

DIGITALISING THE RESTAURANT VISIT

**AN EXPERIMENTAL STUDY OF HOW QR CODES AND
WAITING STAFF IN THE ORDERING PROCESS AFFECT
CUSTOMER SATISFACTION**

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Abstract:

Digitalisation is becoming more prevalent in our society today, and customer preferences are changing with it. This thesis investigates the digitalisation of the restaurant business through taking a closer look at the impact replacement of waiting staff with digital QR codes has on customer satisfaction. Employee mere presence is used as a theoretical cornerstone to help observe and explain the effect on satisfaction, with technology anxiety and need for interaction being traits that are assumed to moderate this interaction. A scenario experiment was conducted through a self-completion questionnaire distributed online. The respondents were randomly assigned either a scenario containing a restaurant visit with waiting staff, or a visit where ordering was conducted using a phone and a QR code, devoid of any waiting staff. The findings support that employee mere presence positively affects customer satisfaction, and that need for interaction acts as a moderator. This implies that customers value the presence of, and interaction with, waiting staff. Consequently, practitioners should be wary of implementing QR codes as a substitute.

Keywords:

Self-service technology, QR code, Digitalisation, Satisfaction, Fine Dining, Mere Presence, Ordering food, Technology Anxiety, Need for Interaction, Restaurants

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Definitions

Quick Response (QR) code: A two-dimensional code consisting of black modules uniquely arranged in a square pattern on a white background that can store data information, e.g., an URL, and is designed to be read by the camera of smart devices (Tiwari, December 2016).

Self-service technology (SST): A technological interfaces that enables customers to produce a service independent of direct service employee involvement (Meuter et al., 2000).

COVID-19: An infectious disease that caused a global pandemic (World Health Organization, n.d.).

Technology Anxiety (TA): The anxiety some individuals feel in anticipation of, and when having to use technology (Meuter et al., 2003).

Need for Interaction (NFI): The need that some individuals feel for interacting with the service employee in a service encounter (Dabholkar, Pratibha A., 1992).

Trait: a particular characteristic that can produce a particular type of behaviour (Cambridge Dictionary, n.d.b).

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1. Introduction

We are approaching an increasingly digitalised world where quick, convenient, and customised solutions are becoming a hygiene factor rather than a “nice to have”. QR codes (abbreviated from Quick Response Code) have been a widespread tool for businesses and organisations to facilitate for these requirements and to satisfy their customers. QR codes were becoming especially relevant during the COVID-19 pandemic which required us to minimise human contact and urged businesses to shift to contactless services to the extent it was possible (Public Health Agency of Sweden, 2020). The fast and contactless service provided by scanning a QR code is appreciated by many, as can be seen in e.g., this Tripadvisor review from June 2021:

The QR code scanning to order is brilliant, even if it wasn't for Covid this is a really nice way to order your food and drinks... (Tripadvisor, 2021).

Others, however, express deep dissatisfaction which can be seen in a web article from the daily magazine and podcast network Slate, from 2021 written by Christina Cauterucci:

Before the pandemic, I'd shudder at the sight of a restaurant table full of people all staring at their phones. I was always happy not to be them or be sitting with them. I always kept the lively conversation flowing at my table. I had good boundaries between my on- and offline lives. But now, restaurants around the world have nonconsensually turned us all into the people I used to judge. I hate it. And it's time for us to go back" (Cauterucci, 2021).

Based on the quotes above, QR codes in a restaurant setting seems to be an opinion divider.

1.1. Background

1.1.1. Self-service technology

The rapid advancement in technology is revolutionising the service environment as it enables service firms to increasingly incorporate technology into their operations. One frequently used tool is self-service technologies (SST), which using Meuter et al. (2000)'s definition is:

“Technological interfaces that enables customers to produce a service independent of direct service employee involvement”.

The concepts of self-service and SST are not new. We see self-service in the form of among other things, vending machines on train stations, self-checkouts in grocery stores and self-service kiosks frequently used by fast-food restaurants.

1.1.2. QR codes as a tool for Self-Service

QR codes are frequently used in self-service settings. A QR code is a two-dimensional code that can store data information, e.g., text or a URL, and is designed to be read by the camera of smart devices. The code consists of black modules uniquely arranged in a square pattern on a white background. It is designed to allow its content to be decoded at a high speed and have more information capacity than the one-dimensional barcode. Today, QR codes are used in many settings (Tiwari, December 2016) including exhibition guides at museums, attendance checking in classrooms, and scanning boarding pass information on airports, to mention a few (Ozkaya et al., 2015).

During the COVID-19 pandemic, restaurants, similarly to other businesses, needed to minimise the human interaction to reduce the likelihood of spreading the virus. In a press release from 24th of March 2020, the Public Health Agency of Sweden stated that if it was possible, restaurant guests should place the order without interacting with waiting staff (Public Health Agency of Sweden, 2020). The pandemic consequently resulted in many restaurants exploring the opportunity of providing their menus digitally via a QR code. The restaurant guest uses their smartphone camera to scan the QR code, often already attached on the table, chooses their meal or drink of choice, and then immediately pays for the items (Tasksoftware, 2022). The seamless integration allows for a quick and smooth experience, thus seemingly well suited for a fast-food chain restaurant. In terms of a fine dining experience, there are several question marks regarding how such a solution would be considered authentic.

1.1.3. Self-Service Technology from a Firm Perspective

Even though this thesis covers the topic of self-service from a customer-centric perspective it is reasonable to cover how firms are affected by SST. It is especially relevant due to the current price increases of e.g., food commodities and electricity in Sweden and around the world (The Swedish Food Federation, 2021). This is leading businesses to either increase their prices or explore how to cut costs. Two concepts are commonly mentioned when cutting costs in times of inflation: 1). *shrinkflation* which means that the price stays the same, but you receive less than you did before, e.g., smaller portions, and 2). *skimpflation* which means that the price stays the same, but the quality is lower than it was before, e.g., cheaper ingredients or that part of the service is pushed onto the guest (Food & Friends, 2022).

By deploying SST, firms can apply productivity benefits of information and technology to their business. Firms benefit from pursuing SST to meet customer demand, reduce

costs, improve service level, or gain competitive advantage (Shahid et al., 2019). On the other hand, automation has led to a decreasing need for employees in repetitive tasks, e.g., in the retail industry the number of cashiers is rapidly declining due to the existence of self-checkouts. According to the Associated Press (2013):

“millions of workers are caught in a competition they can’t win against machines that keep getting more powerful, cheaper and easier to use”.

QR code solution providers, e.g., TASK, preach the benefits of cost and time savings possible for restaurant owners. These savings are both associated with less labour being needed as well as enabling menus to be updated without the need to reprint. Furthermore, TASK highlight the benefits of guests not having to wait for waiting staff to order and high chances of additional sales since customers can easily order additional food or drinks (Tasksoftware, 2022).

This shift toward automation has steered the evolution of the definition of a customer to include the phrase “partial employee” (McWilliams et al., 2016). Noteworthy however, is that while human interaction is eliminated, executives choose to ignore the fact that technological failures of the machines can usually only be solved by a present human employee (Di Pietro et al., 2014).

1.1.4. The Future of the Restaurant Business

In the report *A Growing Industry During Times of Change* the R&D Fund of the Swedish Tourism and Hospitality Industry, BFUF, identifies several trends for 2030 both regarding customer preferences and the restaurant industry. One of the main trends is the further digitalisation of our society. From a customer preference perspective, expectations of a fully digitalised experience are growing and customers in the future will most likely demand digital solutions for payment and ordering. On the other hand, the report also identifies the increased value of human interaction in an ever more automated world, meaning that interactions with a human service agent could become a luxury premium in a not-so-distant future. These two differing ways of conducting business is leading to a rift between those restaurants that focus on being “high tech”, and those being “high touch” (The R&D Fund of the Swedish Tourism and Hospitality Industry, 2018).

From an industry perspective, the report notes a positive correlation between urbanisation and restaurant visits. The predicted increase of urbanisation will thus lead to growth within the restaurant sector, further putting emphasis on the need for more efficient solutions to manage the increased demand. Another trend that is mentioned in the report is the segmentation and specialisation of the restaurant sector. Fast-food restaurants are expected to fulfil the more basic needs of sustenance and everyday meals, while sit-down and fine dining restaurants are expected to become even more of an experience and not necessarily exist solely for the purpose of eating food. This change is further aided by the

digitalisation and streamlining of service through automation and self-service technologies (The R&D Fund of the Swedish Tourism and Hospitality Industry, 2018).

1.2. Problem Formulation

The ever-growing digitalisation of our society has reshaped the way we interact with the world around us. Actions that were previously relegated to a slow and tedious procedure are now able to be completed in an instant without ever having to interact with another human or wait in queues. The COVID-19 pandemic gave a significant boost to the prevalence of SSTs in our everyday lives, and they began to appear in places that were previously regarded as non-digital experiences. Restaurants are one example of those experiences that were changed because of this. The efficiency of digital solutions, such as QR codes, have proved their worth to restaurant owners across the world, and now that the pandemic is nearing an end (United Nations, 2022) it seems as if they are here to stay.

This rampant digitalisation, however, has also raised a few questions. Given that we have phenomena like the relationship between mere presence and customer satisfaction, one begins to wonder, *how much digitalisation is too much digitalisation?* The objective of this thesis is to explore how customer satisfaction is affected when waiting staff is replaced by a QR code when ordering at a restaurant, as well as examining potential reasons as to why people react the way that they do. The fine dining restaurant setting is chosen as it is currently not an area that has seen much prior research, as well as it being a setting where change is currently taking place.

1.3. Research Purpose and Research Questions

The primary purpose of this study is to create a better understanding of the impact implementing digital solutions has in a service setting. More specifically, to investigate the way in which substituting traditional waiting staff for a QR code when ordering at a restaurant impacts the customer's satisfaction. We believe that this would be interesting to study since the restaurant business is a growing sector that is largely reliant on service provided by the personnel. The primary research question becomes as follows:

- What is the impact on customer satisfaction when a QR code is used as a substitute for waiting staff in a fine dining restaurant setting?

In addition, the thesis aims to investigate how the effects on customer satisfaction are affected by traits of consumers. In particular, we will examine the role of technology anxiety (TA) and need for interaction (NFI), respectively. TA is defined as

the anxiety some individuals feel in anticipation of, and when having to use technology (Meuter et al., 2003), and NFI is defined as the need that some individuals feel for interacting with the service employee in a service encounter (Dabholkar, Pratibha A., 1992). The concepts will be discussed more in detail in section 2.2.2 Technology Anxiety and 2.2.3 Need for Interaction, respectively.

1.4. Relevance to Marketing

The study of how mere presence is affecting customer satisfaction in a restaurant setting falls within the field service marketing. Service marketing is founded upon the fundamental concepts of marketing and has evolved in accordance with the philosophy of customer-centric orientation. This philosophy is manifested in terms such as “everything the organization does is with the customer in mind” or from a more rational and business-oriented approach by looking after customers and maximising satisfaction (Gilmore, 2003).

This study is also relevant to marketing as it hopefully will provide practitioners with an insight on how their potential consumers might react toward a shift of replacing waiting staff with a QR code when ordering, thus affecting sales.

1.5. Expected Contribution

There is a vast amount of research within the field of customer satisfaction in the hospitality industry. However, we believe that there exists a research gap regarding the digitalisation of fine dining restaurants, as most articles published focus on the fast-food setting. With this study, we aim to decrease the research gap in service marketing for fine dining restaurants becoming digitalised.

From a practical marketing perspective, the expected contribution is mainly to provide a scientific background and a guide for potential implementors of QR codes in restaurants. We hope that this thesis will provide some insight on how those implementations might affect overall customer satisfaction and prove one basis for evaluating the benefits and drawbacks.

1.6. Delimitations

Due to the limited resources of a Bachelor thesis, among others time, this thesis is geographically constrained to Sweden, even though the digitalisation of restaurant visits is a phenomenon that occurs globally. However, according to the *Technology & Innovation Report 2021* from United Nations Conference on Trade and Development (UNCTAD) Sweden is ranked number 1 in the world when it comes to readiness towards the use, adoption, and adaption of frontier technologies within Information and

Communication Technologies (ICT) (United Nations, 2021). Due to this, we believe that constraining our study to Sweden could prove a benefit. The high levels of adoption could possibly serve as a predictor for future trends in the world, thus giving credibility to the viability of testing this relatively new use of QR code in restaurants, in a country like Sweden.

This thesis covers the fine dining restaurant setting. Fine dining is a style of eating that usually takes place in expensive restaurants, where especially good food is served to people, often in a formal way (Cambridge Dictionary, n.d.a). In this study we have chosen to exclude fast-food restaurants such as McDonalds since they by construct focus on providing quick and affordable service and not a dinner experience where waiting staff are expected to take orders at the table. We have also chosen to exclude restaurants where the concept of self-service lies as a foundation to their business model. This is because these restaurants prominently advertise the digital features, which we deem to be a deliberate differentiating factor (Pinchos for example, refer to themselves as “the app restaurant” on their website (Pinchos, n.d.)). Thus, customers who visit these restaurants do so knowing that the experience will be different from a regular restaurant.

Finally, to our knowledge, the majority of QR code payment solutions require the customer to pay immediately. Therefore, we have disregarded the discussion about how customers can tip for the service provided by the waiting staff. We also recognise that this limitation might be less of a problem here in Sweden where tipping is not expected, as in many other countries (Visitsweden, 2020).

2. Literature Review

In order to properly study the impact of replacing traditional table service with QR codes, we first need to examine the various theoretical areas that encompass the service encounter. This is done with regards to employee presence as well as digitalisation and consumer preferences. The articles used as references have been collected from library data bases.

2.1. Employee Mere Presence

When a customer first enters a place of business they are met with a plethora of new, or familiar, sensations. In this setting, Söderlund (2016) found¹ that simply the mere presence of employees positively affects the satisfaction of a customer. This positive effect is believed to have its roots in our primal sensitivity for other humans. People are highly perceptive and biologically coded to be more sensitive towards the presence of other humans and human likenesses. This phenomenon is something that can be observed even among infants (Lee, K. M., 2004).

Beyond being sensitive and attentive to the presence of other humans, human presence also carries an emotional charge which can be both positive and negative (Söderlund, 2016). Studies examining this phenomenon have shown that it has a person-positivity bias, meaning that attitude objects are evaluated more favourably the more they resemble individual humans (Sears, 1983). While earlier studies have focused on how the presence or indication of presence of other customers influences the customer satisfaction levels, recent research shows that the presence of employees also has a positive impact on satisfaction (Söderlund, 2016). Furthermore, in-person interactions between customer and service provider are believed to be an effective way of providing information as well as empathy and a personal connection (Campbell, 2007).

Given that humans are sensitive to the presence of other humans, and that the positive effect of mere presence of employees is observable and measurable in other contexts, we believe that the same effect would be observable in a restaurant setting. Replacing waiting staff with a QR code emphasises the lack of mere presence and our hypothesis is then as follows:

¹ Söderlund (2016) has its starting point in the psychology of human sensitivity for presence and conducted two between-subjects scenario experiments, in different settings, where only the presence of an employee was manipulated. The two settings in question were a hotel and clothing store scenario. The respondents would read one scenario and answer a questionnaire regarding their experience of the setting. From this Söderlund (2016) measured customer satisfaction and pleasure, finding through statistical analysis that when an employee is present there is a positive effect on satisfaction, one that is mediated by customer affect (pleasure). Söderlund also further established this link through a field study with secret shoppers.

