Digital platforms divided by culture

The impact of cultural differences on the acceptance and use of multi-sided platforms

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The impact of cultural differences on the acceptance and use of multi-sided platforms

by

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Preface

Before you is the thesis ”Culture in Multi-sided Digital Platform Competition.” This research was on respondents’ cultural values from the Netherlands and Germany concerning their acceptance and use of multi-sided digital platforms. This thesis is written as part of my graduation project for the Master Management of Technology at the TU Delft. From September 2020 to February 2021, I conducted my individual research, gathered respondents, and wrote the report.

With this final project, I conclude a period of development, both academic and personal, in which I learned a great deal and set the stage for my future. I have always been highly driven by technology, design, and innovation, leading to my choice to start studying in Delft. This period is a testament to perseverance and determination. There have been many moments in which I could have stopped studying, started working and continued on another road. However, with a lot of support from my parents, sister and brother, always offering me different perspectives and a listening ear, I continued towards my dreams. It could be argued to be a sign of stubbornness, and it sure is, but to not back down and continue on, requires dedication. Without them, I would not be at this point in my life, so this part is for you, Thank you.

During my time as a student, I have met wonderful people, but most importantly, I have met my girlfriend, Natalie. Thanks to you, I have someone by my side to kick me when I was slacking, to listen when I got stuck, but especially someone to share the beautiful experiences with. Thank you for sticking with me and for your continued support. I hope that this is just one of the thankful moments I can share with you.

During the previous 6 months, I have been working to contribute to an understanding of culture in accepting technology. A subject that combines two important aspects that have intrigued me, how can technology impact so many people, but elude many on the basics constructs. In other words, combining people and technology and their interaction with technology.

I would like to thank my graduation committee members, providing me with creative discussions and suggestions in the early phases of the project to give me the freedom and autonomy to investigate an intriguing subject. First to Geerten, for the creative freedom and excellent discussions in the early stages of the project, which provided ample motivation to continue on this journey. The pandemic locked us all indoors, but thanks to video-calls, I received digital guidance through my master thesis project from the comfort of our own homes. Without ever meeting in person during this time makes this achievement all the more special.

Second to Vladimir, who took it upon him to watch out for my well-being during the project, to take time to relax and enjoy this time as well. You gave me a chance the speculate, theorize, and socialize during our weekly video-calls. Thank you for the continued support and invaluable advice during this period. I would like to thank Dr Aaron Ding for his supportive talks, valuable input and highlighting the areas that would contribute to the project. Finally, I would like to thank Dr Laurens Rook for his teachings on quantitative analysis and for introducing me to statistical tools that I enjoyed working with.

To conclude, in a time when a pandemic shakes up the known order of things, lock-downs, and permanently working from home. Giving new meaning to the phrase ”desk research”, this period has been extra-ordinary. It is probably a catalyst for digitalization in industries that have never considered it, given video-conferencing its final push in adoption by the laggards. These extenuating circumstances make it a time to never forget, giving me perspective on my life and achievements. Thank you to everyone that has made this experience better than expected.

J. J. Kuijpers
Utrecht, February 2021

Summary

Information technology innovation has given worldwide access to each other, to information, and to entirely new digital platforms forming new markets over the last decade. All innovations build on IT developments are becoming an integral part of everyday live (Alalwan, 2020; Dwivedi et al., 2016; Nakayama et al., 2020). This includes the digital platforms that are transforming old business models, organizational models and economies (de Reuver et al., 2018). Platforms are not an innovation of information technology; however, the possibilities that IT has given the digital platform are enormous.

The most interesting digital platform that is currently nesting itself in our every day life is the multi-sided platform as described by Hagiu and Wright (2015). These platforms mediate between different groups of users, both buyers and sellers, and exploit the phenomenon known as network externalities by which increased adoption of the platform increases its value to users, pulling more users to the platform (Katz and Shapiro, 1985; Parker and Van Alstyne, 2005; Rochet and Tirole, 2003; Shaw et al., 2000). However, the cultural differences between countries can make or break a successful entry into another national market. Simply copying the monolithic algorithms has not been the answer, as recently admitted by Amazon (Liao, 2019). The question rises about what effect does culture have on these platforms' use and acceptance?

In this thesis project the objective is to understand and determine the effect of Country-level culture on the acceptance and use of Multi-sided Digital Platforms by consumers. To achieve this objective the conducted research project is an empirical investigation of quantitative data, gathered from a survey. With the case of online food delivery platforms that are prime examples of multi-sided platforms and two neighbouring countries (the Netherlands and Germany) the cross-cultural effect was studied to answer the following question:

> What is the effect of cultural dimensions on the acceptance and use of multi-sided digital platforms?

The context of two neighbouring countries allowed for a critical analysis that investigated the minor differences that are expected to exist between the Netherlands and Germany.

In search of the answer on this question the academic literature is consulted to ground the conceptual model in scientific theory. Scholars have theorised and found indicators of cultural effects in the adoption, acceptance and use of technology. The academic base on technology acceptance models is extensive and broad, too broad to consult in its entirety which limited the project to the main stream theory built from the original Technology Acceptance Model (TAM) (Davis Jr., 1985) With the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) the TAM model has been extended to include various social and behavioural constructs (Venkatesh et al., 2012), but was still lacking the extra dimension of culture.

The most widely accepted and used theory on culture was found in the cultural dimensions developed by Hofstede (1980). Continuous research on the national culture, to capture these in cultural dimensions on a country-level has provided six dimensions (Hofstede, 2011). With these six dimensions, Power Distance, Uncertainty Avoidance, Individualism, Masculinity, Long-term orientation, and Indulgence vs Restraint, and the UTAUT2 model a conceptual model is developed.

To answer the question on cross-cultural effect, the conceptual model is limited to examine the effect of the six cultural dimensions on the behavioural intention and use behaviour in the context of online food delivery platforms. Adapting the UTAUT2-survey to fit the online food delivery platform context and

adding the value survey to gather data on the cultural dimensions, the questionnaire was distributed among two research platforms and the personal network of the researcher. The total response to the survey resulted in 383 valid participants that met the boundary conditions for data analysis.

With the limitation to the effect of the six cultural dimensions on the behavioural intent and use frequency of the respondents, the corresponding hypotheses were tested with a linear regression analysis using JASP 0.14.1. The analysis found no significant values to accept the six hypotheses, with no measurable effect of the cultural dimensions on behavioural intention and use frequency of the respondents. To validate the result of the data gathered concerning the cultural dimensions, the correlation matrix for the UTAUT2-constructs did reveal significant results. In the correlation matrix of UTAUT2 was a indication that minor difference are measurable on the individual level for the acceptance and use of online food delivery platforms.

To summarise the answer for the research question; the effect of cultural dimensions on the acceptance and use of multi-sided digital platform has not been measured in this thesis project. The differences measured between the Netherlands and Germany in cultural dimensions do not explain the different acceptance and use of online food delivery platform technology. The UTAUT2-model did show a significant acceptance and use of online food delivery platforms, which shows that the online food delivery platform have successfully expanded cross-culturally in the case of the Netherlands and Germany.

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List of Acronyms

BI	Behavioural Intention
IDV	Individualism Index
IS	Information System
IT	Information Technology
IVR	Indulgence Versus Restraint Index
LTO	Long-Term Orientation Index
MAS	Masculinity Index
MSP	Multi-sided Platform
O2O	Online-2-Offline
OFDP	Online Food Delivery Platform
PDI	Power Distance Index
PEoU	Perceived Ease of Use
PU	Perceived Usefulness
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UAI	Uncertainty Avoidance Index
UTAUT	Unified Theory of Acceptance and Use of Technology
VSM	Value Survey Module

1

Introduction

1.1. Cultural impact on digital platforms

Information technology innovation has given worldwide access to each other, to information, and to entirely new digital platforms forming new markets over the last decade. Given this development of information communication technology, smartphone, smart technologies, and mobile applications are an integral part of everyday live (Alalwan, 2020; Dwivedi et al., 2016; Nakayama et al., 2020).

Online platforms are where we socialise, engage in business, and generate content to share with the world. These online, Digital platforms are significantly changing our lives and transforming business, organisational models, and economies (de Reuver, Sørensen, and Basole, 2018).

Platforms have been around ever since mass production aimed to serve multiple uses with similar products with only minor modifications. However, research has presented different perspectives on platforms, as innovation has led to platforms spanning entire supply chains or forming completely new industry ecosystems. These platforms are defined as technology platforms based on their production process (Gawer, 2014). An example is the current MBQ-platform of Volkswagen Group the is the base for multiple models under different brands (Audi, VW, Skoda, Seat models all use the same base platform) as a supply-chain platform. Examples for industry creating platforms are Google with Android and Apple iPhone with the AppStore.

Digital platforms that are not producing physical products but are competing on new layers of digital architecture use the service layers provided in digital products. These platforms are mediating different groups of users, both buyers and sellers are referred to in the literature as intermediate or Multi-sided Platform (MSP) (Hagiu and Wright, 2015). These platforms exploit the phenomenon known as network externalities by which increased adoption of the platform increases its value to users, pulling more users to the platform (Katz and Shapiro, 1985; Parker and Van Alstyne, 2005; Rochet and Tirole, 2003; Shaw et al., 2000). Network effects play a significant role when the demand-side creates the economies of scale, the more demand for a product leads to more value of the product. Platform markets have it in their nature to exploit these effects and become monopolies and oligopolies. The higher the product's value attracts more demand which creates more value and creates a self-reinforcing loop.

Digital platforms are often mediators between users, so-called multi-sided platforms. To capitalise on network externalities, Multi-sided Platforms (MSPs) cross national borders for an even bigger installed base. However, the cultural differences between countries can make or break a successful entry into another national market. Simply copying the monolithic algorithms has not been the answer recently admitted by Amazon (Liao, 2019). The question rises about what effect does culture have on these platforms' use and acceptance?

