | |
| Fisher's Exact Test | 7,865 | | | 0,426 b | 0,413 | 0,438 | | | |
| Linear-by-Linear Association | 3,519c | 1 | 0,061 | 0,064 b | 0,058 | 0,07 | ,035 b | 0,03 | 0,04 |
| N of Valid Cases | 202 | | | | | | | | |

a. 9 cells (50.0%) have expected count less than 5. The minimum expected count is .74

b. Based on 10000 sampled tables with starting seed 957002199

c. The standardized statistic is 1.876

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