H1: Absence of waiting staff but presence of QR codes will lead to lower customer satisfaction compared to presence of waiting staff but absence of QR codes.

2.2. Consumers and Self-Service Technology

Self-service technology (SST) and its implications for firms were briefly described in the background of this theses, in this section we will focus more on its implications from a consumer perspective and the assumed moderators that are affecting satisfaction.

2.2.1. Self-Service Technology from a Consumer Perspective

SSTs are chosen by individuals for numerous reasons, including convenience, money savings, faster service, and ease of use. They empower the consumer to be in control of the service and to not feel rushed or pressured (Shahid et al., 2019). On the other hand, as discussed by Reinders et al. (2015) consumers do not like being forced to serve themselves. Having a choice is important and it can alter the perception of SST altogether. If performing self-service is not a choice but a requirement, consumers experience “reduced perception of freedom of choice and increased levels of feeling manipulated” by firms. When the consumer is using self-service based on willingness to do so, satisfaction is likely to go up due to the opportunity for the consumer to participate in the act. By contributing to the service, the customer increases their level of emotional value, which is resulting in a more positive experience compared to traditional service. A note of caution is given here that users generally may recall failures rather than successes while using SST (Shahid et al., 2019). In a fine dining setting consumers can thus benefit from more sense of control and shorter waiting times by ordering via a QR code, but on the other hand, they will miss out on the possibility to receive personal attention and guidance by waiting staff.

Anselmsson (2001) found customers’ need for independence, self-esteem, risk aversion, socially integration as well as their attitude towards technology in general as some of the customer characteristic determinants of service quality (Shahid et al., 2019). The latter is of largest interest for this study since we want to study how technology-based self-service is affecting satisfaction.

Many researchers have investigated the link between demographic factors and the attitude toward technology-based self-service. Lee, H., Jeong, Xu, & Fairhurst (2010) empirically explored the relationship between demographic factors (gender, age, education, and income), consumer traits (technology anxiety, need for interaction and technology

innovativeness) and intent to use retail self-checkouts (i.e., a form of SST). Their study showed that demographic factors only indirectly influenced the intention to use self-checkouts through consumer traits.

2.2.2. Technology Anxiety

Spielberger (1966) discusses the nature and measurement of anxiety as characterised either by state anxiety or trait anxiety. State anxiety refers to a transitory emotional state, which consists of feelings of apprehension and tension, and heightened activity of the automatic nervous system. Trait anxiety is defined in terms of a stable, individual difference in the frequency that anxiety states are manifested over time.

Computer anxiety as a psychological phenomenon is a field studied by many researchers during the past decades. Several authors including Laguna & Babcock (1997); Rosen & Maguire (1990) consider computer anxiety as a state anxiety, linked exclusively to the actual or symbolic presence of a computer. Contrary to that, Beckers et al. (2007) and others, found that is that computer anxiety is more strongly related to trait anxiety than to state anxiety. They found that computer anxiety and state anxiety in fact were only related when a computer was used.

Technology anxiety (TA) is different from computer anxiety in that TA focuses on a user's state of mind about general technology tools, yet what has been learned from computer anxiety can easily be extended to apply to anxiety in relation to technological tools in general (Meuter et al., 2003). Two underlying factors for the negative feelings toward technology that is associated with TA are users' fear of "making mistakes" or "looking incapable" (Özdemir-Güngör & Camgöz-Akdağ, 2018). In this thesis TA is considered a trait², i.e., a particular characteristic that can produce a particular type of behaviour (Cambridge Dictionary, n.d.b), that certain individuals have.

Given that TA is a trait amongst some humans, and one that has a negative relationship with satisfaction in anticipation of and/or after having used an SST, we believe that a similar effect as described above will be observable in a restaurant setting. Thus, we hypothesise as follows:

H2: TA is moderating the relationship between the presence of waiting staff and customer satisfaction.

² The definition of trait used in research differ across scholars. Sjöberg (2000) define trait as "a tendency for a person to react similarly in different situations" but also states that when a group is studied based on a particular trait there are large variations (Lennart Sjöberg, 2000). Consequently, it can be argued whether TA should rather be described as an attitude or perception an individual has of themselves. We, the authors, have based our view of TA on Lee et.al (2010) and chosen to regard TA as a trait.

Gender and age were the two factors that were the most influential on TA when investigating intention to use self-checkouts. Of the two, age was the most influential. Lee, H. et al. (2010) found that “women tend to exhibit higher level of TA while men are more likely to be innovative toward technology” as well as “older consumers who tend to have more TA are less likely to use self-checkouts than younger consumers”. For the latter group the intention was also influenced by need for interaction and technology innovativeness.

Other researchers (Dean, 2008; Lee, H. et al., 2010; Lee, S. & Yang, 2021) have investigated demographic factors in relation to technology-based self-service and typically found that young males are more likely to use such service options. In today’s changed social and economic world however, groups that previously had limited access to technology, i.e., women and older people all have access to and some level of familiarity with using simple technologies. Therefore, demographic factors are not deemed to be of critical interest in understanding why consumers use technology-based self-service (Dabholkar, Prathiba A. & Bagozzi, 2002).

Since the importance of demographic factors is debated by other researchers, we chose to conduct tests and analysis on TA in relation to age and gender, based on our data set. We, however, decide not to form any hypotheses for these variables due to the ambiguity mentioned earlier.

2.2.3. Need for Interaction with a Service Employee

The need for interaction (NFI) with a service employee refers to the need that some individuals feel for interacting with a service employee in a service encounter (Dabholkar, Pratibha A., 1992). Crosby et al. (1990) suggested that the NFI in a service delivery is very important to some consumers, and Dabholkar, Pratibha A. (1996) showed that it is a relevant factor for technology-based self-service. Individuals with a high NFI will avoid self-service, in particular if it is technology based, whereas individuals with a low NFI in contrast will seek out self-service options (Dabholkar, Prathiba A. & Bagozzi, 2002).

Research has found that need for interpersonal contact is closely connected to the need of avoiding machines. Consumers with a greater need for interpersonal contact in retail situations tend to avoid machines since the use of machines is not compatible with their perspective. They lack the intrinsic motivation to use technology-based self-service and instead, they would look forward to interacting with employees (Dabholkar, Prathiba A. & Bagozzi, 2002). We recognise however, that much has happened in recent times, both in terms of the use of technology in our society and the attitudes toward it. Nevertheless, preference for interacting with a service employee instead of a machine is still an important factor to consider.

Similar to TA, NFI is considered a trait³ some people have, one which, according to the research above, determines a person's willingness to seek out and use self-service technologies. Given these factors, we believe that the inherent NFI among respondents will have a moderating effect in our setting as well, and hypothesise as follows:

H3: NFI is moderating the relationship between the presence of waiting staff and customer satisfaction.

Lee, H. et al. (2010) support that age is positively related to NFI, and thus negatively associated with intention to use retail self-checkouts. This is also supported by Simon & Usunier (2007) in their study where they found that older people seek personal interaction in shopping environments and prefer personal assistance over self-service.

We chose to conduct tests and analysis on NFI in relation to age and gender, based on our data set. We, however, decide not to form any hypotheses for these variables due to the ambiguity regarding the importance of demographic factors in relation to consumer traits in general.

³ The definition of trait used in research differ across scholars. Sjöberg (2000) define trait as “a tendency for a person to react similarly in different situations” but also states that when a group is studied based on a particular trait there are large variations (Lennart Sjöberg, 2000). Consequently, it can be argued whether NFI should rather be described as an attitude or perception an individual has of themselves. We, the authors, have based our view of NFI on Lee et.al (2010) and chosen to regard NFI as a trait.

3. Method

Before choosing the method for conducting this study we firstly scanned the environment to get an understanding of how widespread QR codes were as a tool for ordering food at restaurants in Stockholm. By searching for QR code providers, we found several restaurants stated as customers, however when approaching the restaurants, we found that QR codes were used for other services, e.g., wi-fi.

This thesis applies a quantitative scientific approach to answer the research question. This stems from an epistemologically positivist approach and implies that collection and analysis of quantifiable data will through deduction lead to an answer (Bell et al, 2022). A positivist approach considers the world from an objectivist ontological position, meaning that “social phenomena confront us as external facts and that they exist whether or not we are aware of them” (Bell et al., 2022). This research method was chosen in part due to the influence of the studies discussed in the section of theory all applying the same approach, ensuring that there will be comparability with previous and future research as well as replicability.

3.1. Chosen Method

We decided to use a quantitative, experimental approach with a text-based roleplay scenario to investigate how satisfaction would be affected when waiting staff is replaced by a QR code at a fine dining restaurant. Two scenarios were constructed to manipulate the independent variable *mere presence*. We asked each respondent to assume the role of a customer who was ordering food at the restaurant described in the scenario. After reading one of the scenarios the respondents were asked to assess their satisfaction if the scenario would have been played out in real life. This method has been used in previous research from Söderlund et al. (2014) in similar settings. The survey was distributed digitally through the survey platform Qualtrics, to increase the potential rate of response.

An advantage of using this method is that external factors that can affect the independent and dependent variables are controlled for. In a written scenario, all the possible things that can affect satisfaction from an outside perspective are described, thus removing unwanted outside interference that otherwise might affect the result. Furthermore, random assignment of treatment is ensured through the randomising feature in Qualtrics, ensuring a near equal distribution of respondents. Finally, the approach is relatively simple and straightforward which is positive given our delimitation regarding time.

However, there are also disadvantages associated with the approach. There is a questionable degree of realism in the experiment as the scenario is imaginary and there is a risk of experimental demand effects. Experimental demand effects (EDE) refer to

changes in behaviour by experimental subjects due to cues about what constitutes appropriate behaviour. EDE that are uncorrelated with the experimental objective are harmless and EDE that are negatively correlated with the true experimental objective are potentially harmful only if evidence is not found in favour of the true experimental hypotheses. EDE that are positively correlated with the true experimental objectives on the other hand are always potentially problematic since any result in favour of the hypotheses that the true experimental objective is about may be confounded by the EDE (Zizzo, 2010). Altogether the disadvantages decrease the reliability and validity for a real-life situation. Depending on how the scenario is distributed and thus the diversity of the respondents, the generalisability can also be questioned (Bell et al., 2022). All these disadvantages were taken into consideration when deciding method, and various steps were taken to mitigate the disadvantages as much as possible, as will be described throughout this section.

3.2. Other Methods of Consideration

To address the research question, we identified four methods of interest; (1) present a text-based roleplay scenario for respondents to respond to (the chosen method), (2) conduct a field experiment, (3) conduct content analyses of already existing reviews or (4) conduct in-depth interviews with restaurant guests and restaurant owners, respectively. The methods differ in terms of their nature of being quantitative (1, 2 and 3) or qualitative (4), experimental (1, 2 and 4) or non-experimental (3) as well in terms of reliability, validity, and generalisability. The general advantages and disadvantages of the three methods not chosen will be discussed briefly below, as well as reasoning as to why they were not chosen.

3.2.1. Field Experiment

Field experiments are interesting to conduct since the quantitative, experimental method contribute to empirical data for a phenomenon. To test the effect on satisfaction when waiting staff is replaced by a QR code we would ideally want to collaborate with a restaurant and compare customer satisfaction levels depending on if the restaurant had QR code ordering or took orders traditionally.

The main advantages of conducting a field experiment are that the manipulation takes place in the subject's natural environment, and both the situation and manipulation is realistic. However, the method is not entirely unproblematic. First, there is a possible influence of uncontrollable environmental factors and second, random assignment to treatment can be difficult due to the unpredictability of customer flows. Finally, and crucially a reason why this method was not chosen, the method requires full cooperation from a restaurant. Finding a restaurant that both already offers this type of service, as well

as one that is willing to cooperate, proved a difficult and a time-consuming task (Bell et al., 2022).

3.2.2. Content Analysis

Performing a content analysis would be a non-experimental way of measuring the satisfaction of customers who have already received service at an establishment that uses QR codes for ordering food. The content, in this case reviews containing mentions of a QR code, would be gathered from websites like Tripadvisor. Then, a rating would be assigned based on the nature and attitude of the review i.e., positive, negative, or neutral.

Advantages of using a content analysis is the abundance of available data online which ensures that the observations made are of a statistical significance. Furthermore, it also ensures that the experiment is easily replicable. Disadvantages with using this method are that inherent in the method there exists a certain level of subjectivity, as it is we as readers that must interpret the underlying nature of the review. This method was not chosen in part due to the disadvantage above, but also more general concerns regarding the reliability of online reviews, since studies of the hotel industry suggest that there are several other factors affecting reviews other than the product that is being reviewed (Ahn et al., 2017).

3.2.3. In-depth interviews

Conducting in-depth interviews with restaurant guests and restaurant owners, respectively would have given us a deeper insight into perceptions and preferences. The method is classified as qualitative and experimental, and similarly to the aforementioned methods it has its advantages and disadvantages affecting the credibility, transferability, dependability and confirmability. The main advantages of using this method are its flexibility and adaptability to the situation and/or interview subject and the interviewer's possibility to investigate issues that are resistant to observation by asking the interview subject to reconstruct prior events. The disadvantages of qualitative research are mainly that there is a risk of subjectivity, it is difficult to replicate, problems of generalisation and lack of transparency (Bell et al., 2022).

This method was not chosen due to problems of generalisation. Currently there are few restaurants offering QR code ordering only, and consequently, a limited number of restaurant owners and restaurant guests are familiar to the concept and how it works in practice. Therefore, we would not have been able to get a sufficient overview of the attitudes towards QR codes in a fine dining setting.

3.3. Reliability and Validity

Reliability concerns the consistency of a measure. That is, if the experiment is repeated, would it produce the same results. The internal reliability of our multiitem indexes is quantified by the Cronbach's alpha score, which measures the correlation between each individual variable that collectively make up the index (Bell et al., 2022). The results of the Cronbach's alpha score for each variable are found in section 3.4.1 "Variables". The reliability of the satisfaction measure is also examined further using the variables intention to recommend and intention to revisit, which is further discussed in section 4.2.

The validity of a measure can be expressed as a question regarding if a measurement captures what it is meant to capture (Bell et al., 2022). To increase measurement validity in this study, all variables and questions chosen for the questionnaire are directly gathered from previous studies. More specific details regarding where each variable is referenced from can be found in the section 3.4.1 "Variables". As previously discussed, the chosen method of scenario analysis is one which is used in similar experiments which contributes to increasing the external validity of the thesis. Nevertheless, it is of essence to highlight that while steps have been taken to increase both the reliability and validity of the study, there still exists some aspects that negatively affect these factors. First and foremost, the use of convenience sampling lowers the generalisability, replicability, and reliability of the study (Bell et al., 2022). Secondly, since we translated the scenario and the questions in the questionnaire to Swedish it might lower the validity, which is further discussed in the section 3.4.3 "Scenario and questionnaire".

3.4. Main Study

In the following section, the main study is described. First, the variables are presented followed by a description of the pre-study that was conducted before the main study was finalised. Next the data collection, handling of incomplete responses as well as the survey flow is presented. Finally, we present how the data was processed and analysed.

3.4.1. Variables

Below the variables (independent, dependent, moderators) for this study are introduced.

Independent Variables

Mere Presence

Mere presence is a dichotomous independent variable that measure presence of a human being (0 = presence of QR code and absence of waiting staff, 1 = presence of waiting staff and absence of QR codes). The no presence (i.e., QR code) scenario and the presence (i.e., waiting staff) scenario were randomly allocated to the respondents through a function in Qualtrics.