The adoption and use research in Information Systems have an elaborate history (Ajzen, 1985; Davis Jr., 1985; Fishbein and Ajzen, 1977). However, the cultural aspect of using and accepting digital platforms is often not included in the analysis of consumer use behaviour. Comprehensive models like UTAUT2 consider many variables; however, culture is not yet considered or included (Venkatesh et al., 2012). Successful digital platforms like Facebook, Netflix or Alibaba have shown that cross-cultural strategies are possible to increase adoption and along the way change existing business models, disrupt ecosystems, and shape new industries (Parker et al., 2016; Watanabe et al., 2017). However, with the departure of Amazon from China, it is not without its challenges.

Culture is relevant for that a nation will identify with certain preferences and qualities in different manners. It cannot identify unique individuals and culture is an elusive concept with significant difficulties for cross-cultural research. Having said that, research on culture has revealed that there is an advantage in using cultural dimensions to operationalise culture in marketing studies (Soares et al., 2007). Moving further to adoption models, research on mobile health investigated the culture effects on citizens behaviour (Dwivedi et al., 2016). This support the argument that cultural differences can act as a differentiating factor in the use of digital platforms across cultures (Bagchi et al., 2004).

1.2. Problem Statement

Digital platforms are transforming almost every industry today, as recognized by information systems literature and bring new challenges to understand and classify the complex nature and its intertwinement with institutions, markets and technologies (de Reuver et al., 2018). Using the classifications of de Reuver et al. (2018) we set out to define digital platforms that mediate between the users as multi-sided platforms. They support a multitude of interaction between the buyer and seller, but also with businesses and advertisement. Many and

Culture forms the basis of our expression and forms the identity among groups of people and is riddled with cultural impact. It will help in recognizing like-minded, an give a sense of belonging. Still, the influence of culture on digital platforms play an unexpected role (Ojala et al., 2020). The use of digital platforms depends on how the consumers perceive the platform and its benefits to them (e.g. Know Your Customer).

Factors determining the use of Technology have been investigated over time, specifically starting with Davis Jr. (1985). The Technology Acceptance Model (TAM) has been the foundation for many research projects, equally critiqued, but a foundation. TAM has been the precursor in the field of organizational adoption and use of technology, leading to the comprehensive Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003). The latest adaptation of UTAUT applied the adoption theory form the organizational field to the research field of consumer context (Venkatesh et al., 2012).

As mentioned in the previous section of this introductory chapter, cultural dimensions that occur in societies have not been considered variables that influence consumers' behaviour. Specifically, the cultural dimensions of Hofstede (2011), well-know for his work on culture and organizations. Hofstede has managed to investigate the field of culture since 1980 and steadily build and expanded on the dimensions that make up the national culture of countries (Hofstede, 1980). In other research projects, culture's importance is noted and investigated (Chik and Vásquez, 2017; Dwivedi et al., 2016; Lee et al., 2007; Nakayama and Wan, 2019), showing a connection to the use of digital platforms, but not yet quantified.

Using the cultural frameworks established by Hofstede (Hofstede, 1980, 2001, 2011; Hofstede et al., 2020) and combining them with UTAUT2 (Venkatesh et al., 2012), could prove the importance of cultural aspects in digital platform use. Therefore, we argue that cultural dimensions differences are relevant when investigating consumer usage behaviour of digital platforms. In this project, data is gathered to corroborate the model that assesses culture's relationship to the use of multi-sided platforms. The importance of culture is known amongst scholars; however, the implications for the academic field have not been quantified, showing a need for new knowledge in this field.

1.3. Research Objective

This project aims to determine if culture is a differentiating factor in the acceptance and use of multi-sided digital platforms. This study looks at online food delivery platforms to assess the impact of culture on multi-sided platforms. Online food delivery platforms are typical multi-sided platforms, with a service orientation on mediating between two user groups, both restaurants and consumers use the platform. This project uses the innovation adoption theories, such as UTAUT2 and correlating that with cultural dimensions, tested by Hofstede's Value Survey Module (VSM). A combination of these theories will establish a model for the relationships that indicate how national culture on the individual level influences the acceptance and use of online food delivery platforms.

This thesis uses online empirical data to assess the relationships between cultural dimensions, UTAUT2, and behavioural intention culminating in the acceptance and use of multi-sided platforms. This study recruited participants from two countries, namely: the Netherlands and Germany to test these relationships.

The results of an online survey will be analysed for the relationships between culture and the use of multi-sided platforms, in the context of online food delivery platforms. Future platforms can plan strategies with an awareness of the cultural influence on the use of their platforms can have the ability to plan for this impact. Possibly even lessening the influence of cultural differences on the use of multi-sided platforms by personalising their platform service to a national level of culture or even the individual cultural tendencies.

1.4. Research Questions

With the concepts and expected theoretical model, the proposed research sub-questions will answer the following research question. As mentioned in the introduction, the main research question is:

- What is the effect of cultural dimensions on the use and acceptance of multi-sided digital platforms?

The research sub-questions limit the research project's scope to answer this main research question (MRQ). Previously introduced theoretical concepts form the academic boundaries, leading to the following research sub-questions. A literature review will align the theoretical concepts with answering to the claim that culture affects the acceptance and use of multi-sided platforms:

1. What academic theories have been formulated on the effect of culture on the use of multi-sided digital platforms?

Translating the literature review of platforms, behaviour intention and use factors, and cultural dimensions to a conceptual model for analysis in this research project. The effect of culture in the acceptance and use of MSPs is investigated by examining two different cultures: Germany and the Netherlands. This limitation in the scope generates the second research question:

2. What is the effect of cultural dimensions on the use of MSPs in Germany and the Netherlands?

This sub-question indicates if the effect of cultural dimensions on acceptance and use is determined, how can this be interpreted? Asking for a third sub-question correlating the theory with the found effects, possibly with a focused expert interview for validation.

3. What do the results from the effect of cultural dimensions on the use of MSPs in Germany and the Netherlands indicate according to academic literature?

Finally, to indicate the implications of cultural dimensions on MSP, the fourth research question pertains to the impact of culture. To indicate recommendations towards the influence of cultural dimensions on the development or strategies of MSP-owners.

4. How can the cultural dimensions influence on the adoption of multi-sided platforms be integrated in platform competition strategy?

Answering the sub-questions will help formulate a conclusion and recommendation on the effect of cultural dimensions on the acceptance and use of multi-sided digital platforms and provide a basis for future research.

1.5. Research approach

An empirical study on cultural dimensions impacts on the acceptance and use of a multi-sided digital platform cross-culture. The methods used for this research project will be desk research in the form of a literature review. The impact of culture on MSPs is determined using a cross-culture cross-sectional structured questionnaire a single point in time. The analysis of the structured questionnaire is grounded in the theoretical framework. Further elaboration on the research approach, methodology, and analysis will be in chapter 4.

1.6. Reading Guide

The following chapters will guide the reader through this thesis project. Starting with elaborating on the research approach and methodology (Chapter 4). Continuing into the literature review (Chapter 2) for answering the first research question. The literature review provides the theoretical framework that will ground this project, shown in chapter 3 Conceptual model. This conceptual model and theoretical framework support the questionnaire for gathering the empirical data, of which the results and subsequent analysis is presented in chapter 5. Finally, the results' analysis will provide a conclusion and recommendation towards multi-sided platform development and strategies (Chapter 7). Which is preceded by the discussion and recommendations for future research in Chapter 6.

2

Literature Review

In this chapter, the theoretical basis is provided that forms the conceptual model for this project. Each section elaborates on a part of the concept and explains their relevance towards the cultural impact on acceptance and use of Multi-sided Platform (MSP). First the emergence and definition of digital platforms are described, followed by the theories on innovation adoption. Thereafter, Culture will be defined and a review will be presented on cultural relevance for innovation adoption, bringing the second and third section together. Finally, the cultural aspects and relevant dimensions correlated with the adoption of technologies will be the basis for the next chapter's conceptual model.

2.1. Digital Platforms

In the current research, everything with the word platform is attracting interest, and every research field is determining how digital platforms impact on-going developments. However, platforms itself are not always a recent innovation and some have been around a long time.

Platforms have been around ever since mass production aimed to serve multiple uses with similar products with only minor modifications. However, research has presented different perspectives on platforms, as innovation has led to platforms spanning entire supply chains or are entirely new industry ecosystems. These platforms are defined as technology platforms (Gawer, 2014). An example is the current MBQ-platform of Volkswagen Group the is the base for multiple models under different brands (Audi, VW, Skoda, Seat models all use the same base platform) as a supply-chain platform. Examples for industry creating platforms are Facebook and Apple iPhone with the AppStore.

Key differences in these platform models are the platform's architecture, how it is used by consumers or within the firm, its innovative capabilities, and how the platform is coordinated. Concerning Internal or Supply-chain platforms, the platform remains mostly private or exclusive for selected organisations on a contractual basis. The most exciting form of platforms are the industry platforms that create access and external capabilities. These innovations, primarily fuelled by digitalisation and Information Technology (IT), give a new perspective on platforms' capabilities. Digital platforms are transforming almost every industry today, as recognised by Information System (IS) literature and put forth a range of new challenges to understand and classify them. Characterised by their distribution and integration with institutions, markets, and technologies (de Reuver et al., 2018).