Dependent Variables

Satisfaction

In order to measure customer satisfaction we asked the following question: “what is your overall impression of this restaurant visit?”. It was followed by three satisfaction items used in several national satisfaction barometers (Claes Fornell, 1992): “How dissatisfied/satisfied are you with this restaurant visit” (1 = very dissatisfied, 7 = very satisfied), “To what extent does this restaurant visit meet your expectations?” (1 = not at all, 7 = totally), and “Imagine a restaurant that is perfect in every aspect. How near or far from this ideal do you find this restaurant?” (1 = very far from, 7 = cannot get any closer). The three questions were combined to an index satisfaction for the analysis (Chronbach’s alpha = 0.96)

Evaluation

The respondents were asked to state to which extent they agreed on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) to the following statements: “I found this scenario realistic” and “I found this scenario authentic”. Evaluation of the scenario is a combined average of the respondents’ reported perceived realism and authenticity of the scenario.

Assumed moderators

Technology Anxiety

TA can be seen as a trait some humans have, thus, we hypothesise that it can have a moderating effect on the relationship between mere presence and satisfaction.

To measure TA the respondents were asked to state to which extent they agreed on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) to the following three statements: “I feel worried using SST in my everyday life”, “I have avoided SST because it is unfamiliar to me” and “I prefer to use traditional service over SST”. These questions were previously used in a study by Meuter et al. (2005). The responses were then combined into a multiitem index. The three questions were combined to an index TA for the analysis (Chronbach’s alpha = 0.86).

Need for Interaction

NFI can be seen as a trait some humans have, thus, we hypothesise that it can have a moderating effect on the relationship between mere presence and satisfaction.

To measure NFI the respondents were asked to state to which extent they agreed on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree) to the following three statements: “Personal attention by a service employee is important to me”, “It bothers me to use a machine when I could talk to a person instead” and “Personal contact with an employee makes ordering food enjoyable for me”. These questions were previously used

in a study by Meuter et al. (2005). The responses were then combined into a multiitem index. The three questions were combined to an index NFI for the analysis (Chronbach's $\alpha = 0.92$).

3.4.2. Pre-study

To ensure both the viability of the questionnaire and the legibility of the scenario, a pre-study was conducted. This was in line with what Bell et al. (2022) argue as important, especially for studies containing a self-reporting questionnaire. The pre-study was distributed to a limited number of selected respondents (N=30) who had limited knowledge about the purpose of the study. Beyond receiving the intended standard questionnaire, they were also asked to evaluate the overall questionnaire and written scenario in terms of language (comprehension, flow, length, realism), form (question order, if they felt biased) and any other suggestions they may have (see appendix A for the full pre-study).

After conducting the pre-study and receiving feedback from the respondents several changes were implemented. Firstly, a Swedish version of both the scenario and questionnaire was created. This change was made to increase the potential number of responses to the survey, since the study would mainly be distributed to a Swedish-speaking audience that could be deterred from completing the survey in their non-native language. The English version of the study was kept allowing for English-speaking respondents, and an option to choose language in the beginning of the survey was created. Secondly, upon receiving feedback regarding the scenario, minor changes were made regarding choice of words and details to improve realism. Lastly, the order of questions was modified slightly to reduce any potential priming, namely the questions regarding the respondents' gender, age and whether they live in Sweden were moved to the end of the survey.

3.4.3. Scenario and questionnaire

The scenario narrative stated that a person, together with their friend, visited a restaurant in Stockholm that was a bit more expensive than the restaurants this person usually goes to. Two scenarios of this narrative were created to mirror the two conceptual outcomes in the hypotheses regarding mere presence in a restaurant setting: (1) the person and their friend ordered their dinner from waiting staff, i.e., a person (control group), and (2) the person and their friend ordered their food via scanning a QR code on their phones (treatment group). No waiting staff was present in the latter scenario. The former scenario is considered the control group since fine dining, in general, is associated with having waiting staff and a traditional menu. Having a control group enhances internal validity of the findings since it eliminates rival explanations (Bell et al., 2022).

We employed an open-ended item at the end of the questionnaire (“Please summarise what you believe this survey aimed to study”) to be able to assess the extent of hypotheses guessing. Many participants that received the scenario with the QR code guessed that the study had something to do with absence of waiting staff or attitudes toward QR codes, however no participant correctly identified the research question. We also included questions where the participant was to rate the perceived realism and authenticity of the scenario which worked as a quality check of our constructed scenario.

An outline of the survey flow is visualised below (complete survey in appendix B):

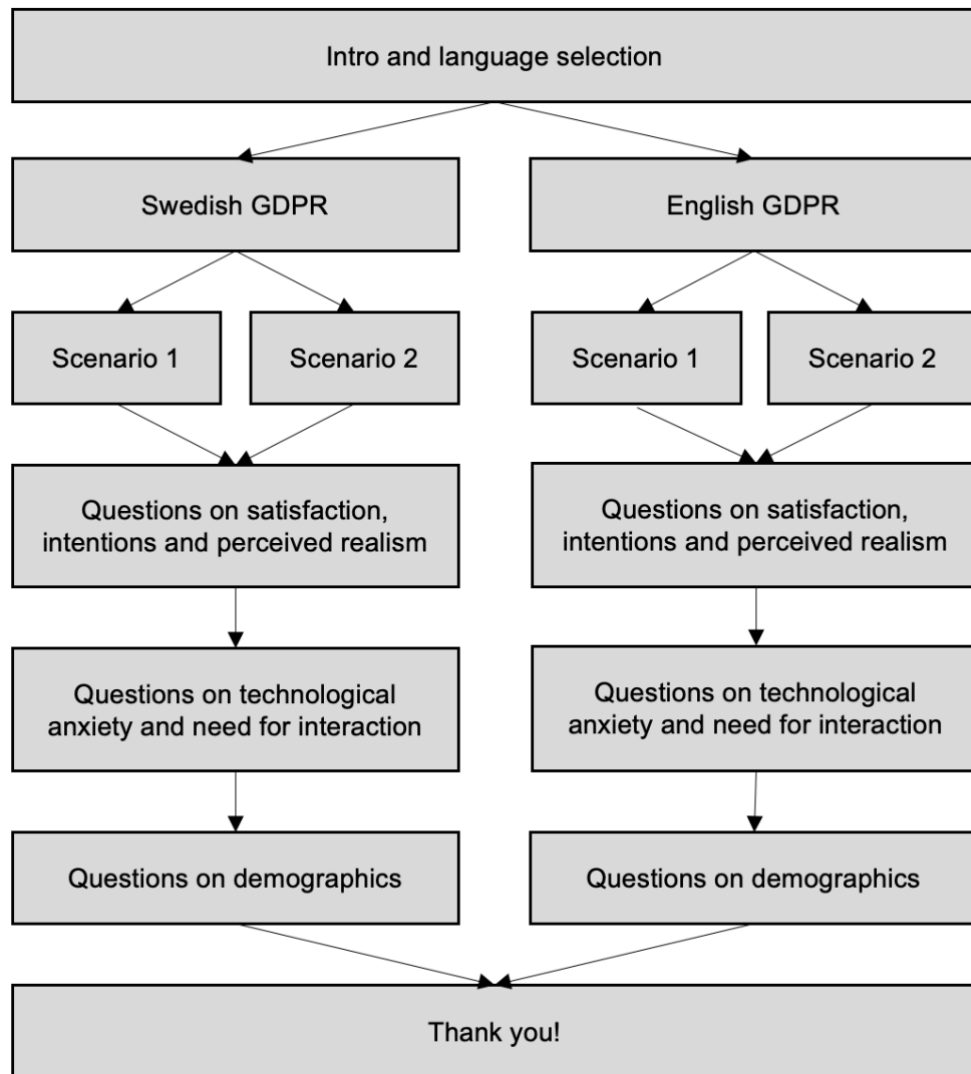


Figure 1: Questionnaire flow.

3.4.4. Data Collection

The data was collected from the digital questionnaire in Qualtrics that was distributed on social media (Facebook and Instagram) to our network consisting of fellow students,

friends, family, and other acquaintances, thus being a convenience sample. This method of sampling was chosen out of necessity due to the constrained nature of a Bachelor thesis. The posts were shared three times, which consequently increased the variety of potential respondents.

In total we collected 270 responses. After filtering out invalid responses we had 163 responses for the two scenarios combined. In the traditional scenario the mean age was 43 years (range: 18-71) and in the QR code scenario the mean age was 41 (range: 20-71).

Among the responses that we could use, in total 61 men and 101 women responded to the questionnaire. One preferred not to say. In the traditional scenario the distribution was 26 males and 52 females. For the QR code scenario the distribution was 35 males, 49 females and one preferred not to say.

The demographic factors of age and gender are summarised in table 1:

Table 1. Age and gender distribution of respondents

Respondent group	Traditional n=78	QR n=85	Total n=163
Age (years)			
Min	18	20	18
Mean	43	41	42
Median	43.5	42	42
Max	71	71	71
Gender			
Male	26	35	61
Female	52	49	101
Non-binary/other	-	-	-
Prefer not to say	-	1	1

In total we had two respondents living outside of Sweden, but as this number is too low for us to receive significant findings, we exclude it from our analysis.

3.4.5. Incomplete Responses

The survey was open to the public between the 3rd of November to the 10th of November, and during that period a total of 270 people clicked the link. As illustrated in figure 2, two people were excluded due to non-compliance with GDPR, and 77 respondents did not fully complete the questionnaire. Among those who did not complete the questionnaire, there were 30 respondents who either did not proceed beyond the scenario or did not answer any questions following the scenario, indicating that they either did not want to read the scenario, or did not read the scenario carefully and could not answer. Since the

option to return to the scenario and read it again was not available to the respondents (to avoid priming and changing opinions) these respondents may have elected to close the survey at that point. Furthermore, of the 191 remaining responses, 28 respondents did not correctly answer either the control or attention question. Thus, the final data set contains 163 total responses that were deemed viable to analyse.

The final data set was also checked for the total time of completion, but no responses were considered for removal (no one below three minutes). The likely scenario being that those had already been filtered out, namely in control (manipulation check) or attention check.

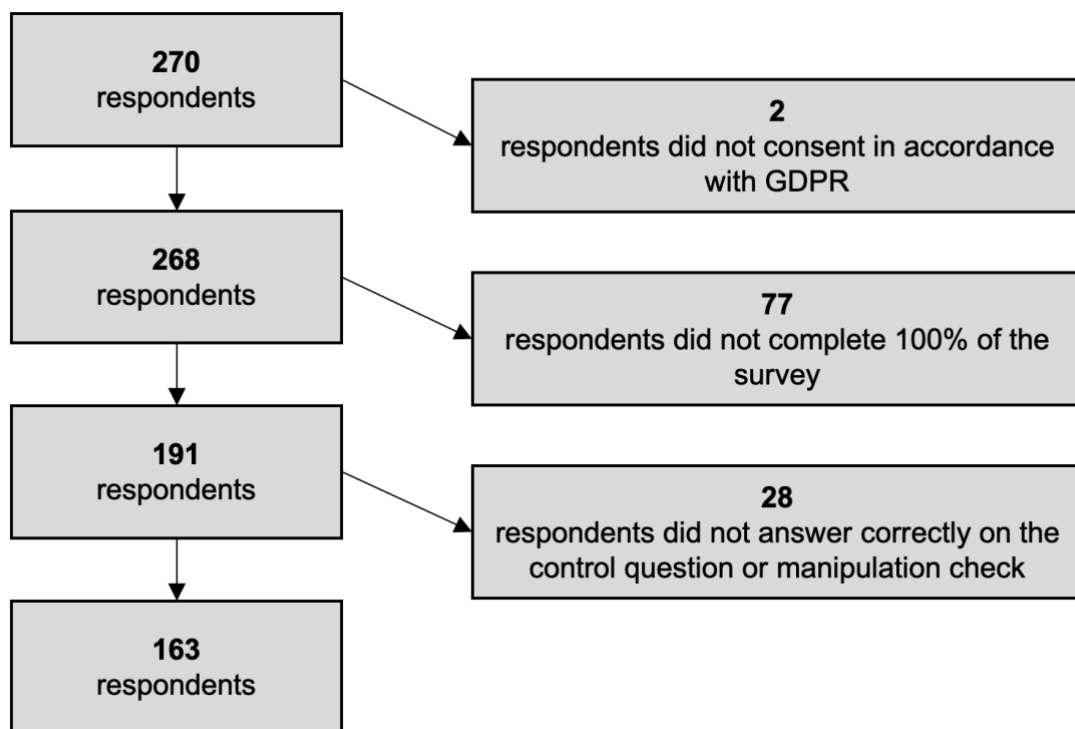


Figure 2: Illustration of questionnaire drop-out.

3.4.6. Processing and Analysis of Data

The data was processed in accordance with GDPR using Microsoft Excel, and R Studios was used for conducting the statistical analyses. In Excel we filtered out incomplete responses or if the response was invalid for any other reason stated in the flow chart above. The data was then imported to R and analysed via the following tests and analysis tools.

Before conducting any analysis and data processing, we wish to highlight a potential issue with type of data that was collected. As previously described in section 3.4.1 “Variables”,

the data for each variable in the questionnaire is gathered through a seven-point Likert scale, and then combined into a multiitem index. Following this procedure, the data gathered is in a strict sense ordinal, even though the answers are converted into numerical values and combined into a multiitem index. This is because it cannot be guaranteed that the difference between each scale point is equal (e.g., the difference between scale point 1-2 and scale point 5-6 cannot be guaranteed to be the same). An ordinal scale of answers would restrict us from conducting several key statistical calculations, including mean.

This issue has been debated in the scientific community for some time, with the seeming conclusion that assuming the Likert-scale observations and indexes as interval does not result in any statistically significant difference in results (Carifio & Perla, 2008; Norman, 2010). We have in this thesis decided to follow that conclusion, as well as following the practice of previous studies measuring the same variables that we have. Nevertheless, we recognise that this is still being debated, and there may still be some statistical difference in results. As such we have decided to conduct different tests that both treat the data as ordinal and as interval where applicable, which will be discussed further in the description of these tests.

Jarque-Bera test

Prior to any hypothesis testing and additional testing, the data was analysed and examined to determine which types of tests would be appropriate to apply. To determine normality of our data, a Jarque-Bera (JB) test was conducted using R Studios.

Mean testing

In case of normality of the data from the JB-test, one condition for conducting a t-test to test the hypothesis that the independent variable *mere presence* would have a negative impact on the dependent variable *satisfaction* (hypothesis 1). If the conclusion instead was that the data could not be deemed normally distributed, a z-test would be the more appropriate test to conduct provided that the data fulfils the conditions for the central limit theorem.

Correlation testing

Furthermore, the normality of the data is also a condition to take into consideration when choosing a test statistic to determine correlation between variables. In the case of normality, and due to the previously discussed assumption of interval data, a Pearson's *r* test was used. Furthermore, a Spearman test was also conducted in the cases where normality could not be determined.

To test for multicollinearity of the data, a variance inflation factor (VIF) test was conducted in R for the variables that were used in a regression.

Moderation Testing

The moderation effect of the TA and NFI variables (hypotheses 2 and 3) was tested using Hayes “model 3” (Hayes, 2022). This model uses bootstrapping to test two individual moderators, as well as all 2-way and 3-way interactions (see figure 3). Model 3 was chosen since it allows us to observe any potential interaction between the moderating factors, as well as observe any direct moderating effect on the relationship between the independent and dependent variable.

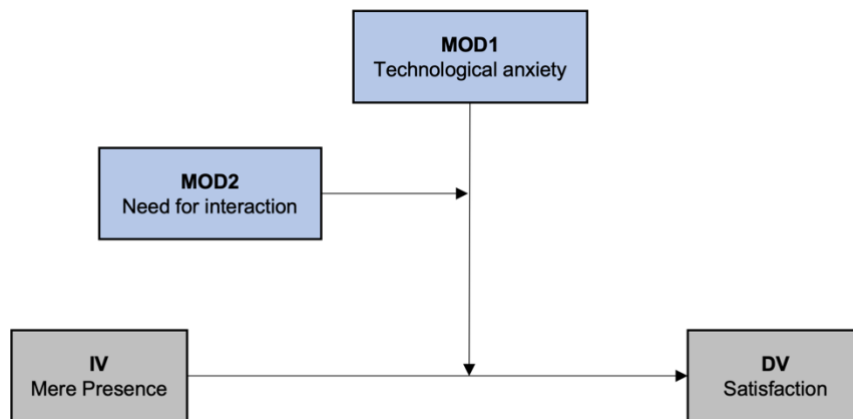


Figure 3: Hayes Process Model 3.

Additional testing

Additional testing was conducted on the variables TA and NFI. These tests were not a part of any hypothesis, but instead were tests to further examine the properties of these variables, and their relationship with the dependent variable *satisfaction*. A linear regression was conducted between the two variables (both individually and combined) and customer satisfaction. These tests were made within the two different scenarios to observe if there exists a correlation depending on the different treatments the respondents had received.

The claim from previous research, that gender has an impact on TA, namely that women exhibit higher levels of the variable, was tested using a z-test and a t-test to observe any difference in means between genders. To investigate the claim that older people exhibit higher levels of the two moderating variables, both a correlation test using Pearson’s r , and a linear regression with age as the independent variable and the two other variables as dependent, was conducted.

4. Results

In the results section we will first present how the respondents evaluated their assigned scenario in terms of realism and authenticity. Second, we will present tests for our hypotheses and additional testing. The section is concluded by a summary of findings.

4.1. Manipulation Check

For the manipulation check, respondents were asked to state whether their scenario involved waiting staff or a QR code. Those who did not enter scenario which they had received were filtered out. As 97% of all respondents who completed the survey could distinguish between the treatment and non-treatment, we contended that the manipulation was successful. This outcome also illustrated that individuals are sensitive to whether there is presence of a human being or not in a social setting.

Before presenting the results of our study, we want to emphasise that a general issue when exposing respondents to a fictive scenario in a questionnaire setting is that they might perceive the stimuli and underlying scenario to be unrealistic (as discussed in section 3.1 “Chosen Method”). To investigate this, we added two questions where respondents were to evaluate the scenario depicting the restaurant visit. The results of the combined average of these questions are presented in the table 2 below.

Table 2: Evaluation score of scenarios

	Total N = 163	Traditional N = 78	QR code N = 85
Minimum	2.00	3.00	2.00
Mean	6.01	6.17	5.87
Standard deviation	0.96	0.92	0.97
Median	6.00	6.00	6.00
Maximum	7.00	7.00	7.00

The boxplot in figure 4 shows an average of how the respondents rated the realism and authenticity of their respective scenario as well as the results for all the respondents combined.

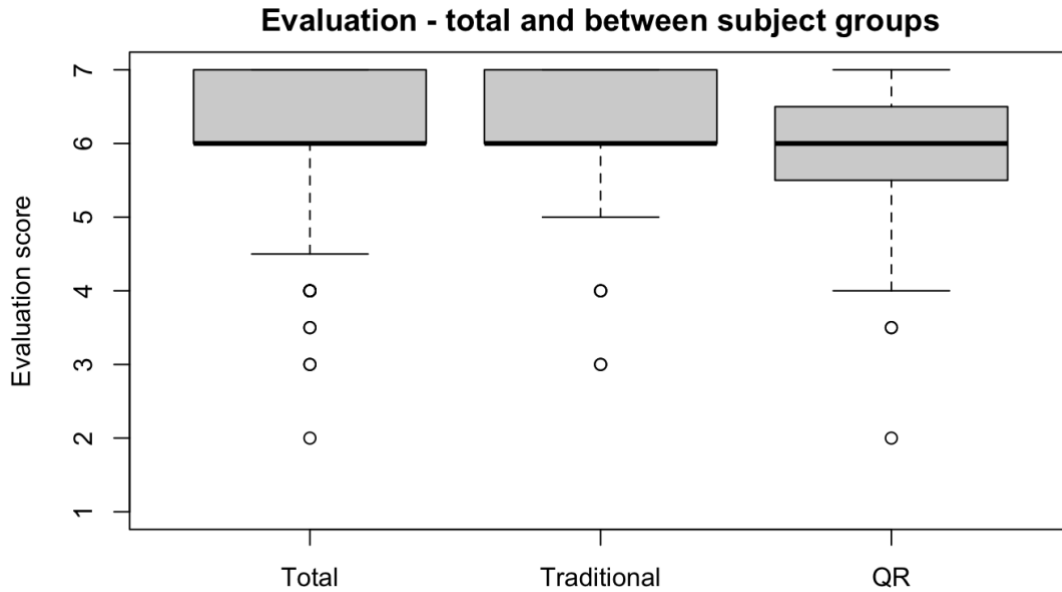


Figure 4: Boxplots of Evaluation score, total and between subject groups

As for both the scenarios as well as them combined, 50% of the respondents rated it between 6 and 7, where 7 being the maximum value of the evaluation score, we deem that the participants rated the scenarios as both realistic and authentic. For the traditional scenario the lowest score was 3 whereas in the QR code scenario the lowest score was 2. Both scenarios had outliers at the lower end of the evaluation score scale.

Beyond this, a t-test was conducted to determine if there was a difference in mean evaluation score between the two scenario groups. The results from the t-test show that there is, at a 95% confidence level, a difference in the means ($p\text{-value} = 0.047$, $t=1.99$). This result indicates that the respondents rated the traditional scenario higher in authenticity and realism, which is not surprising considering that the QR code scenario is a relatively new concept and might seem unfamiliar and thus not realistic.

4.2. Observed Results

The data in table 3 illustrates mean response, standard deviation, and results from the z-tests conducted to determine if there were any difference in mean between the two subject groups regarding satisfaction (H1), TA and NFI. In appendix C the results for t-tests can be found. Furthermore, the variables “intention to revisit” and “intention to recommend” were also included. When comparing the results we observe only a miniscule difference, suggesting that a t-test most likely would also be appropriate to use even though the variables are ordinal and not normally distributed.

Table 3. Properties and difference in mean between variables in the subject groups

Respondent group	Traditional n=78		QR n=85		p	z
	Mean	SD	Mean	SD		
Perceptions of restaurant visit						
Satisfaction	5.97	0.83	4.27	1.63	<0.001*	8.46
TA	3.65	1.51	3.42	1.77	0.362	0.91
NFI	4.87	1.62	4.72	1.93	0.590	0.54
Intention to revisit	5.87	1.20	4.24	1.91	<0.001*	6.60
Intention to recommend	5.83	1.11	4.17	1.84	<0.001*	7.08

Note: Means at $p < .05$ are significant and marked with a *.

Given that each variable, apart for intention to recommend/revisit, is a multiitem index comprised of variables that are on a seven-point Likert scale, minimum and maximum values are not included in the table. These values would perhaps be of more interest if there was a larger spread of values and if they were self-selected by the respondents (e.g., a sliding scale from 0-100). As observed, there is a statistically significant difference in mean satisfaction (p -value <0.001) between the respondents who were subjected to the QR scenario (mean = 5.97) compared to the traditional scenario (mean = 4.27).

The two variables, “intention to revisit” and “intention to recommend” measure the respondents’ intentions after the restaurant visit. These two variables act as a reliability measure for the satisfaction variable, as a truly satisfied customer is more likely to both revisit and recommend the restaurant to others. The correlation between customer satisfaction and these two variables is examined further below. What can be observed from the means is that there is a clear, statistically significant, difference in means between the two scenarios for the variables. The intention to revisit/recommend is higher in the traditional scenario compared to the QR scenario.

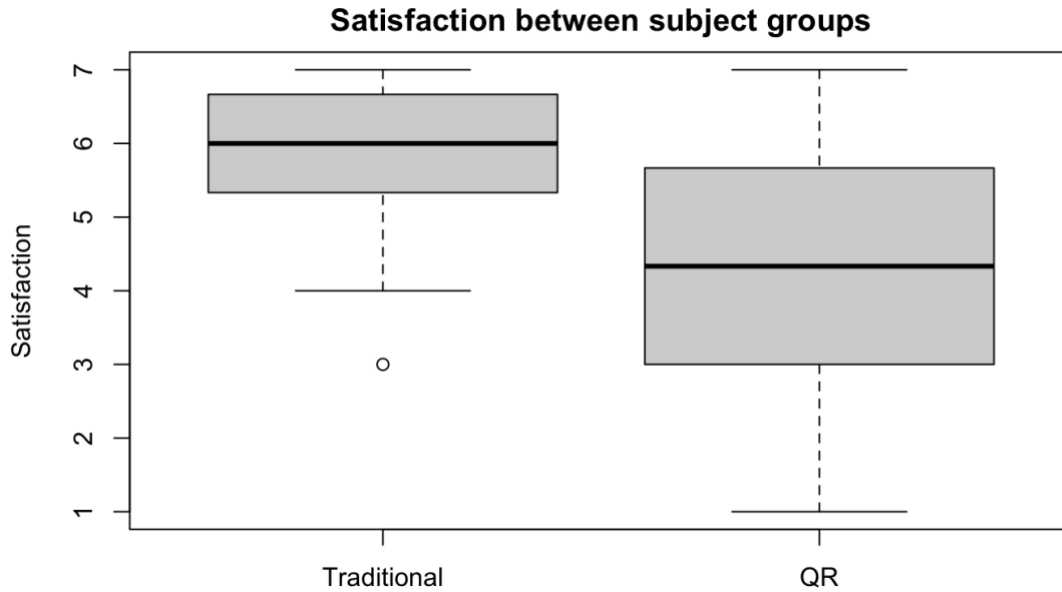


Figure 5: Satisfaction between subject groups.

The maximum level of satisfaction is 7 for both respondent groups whereas the minimum level is lower in the QR code scenario compared to the traditional scenario. In the traditional scenario the lowest level of satisfaction in the boxplot (figure 5) is 4, and there is an outlier at 3. The lowest level of satisfaction in the QR code scenario is 1.

The respondents in the QR code scenario reported a lower median score than the respondents of the traditional scenario. In the traditional scenario a higher share of the respondents reported a higher score of satisfaction than those in the QR code scenario. Nearly 100% of the respondents in the traditional scenario reported a satisfaction score of 4 or above on the seven-point scale whereas in the QR code scenario only 50% of the respondents reported a satisfaction score of 4 or above.

The correlation between mere presence (0 = no presence, 1= presence of waiting staff) and satisfaction is 0.55 using Spearman and 0.54 using Pearson's r . Thus, as expected, when there is mere presence, satisfaction is increased.

Thus, there is support for hypothesis H1.

Furthermore, as expected there is no significant difference in mean for the variables TA (3.65 for the traditional scenario and 3.42 for the QR scenario) or NFI (4.87 for the traditional scenario and 4.72 for the QR scenario) among the two groups (p -value = 0.363 and 0.590 respectively). Below boxplots comparing TA (figure 6) and NFI (figure 7) between the subject groups are shown.

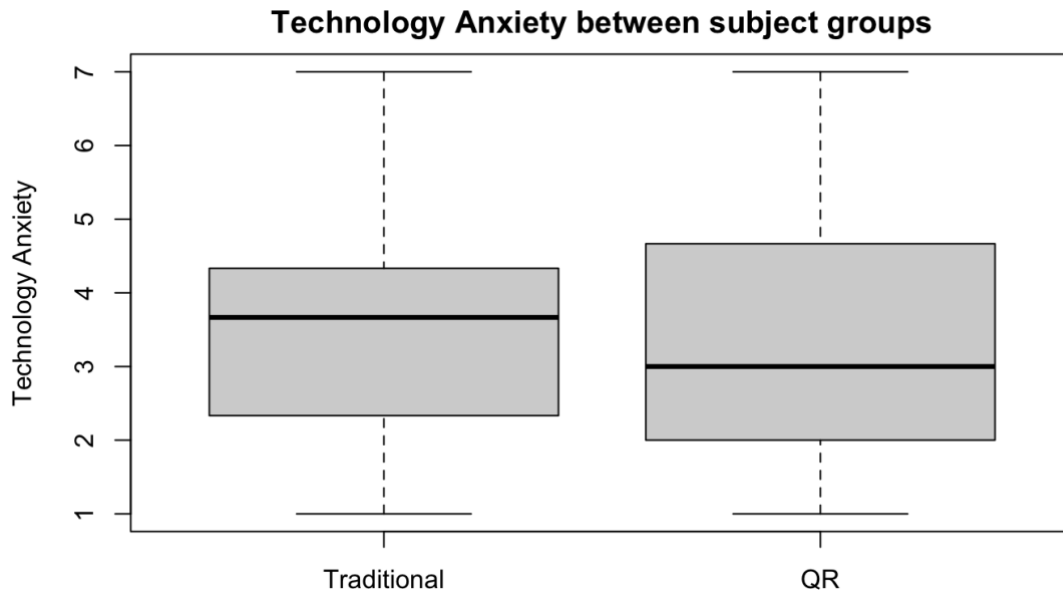


Figure 6: TA between subject groups.

The maximum and minimum level of TA are the same for both scenarios, 7 and 1 respectively. The respondents in the QR code scenario reported a lower median score than the respondents of the traditional scenario. In the traditional scenario a higher share of the respondents reported a higher score of TA than those in the QR code scenario.

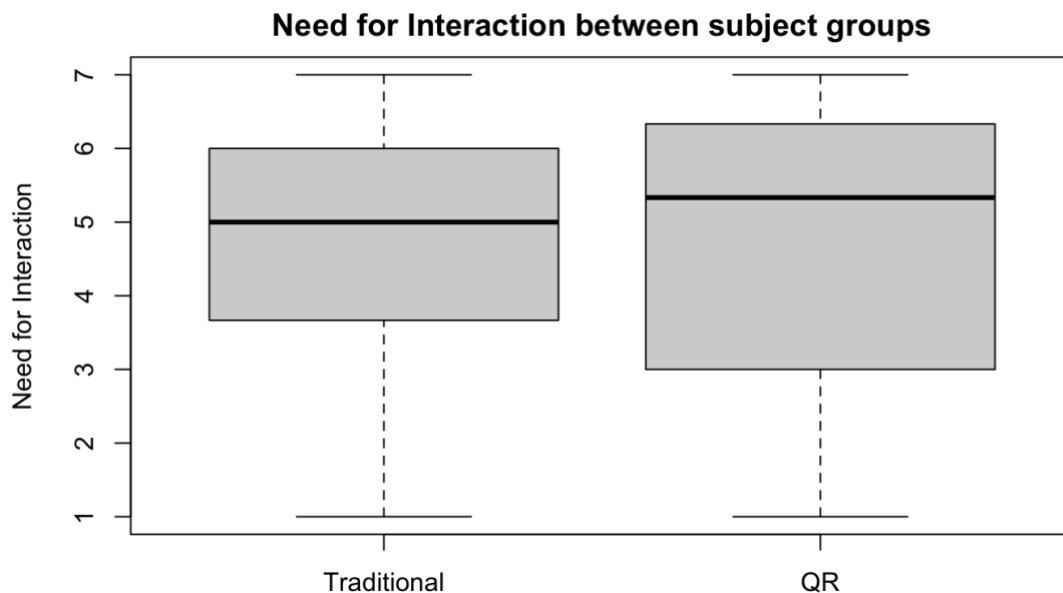


Figure 7: NFI between subject groups.