Digital platforms have created new forms of online services for consumers, creating new businesses and markets enabled through the internet, better known as E-commerce (Alt and Zimmermann, 2019). They are allowing organisations to develop and design globally offered services and products. In e-commerce, the primary trend is spotted in the development of online stores in which brands offer their products (e.g. Nike, Adidas, and Apple). Counter to this trend are the organisations that started collect-

ing different products and started offering them online under a single category (e.g. Zalando, Amazon, Alibaba, eBay, and Bol.com). However, these organisations are still integrated actors in the supply chain that deliver value to the customer. In the management research field, the platform is not categorised on its digital characteristics, only on an organisational level (Gawer, 2014; Thomas et al., 2014).

The digital platforms that this research project is interested in are built from the following definitions. Considering the platforms' technology and digital aspects as essential, they are the foundation for the ecosystems they create (Thomas et al., 2014). According to de Reuver et al. (2018) definitions in the core concepts of digital platforms has multiple views, technical, sociotechnical, and organisational. The technical view: "An extensible codebase to which complementary third-party modules can be added." Sociotechnological view defines digital platforms as: "Technical elements (of software and hardware) and associated organisational processes and standards." There is also a dual perspective on the ecosystem created with these digital platforms. It is essential to understand the differences in definitions compared to digital platforms. From a technical perspective, the ecosystem is: "A collection of complements (applications) to the core technical platform, mostly supplied by a third-party." The ecosystem's organisational view is defined as: "Collection of firms interacting with a contribution to the complements." Finally, in a digital platform context, there is a type of platform defined with the distinct function to mediate between different groups of users, i.e. buyers and sellers, under the concept of MSP. These platforms operate in a multi-sided market where value is created to bring distinct groups together and leverage the network effects when the number of participants from either group increases. This research project focuses on the market between distinct user groups, where a platform can leverage its network effects for profit, called Multi-sided Digital Platforms.

2.1.1. Multi-sided Digital Platforms

As platforms are not an innovation, digital platforms enabled through IT have shaken up the standard organisational forms in pipeline and manufacturing businesses. The digital MSP business models have become a significant disrupter to these business models and are organised around new forms of value creation and capture. Zhao et al. (2019) studied the state of the phenomenon MSP business model and found that it has been relatively under-theorised. Bringing together the prior literature on the phenomenon, Zhao et al. (2019), conceptualises MSP with different characterisations.

To start, MSPs' perspective as intermediaries for value exchanges between two markets of users and producers (Gawer, 2014; Hagiu and Wright, 2015; Parker and Van Alstyne, 2005; Rochet and Tirole, 2003). Definitions that characterised MSP as: "networks that bring together two or more distinct types of users and facilitate transactions among them" (Cennamo and Santaló, 2015, p.12) or as McIntyre and Srinivasan (2017, p.143) proposed: "interfaces that can serve to mediate transactions between two or more sides". Firms that restructure boundaries of organisations form selling products towards facilitation of economic exchanges between related user groups. Mediating user interactions and not control the linear activities like manufacturing platforms that build a family of related products (Gawer and Cusumano, 2014; Thomas et al., 2014). MSPs do not take ownership of products but rather depend on resources (e.g. skills, ideas, physical assets) and activities controlled and provided by agents on different sides of a market (Adner and Kapoor, 2010; Boudreau and Jeppesen, 2015; Thomas et al., 2014).

With the role of connecting different sides of the market, it differentiates from manufacturing or product platforms that optimise a product or a family of related products with a network of suppliers (Gawer, 2014). Here is the difference with Volkswagen (VW) Group that operates a manufacturing platform with multiple suppliers worldwide. Using its platform VW Group leverages exchange relationships to access external competencies, share products and services across different car models, and stimulate product development with and among its supplier base. VW Group has a central orchestrating role but is a product-centric business focused on ownership and sale of products. The interaction of VW Groups' suppliers with its customers is not required; therefore, the contrast with MSPs is that interaction between different sides is not a condition for the value creation in manufacturing.

2.1.2. Online Food Delivery Platforms

Online Food Delivery Platforms (OFDPs) are an internet-based service through which consumers can order food and get it delivered to their homes. With the emergence of the internet and the ability to connect to more and more users, restaurants could hand in a part of their business that was not a core functionality to a new service platform. This service is accessible on any device with a link to the internet and especially in the current pandemic (COVID-19) a popular service.

OFDPs are a typical example of a provider that does not provide any products or services and only acts as a go-between for consumers and sellers to meet (Pigatto et al., 2017). An OFDP creates value for the customer in a process that includes several actors, i.e. service provider, client, and others, no need for marketing, handling the phone for orders, payment services, or drivers to manage. All services that could be handled by a service provider that would supply these restaurants with demand. For the demand part, the aggregation of restaurants and standardisation of ordering meant that the consumers could reduce their search costs, transaction costs, and get more transparency. Small businesses could benefit from greater demand and more consumption without spending vast amounts on marketing (Yeo et al., 2017). To offer services and goods, creative use of delivery methods has become a source of differentiation and innovation for companies that seek to offer services and products.

Hence the emergence of different OFDP like Thuisbezorgd.nl, JustEat, UberEATS, Deliveroo, Foodpanda, GrubHub, Foodora and more. These OFDPs have been competing in different markets since the early 2000s. However, as they rely on network effects to gain enough margin for profits, the battle for these platforms' users pushes the expansion of their service areas. Challenges arise during these expansions that the new markets do not adopt and use these platforms as fast as expected or needed for profitability, as shown in the introduction with Amazon (Liao, 2019).

2.2. Innovation Adoption

Adoption and use of technology innovation is examined, studied, and modelled over decades. The conception of models on behaviour are proposed by Fishbein and Ajzen (1977) with Theory of Reasoned Action (TRA). This theory has been the basis for extension into Theory of Planned Behaviour (TPB) by Ajzen (1985) and TAM created by Davis Jr. (1985). The most recent explanatory model that has been developed is Unified Theory on Acceptance and Use of Technology 2 (UTAUT2) by Venkatesh et al. (2012). This section provides the background on innovation adoption theories and provide the concepts that will be relevant for connecting adoption of technology to Culture.

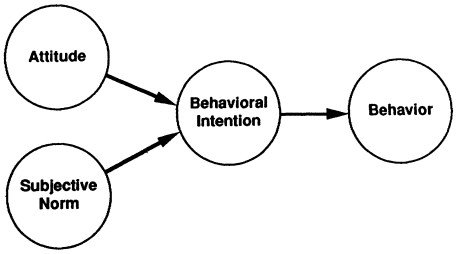

Figure 2.1: Theory of Reasoned Action

2.2.1. Adoption Theories

The basis of adoption theories lies in concepts from psychology on behaviour where the assumption is that intentions cause behaviour. TRA starts with that behavioural intention, which is directly related to behaviour, results from information or a belief that a particular behaviour will lead to a specific outcome (figure 2.1). According to Fishbein and Ajzen (1977), the behavioural intention is preceded by beliefs divided into two conceptually distinct sets: Attitude and subjective norm. The variables outside of the model are believed to influence only intentions through attitude or subjective norms, and not directly behavioural intentions.

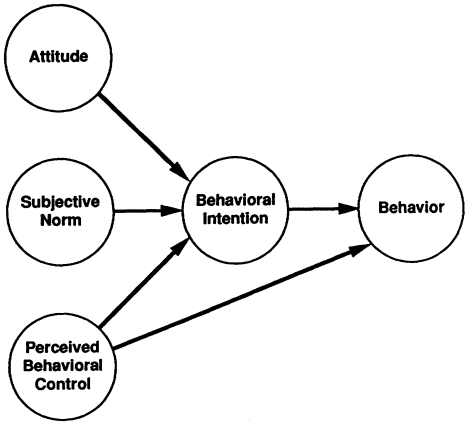

Figure 2.2: Theory of Planned Behaviour

In extension to this theory, after testing, a variable on the notion of perceived control over the behavioural outcome is added to the theory, resulting in the theory of planned behaviour (Ajzen, 1985). This extended the theory on reasoned action to include the beliefs that the possession of resources and opportunities influence behavioural intention and behaviour (Madden et al., 1992) (figure 2.2).

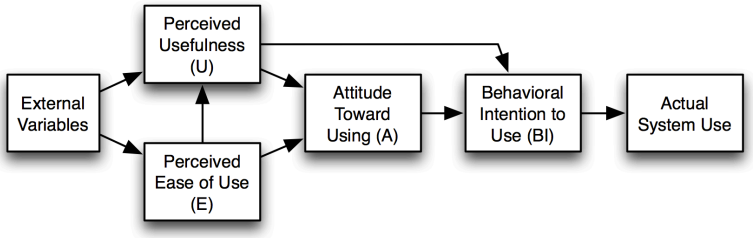

Figure 2.3: Technology Acceptance Model

TAM, as shown in figure 2.3, relates theories on behaviour to the information systems domain (Davis Jr., 1985). It improves the understanding of the user acceptance of ISs and provides insights into successful designs and implementation of ISs. During the development of TAM, the theoretical model of user acceptance on information systems was tested experimentally and extra values for assessment were added: Perceived Usefulness (PU) and Perceived Ease of Use (PEoU). These factors influence the technology adoption to use; perceived usefulness is defined by Davis Jr. (1985, p.26) as: ”The degree to which a person believes that using a particular system would enhance his or her job performance.” To clarify, meaning the perception that technology will be useful for the intended goal of the user. The factor perceived ease of use is defined as ”the degree to which an individual believes that using a particular system would be free of effort.” (Davis Jr., 1985, p.26) The barriers that adoption of a new technology system would create could be lowered if the technology is ease to use.