The maximum and minimum level of NFI is the same for both scenarios, 7 and 1 respectively. The respondents in the QR code scenario reported a higher median score than the respondents of the traditional scenario. In the QR code scenario a higher share of the respondents reported a higher score of NFI than those in the traditional scenario.

Table 4. Correlation matrix of observed variables

	1	2	3	4
Panel 1: Presence of waiting staff and absence of QR code (Traditional scenario)				
1 Cust. satisfaction				
2 TA	0.09			
3 NFI	0.06	0.63*		
4 Revisit	0.74*	0.18	0.10	
5 Recommend	0.71*	0.16	0.16	0.78*
Panel 2: Presence of QR code and Absence of waiting staff (QR scenario)				
1 Cust. satisfaction				
2 TA	-0.57*			
3 NFI	-0.59*	0.80*		
4 Revisit	0.89*	-0.50*	-0.52*	
5 Recommend	0.90*	-0.49*	-0.51*	0.94*

Note: Values at $p < .05$ are significant and marked with a *.

A correlation matrix (Table 4) was also constructed to properly observe the relationship between the variables measured. In both scenarios, customer satisfaction is positively and statistically significant correlated with the two variables “intention to revisit” and “recommend”. This relationship indicates a higher reliability for the customer satisfaction variable. Furthermore, we can observe a disparity between the two scenarios regarding the correlation between customer satisfaction and the two variables TA and NFI. In the QR scenario there is a significant negative relationship, while that correlation is not significant or present in the traditional scenario.

To test whether TA and NFI are moderating the relationship between mere presence and satisfaction a Preacher Hayes Process Model 3 analysis are conducted. After running the process model in R, the results in table 5 were obtained. The adjusted R^2 is 0.51 and the p-value is <0.001 for the model (for more properties of the model and bootstrapping results, see appendix D).

Table 5. Hayes Process Model 3

Model	coeff	se(HC4)	t	p
Mere presence	-1.79	0.21	-8.61	0.000*
TA	0.37	0.22	1.70	0.091
Mere presence x TA	-0.31	0.16	-1.95	0.053
NFI	0.30	0.20	1.52	0.132
Mere presence x NFI	-0.31	0.15	2.00	0.048*
TA x NFI	-0.04	0.11	-0.37	0.713
Mere presence x TA x NFI	0.03	0.07	0.37	0.714

Note: Values at $p < .05$ are significant and marked with a *.

Mere presence = IV

TA = Moderator 1 (MOD1)

NFI = Moderator 2 (MOD2)

From the model output we can see that *mere presence* and the interaction between mere presence and NFI (moderator 2) are statistically significant variables since the p-values are <0.001 and 0.048 , respectively. We can also see that the difference in p-value between the interaction term including TA (moderator 1) and the interaction term including NFI (moderator 2) is small, and that consequently, TA is close to being significant for the model ($p = 0.053$). The combined effect of the moderating variables has a rather high p-value (0.71). This may be since TA and NFI are possibly correlated. This will be tested in additional testing.

Since the interaction term *mere presence x NFI* is statistically significant at a 95% confidence level, we conclude that **there is support for hypothesis H3**. Since there is no statistical significance at a 95% confidence level for the mere presence x TA interaction term, we can conclude that **there is no support for hypothesis H2**.

4.3. Additional Analysis

In the following section additional analysis beyond our hypotheses are presented. TA and NFI in relation to age are investigated for us to compare our result with those of prior research.

4.3.1. TA, NFI, and satisfaction

To investigate the effect of both TA and NFI in the respective scenarios the following linear regression model was constructed (eq. 1). Satisfaction is the dependent variable whereas TA and NFI are independent variables. β_1 and β_2 are the respective coefficients for TA and NFI, β_0 is the intercept and e is the error term.

$$Satisfaction = \beta_0 + \beta_1 * TA + \beta_2 * NFI + e \quad (1)$$

From the results (see appendix E) we note that no variables are significant at a 95% confidence level in the traditional scenario, and neither is the model itself. In the QR code scenario, only NFI is a significant variable (p-value = 0.01) whereas TA is not significant (p-value = 0.09) at a 95% confidence level. We suspect that the variables correlate and when running a VIF test we receive the value of 1.66 and 2.82 for the traditional scenario and the QR code scenario, respectively. Since we therefore have a problem of multicollinearity, we examined the variables one at the time.

4.3.2. TA and satisfaction

To investigate how satisfaction and TA are related, the following linear regression model (eq. 2) was constructed for the respective scenarios. Satisfaction being the dependent variable and TA being the independent variable. β_1 is the coefficient, β_0 is the intercept and e is the error term.

$$\text{Satisfaction} = \beta_0 + \beta_1 * TA + e \quad (2)$$

In figure 8 TA is plotted in relation to satisfaction for both the traditional scenario and for the QR code scenario.

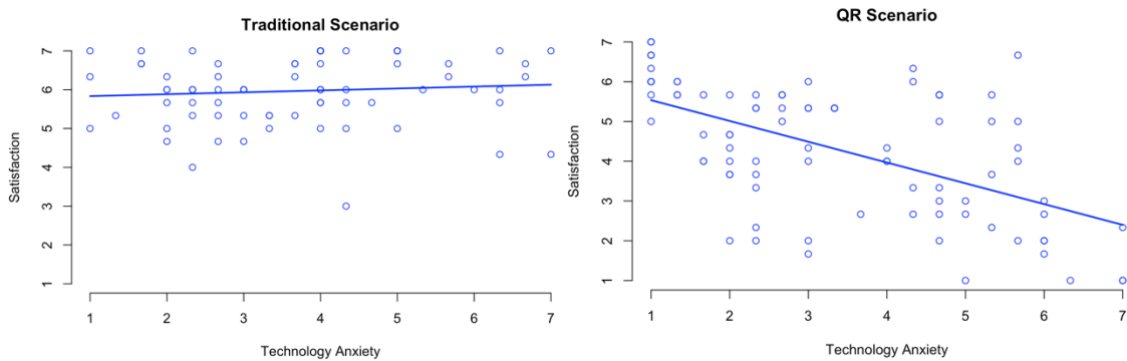


Figure 8: Scatterplot with a linear estimate for TA and satisfaction. Responses in the traditional scenario (to the left) and in the QR code scenario (to the right).

After running the regression in R, we find that the relationship between TA and satisfaction is statistically significant for the QR code scenario ($p < 0.001$). The estimate has a magnitude of -0.52 and the standard deviation is 0.08. For the traditional scenario, the relationship between satisfaction and TA was not statistically significant at a 95% confidence level ($p = 0.43$). The adjusted R^2 for the model is 0.31, meaning that the model has 31% explanatory power over the relationship between NFI and satisfaction in the scenario. The correlation between satisfaction and NFI is -0.56 using Spearman and -0.57 using Pearson's r . For more data, see appendix F.

4.3.3. NFI and satisfaction

To investigate how satisfaction and NFI are related, the following linear regression model (eq. 3) was constructed for the respective scenarios. Satisfaction being the dependent variable and NFI being the independent variable. β_1 is the coefficient, β_0 is the intercept and e is the error term.

$$Satisfaction = \beta_0 + \beta_1 * NFI + e \quad (3)$$

In figure 9, NFI is plotted in relation to satisfaction for both the traditional scenario and for the QR code scenario.

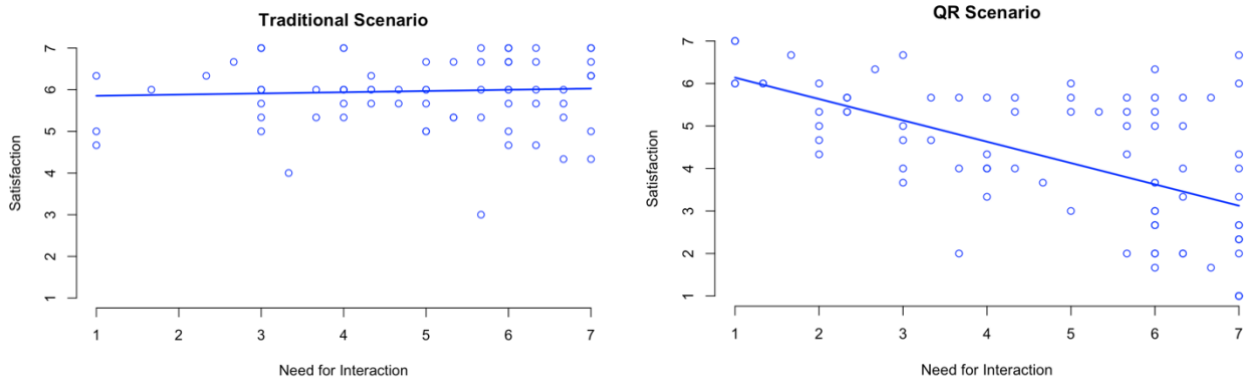


Figure 9: Scatterplot with a linear estimate for NFI and satisfaction. Responses in the traditional scenario (to the left) and in the QR code scenario (to the right).

After running the regression in R, we find that the relationship between NFI and satisfaction is statistically significant for the QR code scenario ($p < 0.001$). The estimate has a magnitude of -0.50 and the standard deviation is 0.07. For the traditional scenario, the relationship between satisfaction and NFI was not statistically significant at a 95% confidence interval ($p = 0.62$). The adjusted R^2 for the model is 0.35, meaning that the model has 35% explanatory power over the relationship between NFI and satisfaction in the scenario. The correlation between satisfaction and NFI is -0.58 using Spearman and -0.59 using Pearson's r . For more data, see table in appendix G.

4.3.4. TA and age

To investigate how TA and age are related, the following linear regression model (eq. 4) was constructed for the total respondents, as there was no significant difference in mean depending on the scenario. TA being the dependent variable and *age* being the independent variable. β_1 is the coefficient, β_0 is the intercept and e is the error term.

$$TA = \beta_0 + \beta_1 * age + e \quad (4)$$

From figure 10 below we can see that TA increases with age. The correlation between age and TA was investigated using Spearman (0.21) and Pearson's r (0.22). Thus, the variables are weakly positively related.

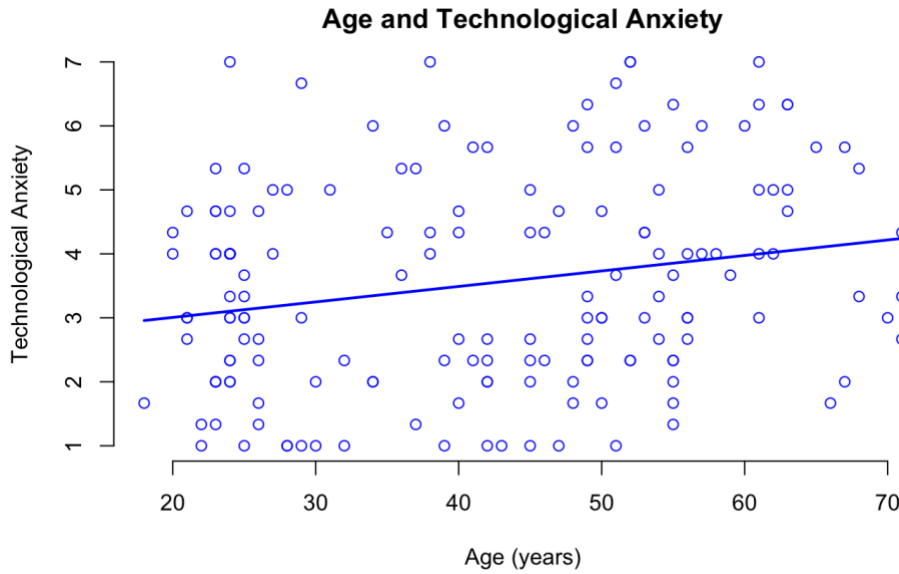


Figure 10: Scatterplot with a linear estimate for age and TA.

After running the regression in R, we find that the relationship between age and TA is statistically significant ($p = 0.01$). The estimate is 0.02 and the standard deviation is 0.01. For more data, see table in appendix H.

4.3.5. NFI and age

To investigate how NFI and age are related, the following linear regression model (eq. 5) was constructed for the total respondents, as there was no significant difference in mean depending on the scenario. NFI being the dependent variable and *age* being the independent variable. β_1 is the coefficient, β_0 is the intercept and e is the error term.

$$NFI = \beta_0 + \beta_1 * age + e \quad (5)$$

From figure 11 below we can see that NFI increases with age. The correlation between age and NFI was investigated using Spearman (0.30) and Pearson's r (0.30). Thus, the variables are weakly positively related.

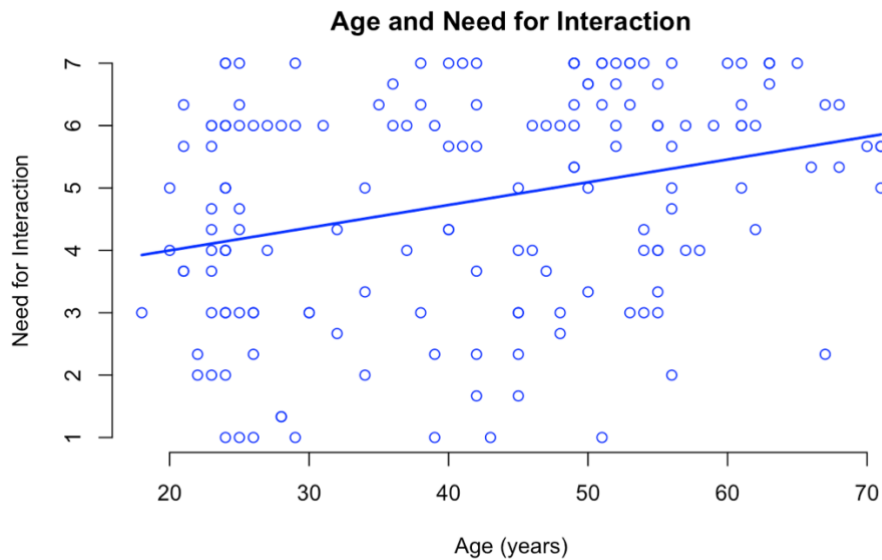


Figure 11: Scatterplot with a linear estimate for age and NFI.

After running the regression in R, we find that the relationship between age and NFI is statistically significant ($p < 0.001$). The estimate is 0.04 and the standard deviation is 0.01. For more data, see table in appendix I.

4.3.6. TA and Gender

Our results show that there is no significant difference ($p = 0.27$) in mean TA between men (mean = 3.72) and women (mean = 3.41) when conducting a z-test. The results for a t-test were similar where the mean TA for men and women were 3.72 and 3.42 respectively with a p-value of 0.27.

4.4. Summary of findings

The findings of this section are summarised below.

Table 5: Summary of hypothesis testing

H1	No presence of a waiting staff results in lower customer satisfaction compared to a mere presence scenario	Supported
H2	TA is moderating the relationship between mere presence and satisfaction.	Not supported

H3	NFI is moderating the relationship between mere presence and satisfaction.	Supported
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Note: $p < .05$ is significant.

In the additional testing, we find that neither TA nor NFI significantly correlates with satisfaction in the traditional scenario. The opposite is true for the QR scenario, where both variables correlate negatively with satisfaction. We also found that both TA and NFI positively correlates with age, whereas there does not seem to be a difference in mean TA based on gender.

5. Discussion

The following section will cover the implications of the observed results of the hypotheses as well as the additional testing done in section 4. Furthermore, limitations of this study will be discussed as well as suggestions for future research.

5.1. Discussion of Results

5.1.1. Discussion of hypothesis testing

H1: The Relationship Between Mere Presence and Satisfaction

When conducting the z-test to determine if there is a difference in mean, we can conclude at a 95% significant level that there indeed is a difference in mean satisfaction between the two scenarios. Further correlation testing shows that the mean satisfaction for the respondent group who received the traditional scenario is higher compared to the mean satisfaction of respondents reading the QR code scenario. These results support hypothesis H1. Furthermore, the results are also in line with previous studies on mere presence such as Söderlund (2016)'s that were referenced in the section 2.1 "Employee Mere Presence". The positive effect on customer satisfaction that mere presence of an employee has seems to be applicable in a restaurant setting as well.

As noted in figure 5 (in section 4.2 "Observed Results") the satisfaction reported by the respondents in the QR code range from 1 to 7, with no satisfaction score being an outlier. This indicates that QR codes are an opinion divider in a fine dining restaurant setting. While this is a purely quantitative analysis, it is still worth mentioning that we had voluntary open-ended commentary questions, one of them being "what is your overall impression of this restaurant visit". The same polarisation in the QR code scenario can also be observed in selected comments in the table 6 below:

Table 6: Selected comments toward digitalisation in fine dining restaurants.

Positive comments toward digitalisation in fine dining restaurants	Negative comments toward digitalisation in fine dining restaurants
I love machines so I can order at my own pace and like to see pictures of the food.	Recently been to a restaurant where we could only order an app, ... it felt more like a visit to a hamburger restaurant. We couldn't ask about the menu or the contents. Sadly, that choice will be dropped for next time.

I like the convenience of not having to call staff and being able to quickly place my order myself.	Meeting restaurant staff is a must in order to get the right information about the food and drink.
It can be incredibly convenient to "avoid" personal contact.	During a visit to a restaurant, you want to talk to a server, there are always questions.

Some respondents dislike the digital experience to the point that they say that they so not revisit restaurants that uses SST, others simply want to order at their own pace. What seem to be the missing factor for many respondents that do not enjoy the digital experience, are that the visit is not experienced as something extra and that they cannot get their questions answered nor get any recommendations. There could also be an element of respondents feeling forced to use a QR code, creating a reduced perception of freedom and choice, as mentioned by Reinders et al. (2015) in section 2.2.1 “Self-Service Technology from a Consumer Perspective”.

The respondents that seem to be enjoying the experience on the other hand, appreciate that they do not need to interact nor get a “lecture about the origins of the ingredients and the entire process”. These respondents may also feel an increased sense of ownership of their experience, leading to higher levels of satisfaction (Reinders et al., 2015).

H2 & H3: TA and NFI as Moderators

We concluded that TA is not a statistically significant moderator for the relationship between mere presence and satisfaction. This means that TA is not significantly altering the relationship between mere presence and satisfaction, even though (as noted in section 4.2 “Observed results”) it was close to being significant. We also concluded that NFI is a statistically significant moderator for the relationship between mere presence and satisfaction. The moderating effect is -0.31, thus the relationship between mere presence and satisfaction is altered weakly, negatively when NFI increases.

Prior research suggested that TA and NFI would moderate the relationship between mere presence and satisfaction negatively in a digital setting. Our results only support NFI to be a moderator. We found no prior research on whether TA and NFI would moderate the relationship in a traditional setting. We speculate that a person with high TA and NFI would appreciate a scenario where no self-service was involved. However, since the coefficient is negative, we deem this potential small positive moderation in the traditional scenario to be eliminated by the effect TA and NFI has on the relationship in the QR code scenario.

5.1.2. Discussion of additional testing

TA

From the results we see that TA is not statistically significant nor correlated to satisfaction in the traditional scenario whereas TA is both statistically significant negatively correlated (-0.52) to satisfaction in the QR code scenario.

We also see a significant, positive correlation between TA and age, this is in line with prior research (Lee, H. et al., 2010). We did not see a statistically significant difference in the mean of TA between men and women. Thus, this supports prior research from Dabholkar, Prathiba A. & Bagozzi (2002) suggesting that demographic factors are of less significance in today's changed social world.

NFI

From the results we see that NFI is not statistically significant nor correlated to satisfaction in the traditional scenario whereas NFI is both statistically significant negatively correlated (-0.50) to satisfaction in the QR code scenario.

We also see a significant, positive correlation between NFI and age, this is in line with prior research (Lee, H. et al., 2010).

5.2. Implications of Results

The results imply that restaurant owners should employ caution when implementing QR codes for ordering in their business. Customers seem to value the presence of waiting staff, and the replacement of waiting staff with digital solutions will negatively affect the satisfaction of customers. Further research should be made to determine how this lower satisfaction might affect end profits for owners, but nevertheless one could reasonably conclude that lower customer satisfaction is not a desirable outcome for restaurant owners. However, if implemented, restaurants should work to mitigate the sense of customers being forced to use a foreign technology, by providing a helping hand during the ordering process if needed.

Furthermore, while the moderation testing resulted in mixed conclusions regarding the effect of TA and NFI as moderators, our additional testing found that there indeed exists a negative relationship between these factors and satisfaction in the QR code scenario. This implies that restaurant owners should be aware that if their customers exhibit TA or NFI, they will be less satisfied with a restaurant experience where technology is central and the only way to order food. A problem that naturally then follows is that TA and NFI are traits which are not easily detectible by owners, and thus gauging them at a distance is difficult. What the correlation between age and the two traits individuals might have shows us is that age can act as a proxy to estimate the levels of these factors amongst a

restaurant's customers base. Owners can much more easily determine the age of their customers, and through that determine their anticipated TA and NFI. By extension this allows owners to approximate what effects an implementation of QR codes as a replacement for regular waiting staff might have on the customer satisfaction in their restaurant.

5.3. Limitations

As with any study, we recognise that there are some limitations to the results and interpretations of this thesis. In the interest of giving possible future research topics, as well as a basis for constructive criticism, we as authors would like to highlight some of these limitations.

A shortcoming of this study is how the independent variable is constructed, and the effects this has on the ability to conduct statistical analysis. Since the *mere presence* variable is dichotomous instead of continuous, and one of the scenarios involves “no treatment”, the effects of moderators become somewhat obscured. This is reflected in the results, since the additional testing shows a strong negative correlation between both posed moderators and the satisfaction variable when only looking at the QR code scenario, but no moderating effect is shown when looking at the entire model.

Moreover, there is an inherent limitation in the way data was collected. The link to the survey was distributed on social media to our friends and acquaintances, resulting in a convenience sample that could bring with it biases and lack of proper representation (Bell et al., 2022). To mitigate these negative aspects, we asked close friends and family to share the link to co-workers and friends as well. In theory this would hopefully reduce the level bias in the sample as well as improve representation. Still, it is important to highlight the potential lack of e.g., socioeconomic representation even with the attempts at broadening the data collection. The data is still believed to contain an overrepresentation of people who are studying, or have completed, at least a tertiary level of education (Bachelor's degree) compared to the general population of Sweden. While convenience sampling was of the essence due to external factors like time constraints, a larger study would benefit from collecting data from a larger, more diverse set of respondents.

As discussed in section 1.6 “Delimitations”, Sweden has a high level of technology adoption, which could prove a benefit and possibly serve as a predictor for future trends in the world. On the other hand, since Swedes have a high level of technology adoption, it is reasonable to assume that the levels of for example TA (mean weighted average between the traditional scenario and the QR code scenario being 3,53 on a seven-point scale) might be lower here than in the rest of the world, skewing the data in that sense. Furthermore, since the data sampling was constrained to Sweden, there could also be

sociocultural factors that play a part in the responses and traits among the respondents. All these factors should be taken into consideration when generalising the results of this study.

5.4. Future Research

To build further on this study it would be interesting to conduct a field experiment collaborating with a restaurant testing what the scenarios of this study aimed to investigate. The benefit of doing a field experiment would be that the respondents' reported answers would be of actual value to the restaurant since the respondent is a customer and thus affect revenues. Furthermore, it would be interesting to explore if there is a point where the quality of service either via the waiting staff and the traditional menu or the QR code ordering and digital menu matters more than mere presence. In other studies of satisfaction (e.g., those of Söderlund (2016)) mere presence is mediated by pleasure. As an elaboration on this study, it would be interesting to investigate how pleasure mediates the relationship in this setting. Would an unfriendly waiting staff still be preferred to a digital solution?

Finally, as mentioned in the discussion regarding hypothesis H1, future research should examine if the lower satisfaction levels found in this report lead to any financial consequences for restaurant owners. A suggestion for future research then becomes to investigate intention to revisit and intention to recommend.

5.5. A Final Remark

The findings in this thesis can be used by both marketers and restaurant owners to better understand the role waiting staff play in making the experience at a fine dining restaurant enjoyable. It also shows the consequences of digitalising an experience where the interaction with employees seem to serve a further benefit apart from simply completing a transaction. While the technological advancements in our society have opened the doors to a plethora of new possibilities, they might not always be what is desired by consumers. Thus, we return to the question *how much digitalisation is too much digitalisation* and hope that we have contributed with one piece of the puzzle.

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7. Appendices

Appendix A: Pre-study

AUTHORS NOTE:

IN the scenario and questionnaire, the word server is used. In this thesis the words waiting staff is used instead to enhance comprehension.

Thank you for your interest in responding to our survey regarding restaurant experiences.

In this survey you will first read a scenario where you are visiting a restaurant, followed by a number of questions. All responses are anonymous and the survey takes approximately 5-7 minutes to complete.

If you have any questions regarding the survey or our thesis, feel free to contact us at 25167@student.hhs.se (Anja) or 24711@student.hhs.se (Benjamin)

Thank you in advance,

Anja Saksi and Benjamin Zubcevic

Please read the following information related to GDPR (General Data Protection Regulation).

Project: BSc thesis in Marketing

Year and semester: 2022, autumn term

Students conducting the survey: Anja Saksi, BSc student (25167@student.hhs.se);

Benjamin Zubcevic, BSc student (24711@student.hhs.se)

Supervisor and department at SSE: Hanna Berg, Affiliated Researcher, Department of Marketing and Strategy

Supervisor's email address: hanna.berg@hhs.se

Type of personal data collected in this survey; initials, gender, age, if you are currently living in Sweden

Information relating to GDPR: As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys. Participation is naturally entirely voluntary, and this text is intended to provide you with necessary information that may concern your

participation in the study. You can at any time withdraw your consent and your data will thereafter be permanently erased.

Confidentiality: Anything you state in the survey will be held strictly confidential and will only be made available to supervisors, tutors and the course management team.
Secured storage of data: All data will be stored and processed safely by the SSE and will be permanently deleted when the project is completed.

No personal data will be published: The thesis written by the students will not contain any information that may identify you as a participant to the survey or interview subject.
Your rights under GDPR: You are welcome to visit <https://www.hhs.se/en/about-us/dataprotection/> in order read more and obtain information on your rights related to personal data.

After reading the information about GDPR, please respond below:

☐ Yes. I have received the information above and agree to take part. Please write **today's date** (DD/MM/YY) and your **initials** below in order to proceed. (1)

☐ No thanks. I do not consent to take part. (2)

Please write the date (DD/MM/YY) and your initials below in order to verify your consent to participate in this survey and that you have received the information regarding GDPR

End of Block: Introduction & GDPR

Start of Block: Personal data

I identify as

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Prefer not to say (4)

How old are you? (Please write in numbers only)

I am currently living in Sweden

- ☐ Yes (1)
- ☐ No (2)
- ☐ Prefer not to say (3)

End of Block: Personal data

Start of Block: Scenario 1 (or 2 – randomised)

Please read the following scenario and answer the questions below

You are in Sweden, in Stockholm, and this evening you and your friend are going to treat yourself at a restaurant that is a bit more exclusive than restaurants that you usually visit. Your friend has suggested a few options to choose from. You have already tried most of the recommended restaurants, but one of the suggestions is a fairly new place that you have not yet visited. It is also close to where you live, so you decide to try that one.

A short walk later you enter the restaurant and are welcomed by a server. The restaurant is at capacity but the server manages to find one table for two close to the window overlooking the street. There is a low hum of conversation and the occasional clink of silverware on plates. You have found yourselves a cosy place.

You sit down on the velvet chairs and browse the menu provided by the server. After some time you have boiled it down to two dishes that you feel rather indecisive between. In one of the dishes there is an ingredient you do not recognize and neither does your friend. When the server comes back, you ask about the unknown ingredient, which turned out to be a type of rare tomato. You decide that you will try the dish with the previously unknown ingredient and order it from the server. To your dish you order something to drink. A short while later your food arrives.

After you have finished your food, you decide that you want some dessert to end your evening. You call the server over to have another look at the menu. Browsing the menu

once more you decide to order a dark chocolate praline, which to your surprise is also vegan.

Following some more conversation with your friend you realise that it is getting quite late and time to go home. You ask for the check and thank the server for the evening.

End of Block: Scenario 1

Start of Block: Scenario 2 (or 1 – randomised)

Please read the following scenario and answer the questions below

You are in Sweden, in Stockholm, and this evening you and your friend are going to treat yourself at a restaurant that is a bit more exclusive than restaurants that you usually visit. Your friend has suggested a few options to choose from. You have already tried most of the recommended restaurants, but one of the suggestions is a fairly new place that you have not yet visited. It is also close to where you live, so you decide to try that one.

After a short walk you enter the restaurant and are welcomed by a sign with information that all orders are made via a QR code placed on the respective tables. The restaurant is at capacity but you manage to find one table for two close to the window overlooking the street. There is a low hum of conversation and the occasional clink of silverware on plates. You have found yourselves a cosy place.

You sit down on the velvet chairs and scan the code on the table with your phone to browse the menu. After some time you have boiled it down to two dishes that you feel rather indecisive between. In one of the dishes there is an ingredient you do not recognize and neither does your friend. To solve the issue, you search for the unknown ingredient on your phone, which turned out to be a type of rare tomato. You decide that you will try the dish with the previously unknown ingredient and order it on your phone. To your dish you order something to drink. After 20 minutes your food arrives.

After you have finished your food, you decide that you want some dessert to end your evening. You scan the code once again to have another look at the menu. After browsing the menu once more you decide to order a dark chocolate praline, which to your surprise is also vegan.

After some more conversation with your friend you realise that it is getting quite late and

time to go home. Since you already paid on your phone when you ordered, you leave the restaurant.

What is your overall impression of this restaurant experience?

How dissatisfied/satisfied are you with this restaurant?

- ☐ Very dissatisfied 1 (1)
- ☐ Rather dissatisfied 2 (2)
- ☐ Somewhat dissatisfied 3 (3)
- ☐ Neither dissatisfied nor satisfied 4 (4)
- ☐ Somewhat satisfied 5 (5)
- ☐ Rather satisfied 6 (6)
- ☐ Very satisfied 7 (7)

To what extent does this restaurant meet your expectations?

- ☐ Not at all 1 (1)
 - ☐ Barely 2 (2)
 - ☐ Somewhat 3 (3)
 - ☐ Sufficiently 4 (4)
 - ☐ Decently 5 (5)
 - ☐ Mostly 6 (6)
 - ☐ Totally 7 (7)
-

Imagine a restaurant that is perfect in every aspect. How near/far from this ideal do you find this restaurant?