Since the development of the TAM, it has been continuously researched and expanded. Notable improvements have been TAM 2 (Venkatesh, 2000; Venkatesh and Davis, 2000) in which the model is extended to include cognitive settings, such as the job relevance, output quality, and demonstrability, in an attempted to counter the critique received (Venkatesh, 2000; Venkatesh and Davis, 2000). This contributed to the development of UTAUT by Venkatesh et al. (2003). UTAUT is a complementary theory on the different and extended TAMs, by integrating the theories the model is found to perform better than the individual models (Venkatesh et al., 2003).

Still, iterations and extensions are proposed to the TAM, with the latest integrating experience as a moderating variable (Venkatesh and Bala, 2008). Here the model starts with computer anxiety relation to PEoU moderated by experience and also moderating the relation on the relationship of PEoU with PU and Behavioural Intention (BI). In figure 2.4 the integrated relationships are represented with thick lines.

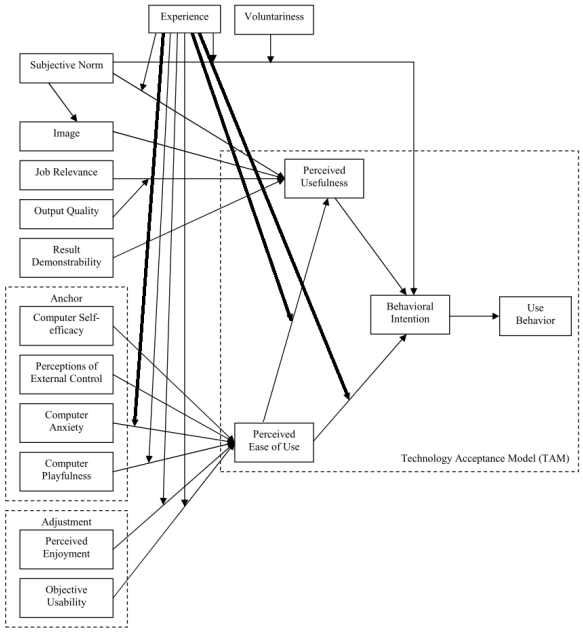

Figure 2.4: Technology Acceptance Model 3 (Venkatesh and Bala, 2008)

From the perspective of an organization, IT implementation is highly dependent on when the intervention of such IT systems is planned. In this extension of TAM, the researchers explore how the pre-and-post implementations interventions influence IT acceptance. As the interventions can impact

individuals' experience in the organisation, the acceptance of new IT systems can be managed. If innovative IT systems threaten individuals' routines and habits, the experience will resist IT implementation. Interventions can change individuals' perceptions towards new IT systems, suggesting that hand-on experience such as training in these new systems has a positive influence on PU and PEoU.

2.2.2. UTAUT2

As mentioned in the previous paragraph, the theoretical extension to TAM3 is to extent perceived usefulness and intended use in a social context and the perceived ease of use in cognitive settings. The social context is to determine the influence of subjective norms, voluntariness, and image. This means intervening to embed experience with the IT systems to ensure that its moderating effect on PEoU is positive.

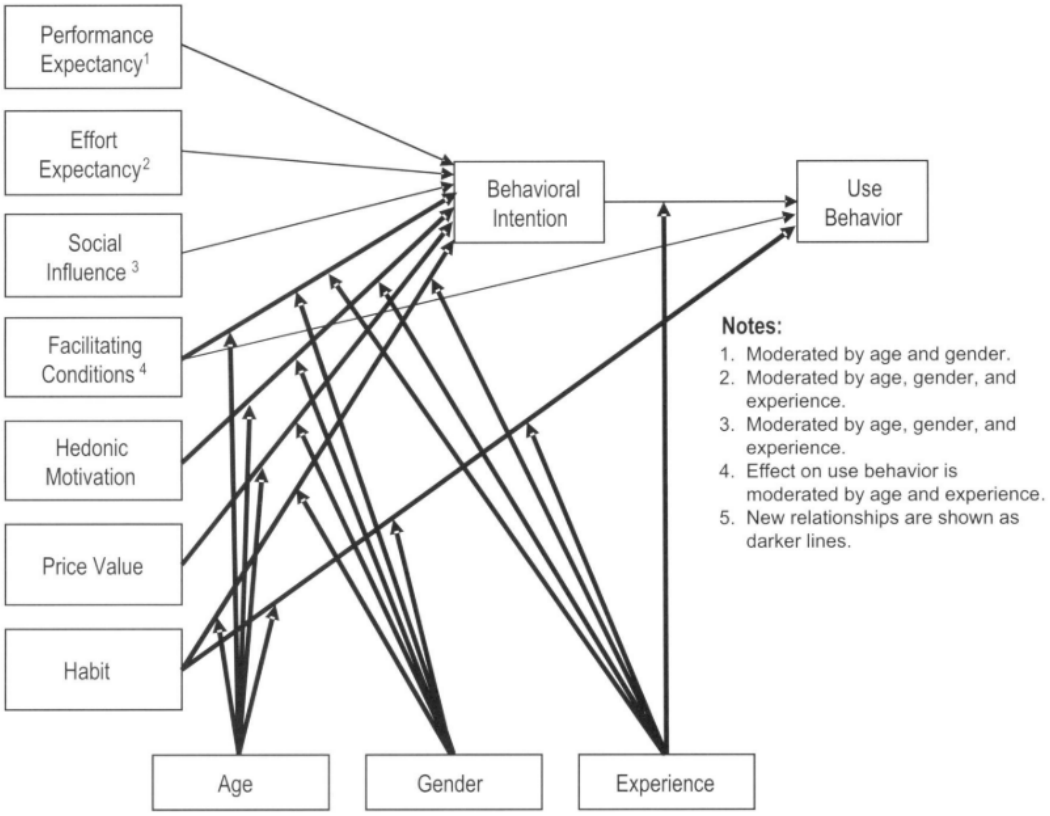

Figure 2.5: Unified Theory of Acceptance and Use of Technology 2 (Venkatesh et al., 2012)

However, in all of the adoption theories most of the interest is on the adoption of technology in an organizational setting, business cases. In the development of a TAM extension for e-commerce, researchers found that the current form of TAM cannot fully explain consumer behaviour (Fayad and Paper, 2015). Therefore, the most recent update and extension of UTAUT, UTAUT2, is an attempt to formulate a theory on the consumer adoption perspective. UTAUT2 iterates how the constructs in an organisational setting can be transformed or translated into consumer adoption theory (Venkatesh et al., 2012). UTAUT2 adds three more constructs to UTAUT; hedonic motivation, price value, and habit. These individual differences are added to extend the UTAUT to the consumer use context, whereas the earlier theories on adoption primarily focused on the organisational context. Prior research on the general adoption and use of technologies is added, and some existing relationships in the original UTAUT are modified. Introducing new connections from research on consumer behaviour and IS that various constructs on hedonic motivations (joy) was important in consumer technology use (Brown et al., 2006; Nysveen et al., 2005; van der Heijden, 2004). This is correlated with consumers responsible for the cost of technology adoption, and this construct with relation to cost/price is a vital adoption

decision for consumers (Brown et al., 2006). Also, recent research challenged TAM on the notion that behavioural intention predicted technology use with the theoretical construct of habit (Limayem et al., 2007). Habit is reflected in the result of prior experiences, now including the aspect found in TAM3 that moderates PEoU, PU, and BI. The experience will provide feedback for individuals on which beliefs and behaviour are established. Prior use leads to experience and over an extended period of interaction forms a habit. Previous research on experience and prior use is a strong predictor of future technology use (Kim and Malhotra, 2005; Limayem et al., 2007).

2.3. National Culture

Recalling the first research question from the previous chapter, ”What academic theories are formulated on the effect of Culture on the acceptance and use of multi-sided digital platforms?” the importance of defining and operationalising the cultural construct is vital in finding the answer. Culture is known to significantly influence the adoption, use, and continuance of IT. Technology features are designed to fit with a particular set of cultural characteristics, which do not have to correspond to other sets of cultural tendencies. The importance of cultural characteristics is apparent; however, designing technology to be compatible with every characteristic is nearly impossible. This aspect of Culture-technology fit has been investigated over the past decades (Lee et al., 2007). Innovations that users adopt and use have been followed in research by Gallivan and Srite (2005) and by Hillier (2003), where some equated Culture with country (Honold, 1999), which in current globalisation trends is a crude under-representation of the many Cultures that exist within. Diversity of people across the globe and their cultural backgrounds is reflected in their behaviour towards technologies. This influence of culture results in a complex form of interaction with users and challenges for current platforms competition strategies on the data that makes a platform valuable (Alt and Zimmermann, 2019).

2.3.1. Defining Culture

The definition of Culture is a popular point of discussion amongst scholars in social, anthropological, and management studies. Cultural anthropologist Kroeber defines Culture as: ”The historical differentiated and variable mass of customary ways of functioning of human societies” (1952, p.157). Iterating on this Kroeber and Parsons applied this definition to clarify it in a cross-disciplinary definition as: ”transmitted and created content and patterns of value, idea’s, and other symbolic-meaningful systems as factors in the shaping of human behaviour and the artifacts produced through behaviour” (1958, p.583). More recently, Hofstede defined Culture in organisational research as: ”the collective programming of the mind that distinguishes the members of one group or category of people from another” (Hofstede, 2001). Collecting individuals’ cultural characteristics made up of psychological traits, attributes, and characteristics show that Culture manifests on an individual level. Putting Culture in a perspective that it can vary on an individual scale, offered room for arguments that Culture cannot be generalised to a single country (Baskerville, 2003). However, when measuring cultural characteristics on an individual level as a variable, cultural dimensions can be integrated with IS research (McCoy et al., 2005b). To what extent the findings are used is dependent on the design of the research method. This argument stresses how the results from surveying with the cultural value model from Hofstede are interpreted. However, Ford, Kotzè, and Marcus (2005) find that Hofstede’s cultural dimensions model is an appropriate theory for research into the effects of Culture on cross-cultural usability.

2.3.2. Cultural Dimensions

The interesting part of Culture is how it influences decision-making, adoption and diffusion of innovation, and product ownership. The implications of Culture on the behaviour regarding branding, marketing and other components that are part of business strategies are frequently researched (de Mooij and Hofstede, 2011). Most well-known researcher on Culture is Hofstede, actively researching the effects of Culture in organisations and consumer behaviour since 1970. The first construction of the cultural dimensions resulted in only four dimensions (Hofstede, 1980), Power Distance, Individualism, Uncertainty Avoidance, and Masculinity. Continuous research has updated and extended the model to form

a dimensional national Culture model. A nation's Culture is scored across six dimensions that explain differences in product use or consumer behaviour (Hofstede et al., 2010). The second edition of Hofstede's Culture's Consequences, on the market since 2001, is updated with more data adding to the significant correlations, proves the dimensions are still relevant. Subsequent research appears to corroborate the findings and support the dimensions defined by Hofstede (de Mooij, 2003, 2019; Hofstede, 2001, 2011). The final cultural dimensions defined by Hofstede are as follows (Hofstede et al., 2010, 2020; Suzuki and Sui Pheng, 2019);

1. Power Distance Index (PDI) - The distance that is accepted by less powerful people/members of society on the distribution of power. Larger distances represent more acceptance with greater inequality in the distribution of power.
2. Uncertainty Avoidance Index (UAI) - societies tolerance for ambiguity, how comfortable are the members of society in situations that do not follow clear, structured rules. Control is something that is determined by others.
3. Individualism Index (IDV) - the extend to which a person feels part of a larger group and how much that group is expected to ask of the individual. Opposite to individualism is collectivism, focusing on the we-mentality.
4. Masculinity Index (MAS) - The comfort that the society has with the gender roles being performed by the other gender. Femininity in Culture represents caring and sympathy for weaker members of society. For a more masculine society, the roles are more traditionally defined, men do not cry and admiration for the strong. Women care and deal with feelings, and fathers deal with facts.
5. Long-Term Orientation Index (LTO) - With long term orientation, the focus is on improvement, saving and investing. Success is the product of effort, adapting to the circumstances and resilient to a setback. The opposite is the short term orientation, found in areas like the U.S.A., African, and Muslim countries. The tendency is to spend and consume, to stay constant and similar. Members of these societies are nationalistic and attribute success more to luck.
6. Indulgence Versus Restraint Index (IVR) - Indulgence versus Restraint is complementary to the Long Term Orientation dimension. This dimension stems from happiness research, where indulgence represents the gratification of basic human desires, enjoying life and having fun. Restraint controls this gratification element by strict social norms.

This research project compares the countries, The Netherlands and Germany. At the time of writing this report, the following differences are published by Hofstede in table 2.1. As can be seen in table 2.1, the

Country	PDI	UAI	IDV	MAS	LTO	IVR
Netherlands	38	53	80	14	67	68
Germany	35	65	67	66	83	40

Table 2.1: Hofstede's cultural dimensions Country Comparison (Hofstede et al., 2020)

difference on some of the dimensions are not significantly large, but others differ significantly (e.g. IDV, MAS, LTO). This similarity and the geographical location of the countries is base for the comparison. Examining if the remaining differences in Culture have significant impact on the acceptance and use of technology remains unexplored.

2.4. Culture and Technology Acceptance

In the explanation of acceptance and use of technology, the theories rely heavily on behavioural aspects in human psychology (Shareef et al., 2013). Specifically, behaviour is one of the main streams of research in IS fields to explain the adoption and use of technology as outlined by Straub et al. (1997),

Zakour (2004), and Myers and Tan (2002). Prime example of this the TAM developed by Davis Jr. (1985) as mentioned in section 2.2.1.

The influence of Culture on the acceptance and use of technology has been investigated by several scholars, adding a Culture as a moderating component to TAM (Alshare et al., 2011; Nistor et al., 2014; Srite, 1999; Zakour, 2004). However, several scholars call for papers that investigate the direct influences of Culture on technology acceptance (McCoy et al., 2005a,b) They argue that because of the increasing globalisation, the business environment is in need to understand the influence of Culture on the acceptance and use of IT. When testing the TAM model to account for Culture, the model did not explain differences across Culture (Straub et al., 1997).

Therefore, Srite (1999) and Srite and Karahanna (2006) started to examine the original TAM study and how cultural dimensions can moderate acceptance of IT. Their findings support that National Culture affects the acceptance and use of IT, with larger cultural differences (i.e. between China and the USA). Hwang (2005) continued to investigating some of the aspects in the acceptance and use of Enterprise systems but with limited contribution to the field. However, even in the period (1999-2006) in which Srite and Karahanna (2006) studied the topic of national Culture and acceptance of technology, little work had been done to integrate the two (Veiga et al., 2001).

Putit and Arnott (2007) have investigated the moderating effect of Culture has been adjusting for the differences within a national Culture. They assume that Culture is not monolithic, but the cross-cultural impact is present. Furthermore, for a more precise influence new variables have to be formulated for measuring these micro-Cultures (Putit and Arnott, 2007). In the comparison on a macro-level, the national Culture is perceived to affect the acceptance and use of IT (Schepers and Wetzels, 2007). The continued interest of the impact of Culture on technology acceptance is aggregated for a single cultural dimension (Uncertainty Avoidance) (Cardon and Marshall, 2008).

In their study, Cardon and Marshall (2008, p.107), provided support for the argument that Uncertainty Avoidance significantly impacts technology acceptance. The effect of Culture in countries that have large cultural differences received more attention (i.e. Peru and the USA or Japan and Switzerland) (Cardon and Marshall, 2008; Hasan and Ditsa, 1999; Straub, 1994; Tan et al., 1998a; Veiga et al., 2001). However, little is known about the impact of Culture on acceptance with minor differences in national Culture. In a study that examined countries characteristics in adoption timing, Sundqvist et al. (2005) argued that if there is cultural similarity, the adoption behaviour is similar. In the results, the diffusion patterns seem to be similar but no arguments are provided, whether Culture could be influential when these patterns differentiate.

3

Conceptual Model

3.1. Culture, Use & Hypothesis Development

Culture is something that binds individuals together and influences our behaviour, whether we acknowledge it or not. The definition of culture is difficult, but it is well known that something connects and disseminates between groups that we belong to. Culture is a challenging variable to research because of the multiple divergent definitions and measures of culture. Furthermore, the theory is built from a well established but not free of critique notion that the national culture is index-able in six dimensions (Hofstede et al., 2020; Suzuki and Sui Pheng, 2019). This is not meant as an individual measurement and focuses on connecting a group of people who share certain values. As these values vary because of the circles that we interact with, one can imagine that the behavioural intentions vary as well.

With digitalisation in organisations, culture is developing international established values. However, it also shows how different cultural values can be cross-country. Capturing the cultural dimensions developed for the national culture framework by Hofstede (2001) allows organisations to plan for the differences. In any sense, culture has been recognised to have a crucial role in the behaviour intentions of consumers (Posey et al., 2010; Shareef et al., 2013). This is supported by the extended cross-cultural effect found in the behaviour intention on m-health, which expanded on the previous notion (Dwivedi et al., 2016). Also, in the service industry to which the OFDPs belong, the consumers' behaviour was found to be culture-bound (Espinoza, 1999).

As the specific indexes, such as Individualism Index (IDV), Uncertainty Avoidance Index (UAI) contribute to the overarching notion of culture, cultural dimensions can be established as the concept that influences behavioural intention. Cultural dimensions can explain the differences in behavioural intentions to the degree that cross-country comparison on the intention to use OFDPs will be influenced.

However, not all dimensions are yet proven to influence behavioural intent or use of technology systems (Lee et al., 2007). The following dimensions, IDV, UAI are ranked high in studies on the relative importance of cultural traits in technology user-interface design (Marcus and Baumgartner, 2004). This interpretation of user-interface design has led to control studies in innovation adoption, and there were similar results found.

The other dimensions that got attention by scholars are Masculinity Index (MAS) and Power Distance Index (PDI). In 1993 the hypothesis is drawn that IS management should consider many variables when organizations transcend national borders (Burn et al., 1993). This study reviewed the recent findings from studies in globalised organizations and found evidence for significant impact of cultural dimensions with implications for IS management. This is supported by a study on the impact of culture on the adoption of IT in the context of Africa and the Middle-East (Hasan and Ditsa, 1999). The cultural dimensions PDI and UAI were found to have significant implications for the IT industry, based on fear

and risk aspects in behaviour.

The final dimensions, Long-Term Orientation Index (LTO) and Indulgence Versus Restraint Index (IVR), are the most recent additions to the cultural dimensions model defined by Hofstede and therefore have not yet been included in academic works on culture's impact on IT acceptance. In this study, all the dimensions are covered in relation to the behavioural intention and use to explore the complete conceptual influence of cultural dimensions on OFDPs. All the dimensions are explained and have correlating hypotheses; some will be based on a logical deduction of the definition of cultural dimensions. Some include references that prove in different contexts the influence of culture.

3.1.1. Power Distance Index (PDI)

Following the dimensions of Hofstede, we start with the power distance index. The definition of Power Distance is based on the perceived distance that a less powerful group accepts towards power, authority, and distribution (Hofstede, 2011). Its inequality is defined from below as more or less equal to the power distribution. In this definition, all societies are unequal, however, some more than others.

Smaller power distance relies on power that is legitimately given, and it is subjected to norms of good and evil. It allows for power distance through hierarchy which means inequality in roles but only because of convenience. More considerable accepted power distance is more matter of fact; power is not derived from legitimate reasons. The general sense for a larger power distance is that the less powerful group is told what to do and how to behave.