- ☐ Very far from ideal 1 (1)
- ☐ Far from ideal 2 (2)
- ☐ Somewhat far from ideal 3 (3)
- ☐ The restaurant is neither ideal nor far from ideal 4 (4)
- ☐ Somewhat close to ideal 5 (5)
- ☐ Close to ideal 6 (6)
- ☐ Cannot get any closer 7 (7)

It is important that you pay attention when answering this study, please select “Rather unlikely” below

- ☐ Very unlikely 1 (1)
- ☐ Rather unlikely 2 (2)
- ☐ Somewhat unlikely 3 (3)
- ☐ Neither unlikely nor likely 4 (4)
- ☐ Somewhat likely 5 (5)
- ☐ Rather likely 6 (6)
- ☐ Very likely 7 (7)

How likely is it that you would revisit this restaurant?

- ☐ Very unlikely 1 (1)
 - ☐ Rather unlikely 2 (2)
 - ☐ Somewhat unlikely 3 (3)
 - ☐ Neither unlikely nor likely 4 (4)
 - ☐ Somewhat likely 5 (5)
 - ☐ Rather likely 6 (6)
 - ☐ Very likely 7 (7)
-

How likely is it that you would recommend this restaurant to a friend?

- ☐ Very unlikely 1 (1)
- ☐ Rather unlikely 2 (2)
- ☐ Somewhat unlikely 3 (3)
- ☐ Neither unlikely nor likely 4 (4)
- ☐ Somewhat likely 5 (5)
- ☐ Rather likely 6 (6)
- ☐ Very likely 7 (7)

End of Block: Scenario 2

Start of Block: Summarise the scenario

Please answer some questions about your impression of the previously presented scenario

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I found this scenario realistic (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found this scenario authentic (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please shortly summarise what you think this scenario aims to study

End of Block: Summarise the scenario

Start of Block: SST Data

Our world today is getting more and more digitalised. Self-Service Technology (SST) enable users or customers to enjoy a service without interacting with any service providers. Some examples of SST include self-checkouts in grocery stores and self-order kiosks often used in fast-food chains.

Please answer some questions about your use of self-service technologies (SST)

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I feel worried using SST in my everyday life (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have avoided SST because it is unfamiliar to me (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to use traditional service over SST (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please respond with your preferences in the statements below

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
Personal attention by a service employee is important to me (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It bothers me to use a machine when I could talk to a person instead (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal contact with an employee makes ordering food enjoyable for me (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: SST Data

Start of Block: Manipulation check

In the scenario presented in the beginning of the survey, I ordered food via

- ☐ A physical server (i.e., a person) (1)
- ☐ A QR code on my phone (2)

End of Block: Manipulation check

Start of Block: Quality and Feedback

After taking part in this survey, do you have any questions, remarks or ideas of improvement?

Do you think that the scenario was easy to read? (language, sentences etc...)

Do you have any thoughts about the layout logic and/or question order?

Appendix B: Complete main study

AUTHORS NOTE (NOT PART OF THE STUDY):

In the follow scenario and questionnaire, the word server is used. In this thesis the words waiting staff is used instead to enhance comprehension.

Start of Block: Svenska eller engelska

Tack för visat intresse att delta i vår studie om restaurangupplevelser. Studien genomförs av Anja Saksi och Benjamin Zubcevic och är en del av vår kandidatuppsats vid Handelshögskolan i Stockholm.

I denna enkät kommer du först att få läsa ett scenario där du besöker en restaurang följt av ett antal frågor. Alla svar är anonyma och din data behandlas konfidentiellt. På nästa sida kommer du att få mer information om datainsamling samt om GDPR.

Enkäten tar ungefär 7 minuter att genomföra. För varje svar skänker vi 1 kr till UNICEF:s arbete i Ukraina.

Thank you for your interest in our study regarding restaurant experiences. The study conducted by Anja Saksi and Benjamin Zubcevic and is a part of our bachelor thesis at Stockholm School of Economics.

In this survey you will read a scenario where you are visiting a restaurant followed by a number of questions. All answers are anonymous and your data will be handled confidentially. On the next page you will be provided with more information about the collection of data and GDPR.

The survey takes about 7 minutes to complete. For all answers we will donate 1 SEK to UNICEF's work in Ukraine.

- ☐ Jag vill svara på enkäten på svenska (1)
- ☐ I want to answer the survey in English (2)

Tack / Thank you

Anja Saksi & Benjamin Zubcevic

End of Block: Svenska eller engelska

Start of Block: Engelska GDPR + instruktion (If English was chosen as a language)

Please read the following information related to GDPR (General Data Protection Regulation).

Project: BSc thesis in Marketing

Year and semester: 2022, autumn term

Students conducting the survey: Anja Saksi, BSc student (25167@student.hhs.se);

Benjamin Zubcevic, BSc student (24711@student.hhs.se)

Supervisor and department at SSE: Hanna Berg, Affiliated Researcher, Department of Marketing and Strategy

Supervisor's email address: hanna.berg@hhs.se

Type of personal data collected in this survey; initials, gender, age, if you are currently living in Sweden

Information relating to GDPR: As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys. Participation is naturally entirely voluntary, and this text is intended to provide you with necessary information that may concern your participation in the study. You can at any time withdraw your consent and your data will thereafter be permanently erased.

Confidentiality: Anything you state in the survey will be held strictly confidential and will only be made available to supervisors, tutors and the course management team. Secured storage of data: All data will be stored and processed safely by the SSE and will be permanently deleted when the project is completed.

No personal data will be published: The thesis written by the students will not contain any information that may identify you as a participant to the survey or interview subject. Your rights under GDPR: You are welcome to visit <https://www.hhs.se/en/about-us/dataprotection/> in order read more and obtain information on your rights related to personal data.

If you have any questions about the our study or the survey you are welcome to contact us at 25167@student.hhs.se (Anja) or 24711@student.hhs.se (Benjamin).

After reading the information about GDPR, please respond below:

☐ Yes. I have received the information above and agree to take part. Please write **today's date** (DD/MM/YY) and **your initials** below in order to proceed. (1)

☐ No thanks. I do not consent to take part. (2)

End of Block: Engelska GDPR + instruktion

Start of Block: Engelska traditionellt (or QR – randomized)

Please read the following scenario carefully

You are in Stockholm, Sweden, and this evening you and your friend are going to treat yourselves at a restaurant that is a bit more exclusive than restaurants that you usually visit. Your friend has suggested a few options to choose from and one of the suggestions catches your eye. It is a fairly new place that you have not yet visited, and it is also close to where you live, so you decide to try that one.

A short walk later you enter the restaurant and are welcomed by a server. The restaurant is at capacity, but the server manages to find one table for two close to the window overlooking the street. There is a low hum of conversation and the occasional clink of silverware on plates. You have found yourselves a cosy place.

You sit down on the velvet chairs and browse the menu provided by the server. After some time, you have found two dishes that you feel rather indecisive about. In one of the dishes there is an ingredient you do not recognize, neither does your friend. When the server comes back, you ask about the unknown ingredient, which turned out to be a special kind of tomato. You decide that you will try the dish and order it from the server. For your meal you also order something to drink. A short while later your food arrives.

After a tasty meal, you feel like ending the evening with some dessert. You call the server over to have another look at the menu. Browsing the menu once more you decide to order a dark chocolate praline, which to your surprise is also vegan.

Following some more conversation with your friend you realise that it is getting quite late and time to go home. You ask for the check and thank the server for the evening.

Now that you have finished reading the scenario, please proceed to the next page where you will answer some questions about your experience. **NOTE! You will not be able to return and read the scenario again.**

End of Block: Engelska traditionellt

Start of Block: Engelska QR (or Traditional – Randomized)

Please read the following scenario carefully

You are in Stockholm, Sweden, and this evening you and your friend are going to treat yourselves at a restaurant that is a bit more exclusive than restaurants that you usually visit. Your friend has suggested a few options to choose from and one of the suggestions catches your eye. It is a fairly new place that you have not yet visited, and it is also close to where you live, so you decide to try that one.

A short walk later you enter the restaurant and are welcomed by a sign with information that all orders are made via a QR code placed on the respective tables. The restaurant is at capacity, but you manage to find one table for two close to the window overlooking the street. There is a low hum of conversation and the occasional clink of silverware on plates. You have found yourselves a cosy place.

You sit down on the velvet chairs and scan the code on the table with your phone to browse the menu. After some time, you have found two dishes that you feel rather indecisive about. In one of the dishes there is an ingredient you do not recognize, neither does your friend. To solve the issue, you search for the unknown ingredient on your phone, which turned out to be a special kind of tomato. You decide that you will try the dish and order it on your phone. For your meal you also order something to drink. A short while later your food arrives.

After a tasty meal, you feel like ending the evening with some dessert. You scan the code once again to have another look at the menu. Browsing the menu once more you decide to order a dark chocolate praline, which to your surprise is also vegan.

Following some more conversation with your friend you realise that it is getting quite late and time to go home. Since you already paid on your phone when you ordered, you leave the restaurant.

Now that you have finished reading the scenario, please proceed to the next page where you will answer some questions about your experience. **NOTE! You will not be able to return and read the scenario again.**

End of Block: Engelska QR

Start of Block: Engelska frågor

What is your overall impression of this restaurant experience?

How dissatisfied/satisfied are you with this restaurant?

- ☐ Very dissatisfied 1 (1)
- ☐ Rather dissatisfied 2 (2)
- ☐ Somewhat dissatisfied 3 (3)
- ☐ Neither dissatisfied nor satisfied 4 (4)
- ☐ Somewhat satisfied 5 (5)
- ☐ Rather satisfied 6 (6)
- ☐ Very satisfied 7 (7)

To what extent does this restaurant meet your expectations?

- ☐ Not at all 1 (1)
 - ☐ Barely 2 (2)
 - ☐ Somewhat 3 (3)
 - ☐ Sufficiently 4 (4)
 - ☐ Decently 5 (5)
 - ☐ Mostly 6 (6)
 - ☐ Totally 7 (7)
-

Imagine a restaurant that is perfect in every aspect. How near/far from this ideal do you find this restaurant?

- ☐ Very far from ideal 1 (1)
 - ☐ Far from ideal 2 (2)
 - ☐ Somewhat far from ideal 3 (3)
 - ☐ The restaurant is neither ideal nor far from ideal 4 (4)
 - ☐ Somewhat close to ideal 5 (5)
 - ☐ Close to ideal 6 (6)
 - ☐ Cannot get any closer 7 (7)
-

It is important that you pay attention when answering this study, please select “Rather unlikely” below

- ☐ Very unlikely 1 (1)
 - ☐ Rather unlikely 2 (2)
 - ☐ Somewhat unlikely 3 (3)
 - ☐ Neither unlikely nor likely 4 (4)
 - ☐ Somewhat likely 5 (5)
 - ☐ Rather likely 6 (6)
 - ☐ Very likely 7 (7)
-

How likely is it that you would revisit this restaurant?

- ☐ Very unlikely 1 (1)
- ☐ Rather unlikely 2 (2)
- ☐ Somewhat unlikely 3 (3)
- ☐ Neither unlikely nor likely 4 (4)
- ☐ Somewhat likely 5 (5)
- ☐ Rather likely 6 (6)
- ☐ Very likely 7 (7)

How likely is it that you would recommend this restaurant to a friend?

- ☐ Very unlikely 1 (1)
- ☐ Rather unlikely 2 (2)
- ☐ Somewhat unlikely 3 (3)
- ☐ Neither unlikely nor likely 4 (4)
- ☐ Somewhat likely 5 (5)
- ☐ Rather likely 6 (6)
- ☐ Very likely 7 (7)

If you have any comments regarding your answers please write them in the textbox below

Page Break

Please answer some questions about your impression of the previously presented scenario

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I found this scenario realistic (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found this scenario authentic (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please shortly summarise what you think this scenario aims to study

Page Break

Our world today is getting more and more digitalised. Self-Service Technology (SST) enable users or customers to enjoy a service without interacting with any service providers. Some examples of SST include self-checkouts in grocery stores and self-order kiosks often used in fast-food chains.

Please answer some questions about your use of self-service technologies (SST)

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I feel worried using SST in my everyday life (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have avoided SST because it is unfamiliar to me (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to use traditional service over SST (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please respond with your preferences in the statements below

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
Personal attention by a service employee is important to me (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It bothers me to use a machine when I could talk to a person instead (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal contact with an employee makes ordering food enjoyable for me (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you have any comments regarding your answers, please write them in the textbox below.

Page Break

I identify as

- ☐ Male (1)
- ☐ Female (2)
- ☐ Non-binary / third gender (3)
- ☐ Prefer not to say (4)

How old are you? (Please write in numbers only)

I am currently living in Sweden

- ☐ Yes (1)
- ☐ No (2)
- ☐ Prefer not to say (3)
-

In the scenario presented in the beginning of the survey, I ordered food via

- ☐ A physical server (i.e., a person) (1)
- ☐ A QR code on my phone (2)

End of Block: Engelska frågor

Start of Block: Svenska GDPR+instruktion (If Swedish was chosen)

Vänligen läs följande information relaterat till GDPR (General Data Protection regulation)

Projekt: Kandidatuppsats (BSc thesis) inom marknadsföring

År och termin: 2022, höstterminen

Ansvariga studenter: Anja Saksi, BSc-student (25167@student.hhs.se); Benjamin Zubcevic, BSc-student (24711@student.hhs.se)

Handledare och avdelning vid Handelshögskolan: Hanna Berg Affiliated Researcher, Institutionen för marknadsföring och strategi

Handledarens e-postadress: hanna.berg@hhs.se

Typ av personuppgifter om dig som ska behandlas: initialer, kön, ålder, om du för tillfället är bosatt i Sverige

Information relaterat till GDPR:

Som en central del i utbildningen vid Handelshögskolan genomförs en kandidatuppsats. För denna uppsats genomför vi en studie där ditt deltagande är frivilligt. Denna text syftar

till att ge dig information som rör ditt deltagande i denna studie. Du kan när som helst återkalla ditt samtycke och din data kommer därefter att raderas permanent.

Konfidentialitet:

Dina uppgifter kommer att behandlas konfidentiellt och endast tillgängliggöras för handledare och kursledningen. All data kommer att lagras och behandlas på ett säkert sätt via Handelshögskolan och kommer sedan att raderas permanent då projektet är avslutat.

Inga personuppgifter kommer att publiceras och uppsatsen kommer inte att innehålla någon information som kan kopplas till dig som deltagare i studien. Vänligen läs mer om dina rättigheter under GDPR här: <https://www.hhs.se/en/about-us/dataprotection/>

Om du har några frågor om vår studie eller om enkäten är du välkommen att kontakta oss via 25167@student.hhs.se (Anja) eller 24711@student.hhs.se (Benjamin).

Efter att ha läst informationen om GDPR, var god svara:

☐ Ja. Jag tagit del av informationen ovan och vill delta i studien. Vänligen skriv **dagens datum** (DD/MM/YY) och **dina initialer** för att fortsätta. (1)

☐ Nej tack. Jag vill inte delta i studien. (2)

End of Block: Svenska GDPR+instruktion

Start of Block: Svenska traditionellt (or QR – randomised)**Vänligen läs följande scenario noggrant**

Du är i Stockholm och ikväll har du och en vän bestämt er för att unna er lite extra med ett restaurangbesök på en restaurang som är lite mer exklusiv än en du vanligtvis skulle besöka. Din vän har föreslagit några alternativ att välja mellan och bland förslagen hittar du ett ställe som låter extra intressant. Det är en relativt nyöppnad restaurang som du inte hunnit besöka än, och dessutom ligger den i närheten till där du bor, så ni bestämmer er för att besöka den.