Powerful members in a society with a larger power distance are fearful of the open nature and empowerment of IT (Hasan and Ditsa, 1999). With this reasoning and based on smaller and larger power distance examples, the expectation in this project is that smaller power distance will accept and adopt technology faster than groups that accept a larger power distance. Giving the consumers and users more power, reducing inequality, is expected to be more readily accepted in groups of individuals that perceive smaller power distances (Tan et al., 1998b). Therefore, this deduction leads to the following hypothesis:

H 1. $PDI \downarrow \implies BI \uparrow \wedge USE \uparrow$
If a group of individuals score high on the Power Distance Index, the implication speaks that the Behavioural Intention and Use of OFDPs have a negative relation.

3.1.2. Uncertainty Avoidance Index (UAI)

The definition of uncertainty avoidance is not the same as risk avoidance; it is an index on a groups tolerance for ambiguity (Hofstede, 2011). In other words, what can be experienced from unknown, uncertain situations and how members feel comfortable or uncomfortable in unstructured situations. People that feel strongly to uncertainty avoidance concentrate on avoiding situations that have them feeling uncomfortable.

The tendency is that these groups have a low tolerance for risk and will belief in more fixed truths and expertise, look for stability, create formal rules, and reject ideas and behaviour that threaten these aspects. The other end of this spectrum is for so-called risk-takers and can be positively related to age but not gender or occupation (Hofstede, 2001). The characteristic found corresponding with high uncertainty avoidance is resistance to innovations, high formalisation, and constraining innovation with rules (Keil et al., 1994).

Risk-averse attitude implies an unwillingness to adopt innovations and only do so if their value has been proven in the market (Png et al., 2001). Studies have shown that the impact of risk-averse orientation tremendously influences the adoption and consequently the acceptance of technology by the accelerated pace that accompanies innovation (Hasan and Ditsa, 1999). Acceptance of technology will only happen for older and "safer" technology that has a proven track-record, frustrating the decision-process (Keil et al., 1994). Therefore, the following hypothesis is proposed:

H 2. $UAI \downarrow \Longrightarrow BI \uparrow \wedge USE \uparrow$
If a group of individuals score high on the Uncertainty Avoidance Index, the implication speaks that the Behavioural Intention and Use of OFDPs has a negative relation.

3.1.3. Individualism Index (IDV)

Previous work of scholars has identified the individualism/collectivism dimension as an important cultural trait. It represents a choice for a social framework in which people look after themselves and their interests. In contrast, collectivism leans towards a more cohesive social framework where people look after one another, and the groups' goals are prioritised above personal ones (Hofstede, 2001).

The characterisation of collectivism is that a group will use collective decision-making, leading to a delayed adoption process. This will hamper the progress of acceptance of technology but also influenced the quality of decisions (Mejias et al., 1996). Studies have shown in the acceptance of technology to support decisions that individualist societies thrive better with technology in the mix (Tan et al., 1998a). With a higher individualism index, the individual has more freedom to develop or try innovations. The individual society can experiment more and has a greater belief in their quality of decision making.

Studies have shown a positive relationship between a higher individualism index and a nations innovativeness (As cited in Van Everdingen and Waarts, 2003). With higher innovativeness, people are more ready to accept risks in using technology. The corroborating connection between individuals innovativeness and the direct effect this has on an innovation adoption is found to be significant (Lim and Park, 2013).

Therefore, logic follows that a higher individualism index score for a group of individuals will lead to a higher behavioural intent and use of OFDPs, as shown in the following hypothesis:

H 3. $IDI \uparrow \Longrightarrow BI \uparrow \wedge USE \uparrow$
If a group of individuals score high on the Individualism Index, the implication speaks that the Behavioural Intention and Use of OFDPs are positively related.

3.1.4. Masculinity vs Femininity (MAS)

Referencing to the distribution of values between gender in a societal characteristic. When ranging from assertive to caring, it is revealed in studies that assertiveness is perceived as masculine versus modesty and caring as feminine (Hofstede, 2011). Reasoning as follows, the competitive and assertiveness of masculinity would lead to more risk, which can be argued to lead to more innovativeness (Van Everdingen and Waarts, 2003).

However, if the innovations improve the quality of life and the user orientation of the technology is increased, a feminine society will accept the technology faster (Bagchi et al., 2004). This acceptance of technology relate it to higher intent and use of technology (Hasan and Ditsa, 1999; Myers and Tan, 2002). This is dependent on the design of the technology as well, the notion found in research is that the more user oriented the technology is, the more feminine societies feel comfortable using the technology. Multi-sided platforms and as such online food delivery platforms are more user-oriented, this increases its use in feminine societies.

Therefore, the acceptance and use of OFDPs is lower in masculine societies, resulting in the following hypothesis:

H 4. $MAS \downarrow \Longrightarrow BI \uparrow \wedge USE \uparrow$
If a group of individuals score high on the Masculinity Index, the implication speaks that the Behavioural Intention and Use of OFDPs are negatively related.

3.1.5. Long Term Orientation (LTO)

A survey identified this new dimension in a study by Chinese scholars; it was then known as Confucianism and associated with hard work. Later this was added to the model of Hofstede's dimensions to include economic growth in the cultural dimensions and renamed it: Long Term vs Short Term Orientation (Hofstede, 2011; Hofstede et al., 2010). It revolves about the notion of thrifting and endures in service to others.

Long term orientation has not yet been included in scholarly work toward explaining the behavioural intention or use of technology. To work hard and put effort will mean that success is earned, versus the belief that luck influences the outcome. The aspect attributed to Long- over the short-term that is most relatable to using OFDPs is the notion of saving and investing in the future. Short-term orientation is in this aspect more on the scale of social spending and consumption (Van Everdingen and Waarts, 2003).

With the notion of time, a study has found that if there is a need for long term planning, the use of Multi-sided platform is more for the rapid changing environments (Hasan and Ditsa, 1999). If the context gives the ability to plan ahead, organise for unexpected events, found with long term orientation, the use of multi-sided platforms could be lower. With this difference, logically, the expectation for the behavioural intention and use of OFDPs is higher if the Long-term orientation index is lower and higher with a more short-term orientation. The OFDPs are a clear example of spending that could very well be avoided to save money. The index is proposed as a negative relation towards OFDPs in the following hypothesis:

H 5. $LTO \downarrow \implies BI \uparrow \wedge USE \uparrow$
If a group of individuals score high on the Long Term Orientation Index, the implication speaks that the Behavioural Intention and Use of OFDPs has a negative relation.

3.1.6. Indulgence versus Restraint (IVR)

One of the latest additions to the dimensions of Hofstede, using the World Value Survey items and as a complementary index to Long Term Orientation. The focus for this index is in the aspect of happiness (Hofstede, 2011; Hofstede et al., 2010). "The way in which society allows for relatively free gratification and dopamine addiction for basic human desires. Restraint is shown in cultures that control this gratification and regulates it using strict social norms" (Hofstede, 2011).

Differences between restrained and indulgent cultures are seen as how many people think of themselves as happy or how important leisure or sport is. The food aspect is also essential here, as the notion is that obesity is more present in indulgent cultures if there is enough food available. In the present time, with the Corona-virus restricting many leisure activities, the expectation is that more people have enjoyed themselves. This higher indulgence factor is expected to result in higher use of OFDPs, hence the following hypothesis:

H 6. $IVR \uparrow \implies BI \uparrow \wedge USE \uparrow$
If a group of individuals score high on the Indulgence versus Restraint Index, the implication speaks that the Behavioural Intention and Use of OFDPs are positively related.

3.2. Conceptual Model

Derived from the hypothesis the conceptual model is represented in the following abstract model. It shows the adapted theoretical models that are used in this research project but the model is derived from the previously stated hypothesis.