En kort promenad senare kommer ni fram till restaurangen och väl inne möts ni av en kypare. Det är fullt i restaurangen men kyparen lyckas hitta ett bord för två vid fönstret med utsikt över gatan. I restaurangen är det ett lätt sorl från de andra gästernas konversationer, som periodvis avbryts av klingandet från bestick och porslin. Ni har hittat ett mysigt ställe.

Ni slår er ner på sammetsstolarna och börjar titta igenom menyn som ni fått av kyparen. Efter att ha tittat igenom menyn några gånger har du hittat två rätter som du inte riktigt

kan bestämma dig emellan. I en av rätterna finns det en ingrediens varken du eller din vän känner igen. När kyparen kommer tillbaka frågar du hen om den okända ingrediensen, som visar sig vara en speciell slags tomat. Du bestämmer dig för att prova rätten och beställer den från kyparen. Du beställer också något att dricka och efter ett kort tag kommer maten.

Efter en god måltid känner ni för att avsluta kvällen med en efterrätt. Du kallar på kyparens uppmärksamhet för att ta en ny titt i menyn. Efter att ha vägt alternativen ett tag bestämmer du dig för att beställa en chokladpralin, som till din förvåning dessutom är vegansk.

Efter lite mer prat vänner emellan inser du att det börjar bli rätt sent och det nog börjar bli dags att dra sig hemåt. Du ber om notan och tackar kyparen.

Nu när du läst scenariot kan du gå vidare och svara på några frågor om din upplevelse.
OBS! Du kan inte återvända till den här sidan för att läsa scenariot igen.

End of Block: Svenska traditionellt

Start of Block: Svenska QR (Or traditional – randomised)

Vänligen läs följande scenario noggrant

Du är i Stockholm och ikväll har du och en vän bestämt er för att unna er lite extra med ett restaurangbesök på en restaurang som är lite mer exklusiv än en du vanligtvis skulle besöka. Din vän har föreslagit några alternativ att välja mellan och bland förslagen hittar du ett ställe som låter extra intressant. Det är en relativt nyöppnad restaurang som du inte hunnit besöka än, och dessutom ligger den i närheten till där du bor, så ni bestämmer er för att besöka den.

En kort promenad senare kommer ni fram till restaurangen och väl inne möts ni av en skylt som informerar er att alla beställningar på den här restaurangen sköts via en QR-kod som finns placerad på varje bord. Det är fullt i restaurangen men ni lyckas hitta ett bord för två vid fönstret med utsikt över gatan. I restaurangen är det ett lätt sorl från de andra gästernas konversationer, som periodvis avbryts av klingandet från bestick och porslin. Ni har hittat ett mysigt ställe.

Ni slår er ner på sammetsstolarna och skannar koden på bordet med era telefoner för att titta igenom menyn. Efter att ha tittat igenom menyn några gånger har du hittat två rätter som du inte riktigt kan bestämma dig emellan. I en av rätterna finns det en ingrediens som varken du eller din vän känner igen. För att lösa problemet söker du upp ingrediensen på din mobil, som visar sig vara en speciell slags tomat. Du bestämmer dig för att prova

rätten och beställer den via mobilen. Du beställer också något att dricka och efter ett kort tag kommer maten.

Efter en god måltid känner ni för att avsluta kvällen med en efterrätt. Ni skannar koden igen för att ta en ny titt i menyn. Efter att ha vägt alternativen ett tag bestämmer du dig för att beställa en chokladpralin, som till din förvåning dessutom är vegansk.

Efter lite mer prat vänner emellan inser du att det börjar bli rätt sent och det nog börjar bli dags att dra sig hemåt. Eftersom ni redan betalat för kvällen direkt när ni beställde så lämnar ni restaurangen.

Nu när du läst scenariot kan du gå vidare och svara på några frågor om din upplevelse.
OBS! Du kan inte återvända till den här sidan för att läsa scenariot igen.

End of Block: Svenska QR

Start of Block: Svenska frågor

Vad är din övergripande uppfattning av det här restaurangbesöket?

Hur missnöjd/nöjd är du med det här restaurangbesöket?

- ☐ Väldigt missnöjd 1 (1)
 - ☐ Ganska missnöjd 2 (2)
 - ☐ Något missnöjd 3 (3)
 - ☐ Varken missnöjd eller nöjd 4 (4)
 - ☐ Något nöjd 5 (5)
 - ☐ Ganska nöjd 6 (6)
 - ☐ Väldigt nöjd 7 (7)
-

Hur väl lever det här restaurangbesöket upp till dina förväntningar?

- ☐ Inte alls 1 (1)
 - ☐ Knappt 2 (2)
 - ☐ Något 3 (3)
 - ☐ Tillräckligt 4 (4)
 - ☐ Hyftsat väl 5 (5)
 - ☐ Mestadels 6 (6)
 - ☐ Helt och hållet 7 (7)
-

Föreställ dig en restaurang som är perfekt i varje avseende. Hur långt ifrån/nära detta ideal skulle du beskriva det här restaurangbesöket?

- ☐ Väldigt långt från idealet 1 (1)
 - ☐ Långt från idealet 2 (2)
 - ☐ Någorlunda långt från idealet 3 (3)
 - ☐ Den här restaurangen är varken långt ifrån eller nära idealet 4 (4)
 - ☐ Någorlunda nära idealet 5 (5)
 - ☐ Nära idealet 6 (6)
 - ☐ Kan inte komma närmre idealet 7 (7)
-

Det är viktigt att du är uppmärksam när du svarar på frågorna. Vänligen fyll i “ganska osannolikt” nedan

- ☐ Väldigt osannolikt 1 (1)
 - ☐ Ganska osannolikt 2 (2)
 - ☐ Något osannolikt 3 (3)
 - ☐ Varken osannolikt eller sannolikt 4 (4)
 - ☐ Något sannolikt 5 (5)
 - ☐ Ganska sannolikt 6 (6)
 - ☐ Väldigt sannolikt 7 (7)
-

Hur sannolikt är det att du skulle besöka den här restaurangen igen?

- ☐ Väldigt osannolikt 1 (1)
- ☐ Ganska osannolikt 2 (2)
- ☐ Något osannolikt 3 (3)
- ☐ Varken osannolikt eller sannolikt 4 (4)
- ☐ Något sannolikt 5 (5)
- ☐ Ganska sannolikt 6 (6)
- ☐ Väldigt sannolikt 7 (7)

Hur sannolikt är det att att du skulle rekommendera den här restaurangen till en vän?

- ☐ Väldigt osannolikt 1 (1)
- ☐ Ganska osannolikt 2 (2)
- ☐ Något osannolikt 3 (3)
- ☐ Varken osannolikt eller sannolikt 4 (4)
- ☐ Något sannolikt 5 (5)
- ☐ Ganska sannolikt 6 (6)
- ☐ Väldigt sannolikt 7 (7)

Om du har några kommentarer kring dina svar vänligen lämna dem i textrutan nedan

Page Break

Vänligen svara på några frågor om din uppfattning av det tidigare presenterade scenariot

	Håller inte alls med 1 (1)	Håller inte med 2 (2)	Håller delvis inte med 3 (3)	Har ingen åsikt 4 (4)	Håller delvis med 5 (5)	Håller med 6 (6)	Håller helt med 7 (7)
Jag upplevde scenariot som realistiskt (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag upplevde scenariot som autentiskt (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vänligen sammanfatta kort vad du tror scenariot syftar till att undersöka

Page Break

Vår värld blir mer och mer digitaliserad. Självbetjäningsteknologi (Self-Service Technology - SST) möjliggör användare eller kunder att nyttja en service utan att interagera med servicepersonal. Några exempel på SST är självskanningskassor i mataffärer och självbetjäningsautomater ofta använda av snabbmatsrestauranger.

Vänligen svara på några frågor relaterat till ditt nyttjande av självbetjäningsteknologi (SST)

	Håller inte alls med 1 (1)	Håller inte med 2 (2)	Håller delvis inte med 3 (3)	Har ingen åsikt 4 (4)	Håller delvis med 5 (5)	Håller med 6 (6)	Håller helt med 7 (7)
Jag känner mig orolig när jag ska använda SST (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag har undvikit att använda SST då det är främmande för mig (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jag föredrar traditionell service framför SST (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Vänligen specificera dina preferenser i nedanstående påståenden

	Håller inte alls med 1 (1)	Håller inte med 2 (2)	Håller delvis inte med 3 (3)	Har ingen åsikt 4 (4)	Håller delvis med 5 (5)	Håller med 6 (6)	Håller helt med 7 (7)
Personlig kontakt med servicepersonal är viktigt för mig (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det stör mig att använda en maskin när jag hade kunnat prata med en person istället (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personlig kontakt med servicepersonal gör beställning av mat glädjefyllt (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Om du har några kommentarer kring dina svar vänligen lämna dem i textrutan nedan

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Jag identifierar mig som

- ☐ Man (1)
- ☐ Kvinna (2)
- ☐ Icke-binär (3)
- ☐ Vill inte svara (4)

Hur gammal är du? (vänligen svara med siffror)

Jag är för tillfället bosatt i Sverige

- ☐ Ja (1)
- ☐ Nej (2)
- ☐ Vill inte svara (3)

I scenariot presenterat i början av enkäten beställde jag min mat från

- ☐ En fysisk person (kypare) (1)
- ☐ En QR-kod på min telefon (2)

End of Block: Svenska frågor

Appendix C: t-tests of Properties and Differences in Mean Between Variables in the Subject Groups

Table 3. Properties and difference in mean between variables in the subject groups

Respondent group	Traditional n=78		QR n=85		p	t
	μ	σ	μ	σ		
Perceptions of restaurant visit						
Satisfaction	5.97	0.83	4.27	1.63	<0.001*	8.46
TA	3.65	1.51	3.42	1.77	0.363	0.91
NFI	4.87	1.62	4.72	1.93	0.590	0.54

Note: Means at $p < .05$ are significant and marked with a *.

Appendix D: Results from Hayes model 3

Hayes Process Model 3

The variables are abbreviated in the following tables due to the lack of space.

Table 1. Hayes Process Model 3

Model	coeff	se(HC4)	t	p
Mere presence	-1.79	0.21	-8.61	0.000*
TA	0.37	0.22	1.70	0.091
Mere presence x TA	-0.31	0.16	-1.95	0.053
NFI	0.30	0.20	1.52	0.132
Mere presence x NFI	-0.31	0.15	2.00	0.048*
TA x NFI	-0.04	0.11	-0.37	0.713
Mere presence x TA x NFI	0.03	0.07	0.37	0.714

Note: Values at $p < .05$ are significant and marked with a *.

Mere presence = IV

TA = Moderator 1 (MOD1)

NFI = Moderator 2 (MOD2)

Below are some properties of the linear model:

Model summary	
R ²	0.51
MSE	1.24
F-statistic (HC4)	17.58
DF1	7
DF2	155
Model p-value	0.00*

Note: Values at $p < .05$ are significant and marked with a *.

Table 2. Bootstrapped Model 3

Number of bootstraps	10 000				
Model	coeff	BootMean	BootSE	BootLLCI	BootULCI
Mere Presence	-1.79	-1.78	-8.61	-2.21	-1.37
TA	0.37	0.37	1.70	-0.06	0.80
Mere Presence x TA	-0.31	-0.31	-1.95	-0.63	0.01
NFI	0.30	0.29	1.52	-0.09	0.70
Mere Presence x NFI	-0.31	-0.30	-2.00	-0.61	0.01
TA x NFI	-0.04	-0.04	-0.37	-0.34	0.15
Mere Presence x TA x NFI	0.03	0.03	0.37	-0.10	0.16

Note: Values at $p < .05$ are significant and marked with a *.

IV = Mere presence

MOD1 = TA

MOD2 = NFI

Appendix E: Table results for Satisfaction and TA and NFI

In the table below the output of the linear model for the traditional scenario can be seen.

Table 1: Linear model for satisfaction and TA and NFI, the traditional scenario

Respondent group	Traditional N = 78	
	TA	NFI
Estimate	0.00	0.00
Std. error	0.00	0.00
t value	0.61	0.00
p-value	0.54	1.00

Note: Values at $p < .05$ are significant and marked with a *.

Below are some properties of the linear model:

Respondent group	Traditional
Properties of the linear model	N = 78
Adjusted R ²	-0.02
F-statistic	0.31 on 1 and 75 DF
Model p-value	0.74

Note: Values at $p < .05$ are significant and marked with a *.

In the table below the output of the linear model for the QR scenario can be seen.

Table 2: linear model for satisfaction and TA and NFI, the QR scenario

Respondent group	QR code scenario N = 85	
	TA	NFI
Estimate	-0.23	-0.33
Std. error	0.14	0.12
t value	-1.71	-2.67
p-value	0.09	0.01*

Note: Values at $p < .05$ are significant and marked with a *.

Below are some properties of the linear model:

Respondent group	QR code scenario
Properties of the linear model	N = 85
Adjusted R ²	0.36
F-statistic	24.59 on 1 and 82 DF
Model p-value	0.00*

Note: Values at $p < .05$ are significant and marked with a *.

Appendix F: Table results for Satisfaction and TA

Table 1: Data from regression output in R for satisfaction and TA

Respondent group	Traditional scenario N = 78	QR code scenario n = 85
Estimate	0.05	-0.52
Std. error	0.06	0.08
t value	0.79	-6.26
p-value	0.43	0.00*
Adjusted R ²	0.00	0.31
F-statistic	0.62 on 1 and 76 DF	39.16 on 1 and 83 DF

Note: Values at $p < .05$ are significant and marked with a *.

The correlations are shown in the table below:

Table 2: Correlations between TA and satisfaction

TA	Satisfaction Spearman	Pearson's r
Traditional	0.14	0.09
QR code	-0.56	-0.57

Appendix G: Table results for Satisfaction and NFI

Table below provides data and significance of the regressions above.

Table 1: Data from regression output in R for satisfaction and NFI

Respondent group	Traditional scenario N = 78	QR code scenario n = 85
Estimate	0.03	-0.50
Std. error	0.06	0.07
t value	0.49	-6.72
p-value	0.62	0.00*
Adjusted R ²	-0.01	0.35
F-statistic	0.24 on 1 and 76 DF	45.20 on 1 and 83 DF

Note: Values at $p < .05$ are significant and marked with a *.

The correlations are shown in the table below:

Table 2: Correlations between NFI and satisfaction

NFI	Satisfaction Spearman	Pearson's r
Traditional	0.07	0.06
QR code	-0.58	-0.59

Appendix H: Table results for Age and TA

Below data and significance for age and TA of the regression are summarised

Table: Data from regression output in R for age and TA

Respondent group	Total N = 163
Estimate	0.02
Std. error	0.01
t value	2.83
p-value	0.01*
Adjusted R ²	0.04
F-statistic	8.03 on 1 and 161 DF

Note: Values at $p < .05$ are significant and marked with a *.

The results show a statistically significant positive relationship between age and TA.

Appendix I: Table results for Age and NFI

Below data and significance for age and NFI are summarised.

Table: Data from regression output in R for age and NFI

Respondent group	Total N = 163
Estimate	0.04
Std. error	0.01
t value	4.04
p-value	0.00*
Adjusted R ²	0.09
F-statistic	16.33 on 1 and 161 DF

Note: Values at $p < .05$ are significant and marked with a *.

The results show a statistically significant positive relationship between age and NFI.

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