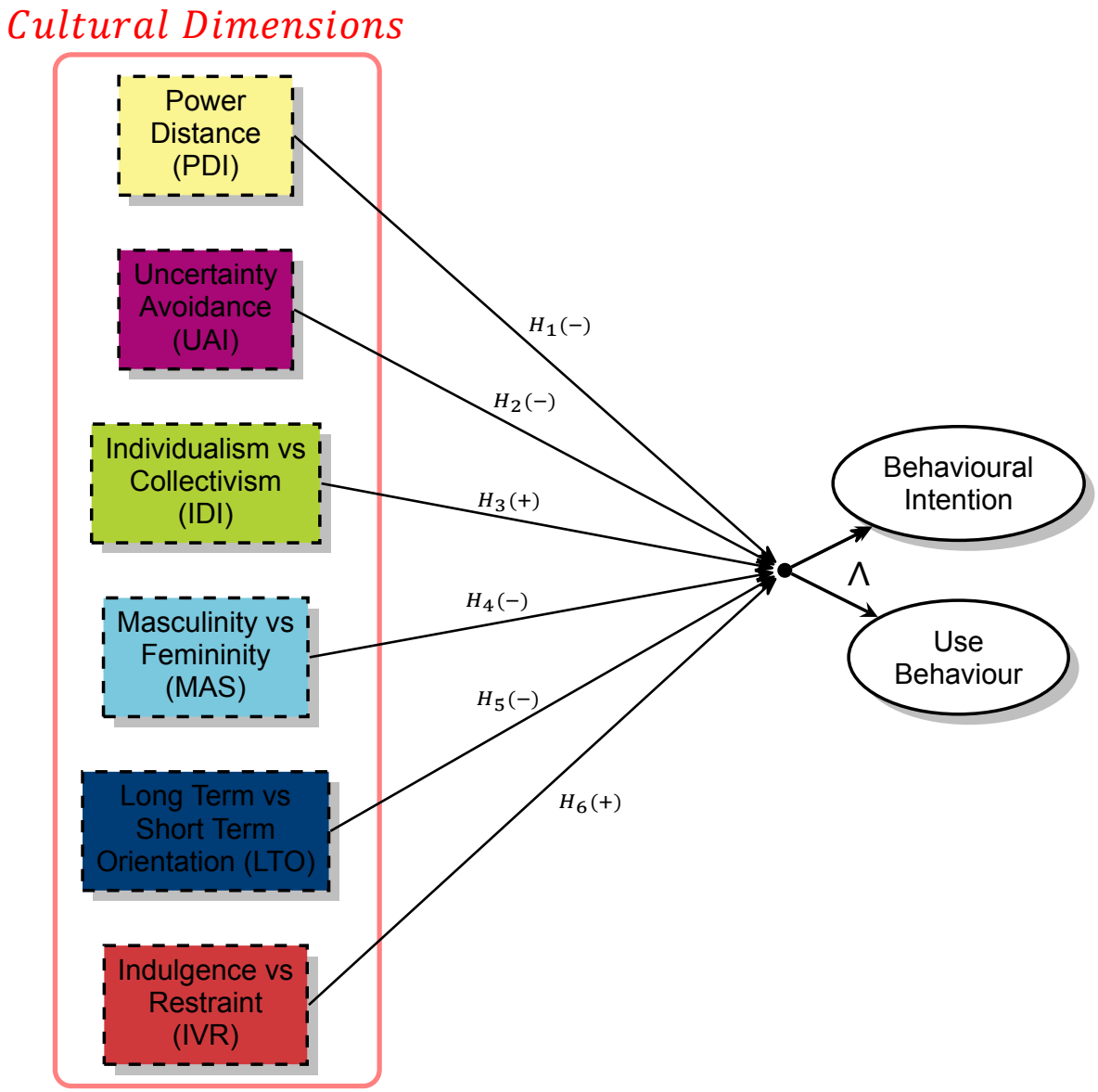

Figure 3.1: Research Model Cultural Dimension Relationship with Behaviour (Intent and Use)

4

Research Design

The following chapter describes the investigated case, research method, and measurement scales used in this project. First, it describes the MSP case and explains why online food delivery platforms were chosen for this project. Thereafter, the process of this project is explained, elaborating on the presented literature review and conceptual model development. It will also contain the procedures in administering the questionnaire, describing the sample's characteristics and presenting the results of the scales used. Finally, the cultural dimensions that the literature provided are compared with the results of the survey's values to assess the validity of the results.

4.1. Case Description

The growth and potential of multi-sided platforms depend significantly on the acceptance and use of mobile internet communication (i.e. smartphones and tablets). MSP have allowed the B2C-industry to adopt Online-2-Offline (O2O) commerce, integrating platforms that mediate between the offline businesses and the online ordering and delivery services for consumers. The prime example of these MSPs are Online Food Delivery Platforms (OFDPs). The value provided by OFDPs is recognized as alternative strategies to increase sales and revenue while increasing convenience for consumers (Cho et al., 2019). Figure 4.1 is a simplified model of the online food delivery platform industry. The main

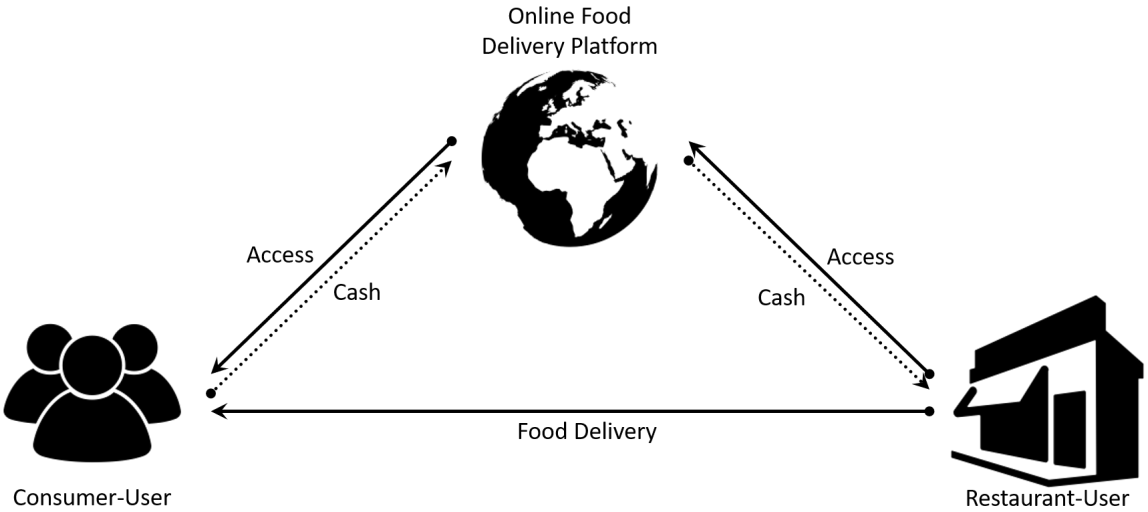

Figure 4.1: Online Food Delivery Model - Simplified

goal for the platform is to acquire as many users, both consumers and restaurants in this industry, for three main goals: reduce search costs, transaction costs and aggregate audiences (Gunden et al., 2020). The platform can then leverage these network effects as value to its customers for profit.

First, the reduction of costs is achieved in search costs for the consumers in the aggregation of the restaurants in one convenient search-able platform. For the restaurants, the search costs are reduced by aggregating the consumers, no need to market directly to the consumers, advertise on the platform and use their reach to generate revenue. Secondly, transaction cost can be bundled for the restaurants, only paying one-time for all transactions on the platform. In the meantime, the ease of use for the consumer is not diminished but perhaps even increased when it concerns payment methods (i.e. Cash, Apple Pay, Google Pay, and iDeal). Finally, platforms create an aggregated result of the food delivery options, allowing for new opportunities in delivery options and services, targeted advertisement and in-platform advertisement, sales-software, and other complementary services.

4.1.1. Country Selection

For this project, the objective is to assess how cultural dimensions influence the use of OFDP. This objective limits the broad industry of MSP but still focuses on the characteristics of MSPs positive network effects. The platforms' criteria are primarily market share in the compared countries. The compared countries are chosen through limitations on the authors behalf and other criteria.

First, the gathering of the respondents was limited to nearby countries due to the current pandemic (COVID-19). Second, to reduce the impact of differences in concepts when translating the questionnaire, languages were chosen that the author was reasonably proficient in. Initially, the author had planned to do personal interviews in both countries, which was also cancelled due to Covid-19.

Furthermore, the acceptance and use of OFDP in the Netherlands and Germany has been significantly different over the past 20 years since the emergence of OFDP, i.e. Thuisbezorgd.nl (Founded in 2000) and Delivery Hero (Founded in 2011). This difference in the start-up of the industry's biggest players is interesting from an acceptance and use perspective of digital technology, leading to one of the reasons to select the Netherlands and Germany. Although Germany and the Netherlands seem to be quite similar at first sight, there are differences in the acceptance and use of digital technology. Certain values in the cultural dimensions are different comparing the Netherlands and Germany, as shown by research on cultural dimensions by Hofstede et al. (2020) in section 2.3.2, table 2.1.

Moreover, the author is aware that cultures are not static over time, but to account for this the country comparison is part of the research project. This will ensure that at the time of comparison the cultural dimensions of both countries are measured at the same time. The comparison between the Netherlands and Germany will be presented in the Results and Analysis chapter 5.

4.2. Method

In this section, the justification of the research method in this project will be explained. The research project is set up as a quantitative exploratory research project following deductive reasoning from the literature review in chapter 2. The literature shows that the interest in the cultural effects on the use and acceptance of technology is relevant. However, the connection from the UTAUT2 is not investigated by scholars before. To test the hypothesis that culture affects the use and acceptance of technology a quantitative method is required. This will allow the examination of the connection between cultural dimensions and the use and acceptance of technology by consumers.

By selecting popular OFDPs that are both competing for network effects the sample size remains large for generalized results. If the sample size can be big enough the contribution of this research project can be a valid foundation for future research.

With the selection of the different countries and the authors limitations, the chosen quantitative method is a survey that allows to gather a large sample size in a short amount of time. With a survey

and a sufficient sample size the results can be generalized and add to the current knowledge on the influence of culture on multi-sided platforms.

In the following sections the survey procedure will be described as well on how the author gathers the participants consent with a section on the letter of informed consent. Furthermore, in this chapter the data collection through the different survey-channels will be discussed and the boundary conditions that have been set as the limits for this survey will be included. Finally, the number of participants that were valid for analysis and the measurements that have been used conducting the survey.

4.2.1. Survey Procedure

An online survey strategy was used in this research study. A survey is the complete system for questionnaires, delivery of the questionnaires and analysis of the responses. The system for collecting information from or about people to describe, compare, or explain their knowledge, attitudes, and behaviour (Fink, 2003, p.1). In this project, the online survey was administered cross-sectional. The questionnaire was self-administered, that the respondent completed on their own time via an internet device. The survey consisted of several electronic questionnaires that are hosted on Qualtrics, a survey design service that facilitates the design, preparation and administration of the questionnaires.

4.2.2. Target Audience

This study targets the population of both the Netherlands and Germany to ensure a sufficient difference between the cultural dimensions, meanwhile being a user of internet technology. This study is conducted to assess the impact of culture on the adoption of multi-sided platforms. As introduced in the previous section the case of online food delivery platforms use is measured and correlated to the cultural dimensions of Hofstede.

- Check for country significance

For control purposes an adaptation of the UTAUT2 model is included in the questionnaire. The context of this study is the influence of cultural dimension differences on the consumer adoption of online food delivery platforms. Demographic statistics are represented by gender, age, degree, job, and nationality. Measured with the following labels in table 4.1.

Measurement	Scale	Label
Gender	1-3	Male Female Other
Age	1-8	<20 20 - 24 25 - 29 30 - 34 35 - 39 40 - 49 50 - 59 60 <
Degree	1-7	>GED GED No Degree Associate Degree BSc MSc PhD
Job	1-8	Working Self Employed Laid-off Looking for work Retired Disabled Other Prefer not to say
Nationality	1-3	Dutch German Other

Table 4.1: Demographic statistics

4.2.3. Letter of Informed Consent

To ensure ethical gathering of data on the use of OFDPs the following message was presented at the beginning of the questionnaire, starting with an explanation of the project.

> Welcome to the questionnaire on the impact of culture on the use of online food delivery platforms. This project is examining the relationship between national cultural values and the use of multi-sided platforms in the context of online food delivery platforms. You will be presented with information in the study and asked about your perspective and use. The cultural values are assessed on a country level and not individual. Please be assured that

> your responses will be kept confidential and anonymous.

After this paragraph an introduction is made of the researcher that is conducting the study and the participant is warned about the data collection and how that data is handled during the project and after completion.

> This questionnaire is part of the master thesis project by Jasper Kuijpers, an MSc student from Delft University of Technology, the Netherlands. During the project, the data will be stored on a ProjectDrive at Delft University of Technology. The data will be published in Jasper Kuijpers' master's thesis for the assessment of the quality of the research. After completion of this project, the gathered data, analysis, and final results will be publicly available in the repository of Delft University of Technology.

Finally, the prospective respondent is told about the duration of the questionnaire, how to get in contact with the researcher and asked to consent to the use of the data.

> The questionnaire has 4 parts and should take you around 10-15 minutes to complete. In advance, I thank you kindly for your participation. Your participation in this research project is voluntary.
>
> You have the right to withdraw at any point during the study, for any reason, and without any prejudice. If you would like to contact the researcher in this project please e-mail j.j.kuijpers@student.tudelft.nl.
>
> By selecting the option below, you acknowledge that your participation in the study is voluntary, you are over the age of 18 and aware that you may choose to terminate your participation in the study at any time and for any reason.

When the participants selected the option of consent they were entered into the questionnaire, otherwise they are thanked for their time and shown the end of the questionnaire.

4.2.4. Data Collection and Management

The survey has been distributed in three channels. First, utilizing the network of the researcher the questionnaire has been distributed online, through email and social media. Second, a publication has been posted on SurveyCircle, a platform for researchers to distribute their projects and collect responses on the basis of mutual support. This exchange supports researchers in gathering responses and allows the researcher to participate in other studies. Lastly, to gather a sufficient amount of respondents the questionnaire has been offered on Prolific in exchange for a small financial compensation (£1.25 per questionnaire). The final platform distribution is shown in table 4.2.

Platform	Frequency (N)	Percentage
Prolific.co	307	62.2 %
SurveyCircle	75	15.2 %
Personal Network	111	22.6 %
Total	493	100 %

Table 4.2: Platform Distribution

All data will be gathered keeping in mind GDPR-regulations of the European Union and stored with the servers of TU Delft. A back-up of the all data is made every week to the WebDrive (ProjectDrive: \staff-umbrella\Culture and MSP) of TU Delft.

This study, protocol and data management have been approved by the Human Research and Ethics Committee (HREC) of the TU Delft.

4.2.5. Boundary conditions

Before the results can be analyzed, the following boundary conditions, in table 4.3, had to be satisfied for use in the research project. The time limit is based on a trusted sample (n=64), estimating an

Boundary Condition	Definition
Consent	Participants have provided their consent to the questionnaire in the pre-screening question to the respondents
Completion	Participants have a 100% completion rate of the questionnaire
No missing values	Participants have no missing values in mandatory questions
Use of OFDPs	Participants that have answered to not use OFDPs
Time limit	Participants have a completion time within 2*standard deviation of the mean.

Table 4.3: Boundary Conditions for participant selection

average response time to fill out the questionnaire. The mean time to fully complete the questionnaire was 543 seconds (9 minutes and 3 seconds). The standard deviation in this sample was 162 seconds (2 minutes and 42 seconds).

With some of the participants receiving an financial incentive to fill out as many questionnaires as possible or credits for their own research, the time limit serves to remove the hurried or otherwise biased responses from the data-set Teitcher et al. (2015). However, some participants that need extra time or have a break during the questionnaire (answering a call or grabbing some coffee). Therefore, the time limit is set to 2 times the standard deviation of the mean of the trusted sample. This resulted in a time-frame for validation of the respondents data ranging from 219 seconds (3 minutes and 39 seconds) to 867 seconds (14 minutes and 27 seconds).

Boundary Condition	Definition	Removed
Consent	Participants have provided their consent to the questionnaire in the pre-screening of the respondents	6
Completion	Participants have a 100% completion rate of the questionnaire	23
No missing values	Participants have no missing values in mandatory questions	0
Use of OFDPs	Participants that do NOT use OFDPs	37
Time limit	Participants have a completion time within 2*standard deviation of the mean.	44
Total		110

Table 4.4: Respondents removal summary

Table 4.4 shows the summary of the participants that were excluded from the data-set that did not meet the boundary conditions. In total, 110 respondents did not meet the boundary conditions. Their data is hereafter excluded from the analysis in the results chapter of this research.

4.2.6. Participants

After removing the participants that did not meet the boundary conditions, a sample of $N = 383$ ($Male = 223$, $Female = 158$, $X = 2$) was left for analysis in this project. Table 4.5-4.6 show the nationality, degree, and age distribution for the collected sample.

4.3. Measurement

The scales for the different constructs are adapted from prior research. The scales for measuring cultural dimensions are drawn from the value survey module published by Hofstede et al. (2010). The

Nationality	Frequency	Percent
Dutch	194	50.65 %
German	189	49.35 %
Total	383	100.00 %

Table 4.5: Demographics Nationality

Age (Years)	Frequency	Percent
< 20	17	4.44 %
20 - 24	118	30.81 %
25 - 29	117	30.55 %
30 - 34	64	16.71 %
35 - 39	24	6.27 %
40 - 49	31	8.09 %
50 - 59	9	2.35 %
60 <	3	0.78 %
Total	383	100.00 %

Table 4.6: Demographics Age

Degree	Frequency	Percent
< High School	17	4.44 %
High School / GED	84	21.93 %
No Degree	47	12.27 %
Associate Degree	59	15.40 %
Bachelor's Degree	78	20.37 %
Master's Degree	89	23.24 %
PhD	9	2.35 %
Total	383	100.00 %

Table 4.7: Demographics Degree

relevant scales from UTAUT2 (i.e. expectations, social influence, behavioural intention, habit, price value, hedonic motivation) are adapted from (Venkatesh et al., 2012).

The questionnaire is created in Dutch, English, and German and is reviewed by a group of academics. The questionnaire is pilot tested among a group of 10 consumers, which are not included in the main survey to assess the structure and flow of the questionnaire. Finally, the some data is reverse coded for analysis, such that agreeableness scores high (> 3), and disagreeing has a lower score(< 3). Resulting in more naturally explainable data, which supports the understanding of the analysis and results.

4.3.1. Cultural Dimensions

All survey items for the cultural dimensions are measured using a five-points likert scale, ranging from "high importance" and "no importance". Table 4.8 provides the descriptive statistics and Cronbach's α for the present research. However, as can be noticed in table 4.8 the Cronbach's α shows a very low internal reliability, the scale is not measured as consistent. The Cronbach's α described the correlation between the questions as poor but in the case of Cultural Dimensions this is explained by the fact that only two countries were investigated in this study.

Cultural Dimension	Cronbach's α	mean	SD
Power Distance (PDI)	0.25	2.83	0.49
Uncertainty Avoidance (UAI)	0.30	2.56	0.47
Individualism (IDV)	0.33	3.43	0.73
Masculinity (MAS)	0.47	3.64	0.33
Long Term Orientation (LTO)	0.32	3.17	0.43
Indulgence vs Restraint (IVR)	0.63	2.85	0.32

Note. All dimensions are calculated after recoding the items for positive correlations

Table 4.8: Scale Reliability Statistics Cultural Dimensions

The value survey module (VSM) that this project has used for measuring the cultural dimensions of the countries is developed for comparing multiple countries. In the manual that accompanies this

survey module, there is a notation on the reliability of the VSM. ”Country-level correlations differ from individual-level correlations, answers on questions used to measure a country-level dimension do not necessarily correlate **across individuals**” (Geert Hofstede and Minkov, 2013, p.9). The reliability test can, therefore, not be used to measure the individual scores, but should be measured on a country-level mean scores. In this case the collected data should comprise of a sufficient number of countries, in the manual the advice is at least ten.

However, in this research project we examined only 2 countries - The Netherlands and Germany - which forces the project to take the reliability for granted on a country-level. This adds to the argument why the Cronbach's α is inconsistent for the cultural dimensions and what make the cultural dimensions interesting. The internal validity of this project cannot be proven using the Cronbach's α, this study relies on the validity of the standardized items across the IBM database of Hofstede (Geert Hofstede and Minkov, 2013; Hofstede, 2001). The Cronbach's α values of the standardized items of the VSM are presented in table 4.9:

Cultural Dimension	Cronbach's α
Power Distance	0.84
Uncertainty Avoidance	0.77
Individualism	0.76
Masculinity	0.72

Table 4.9: Reliability Statistics VSM (Geert Hofstede and Minkov, 2013)

The added dimensions after 1980 have been reliable in other studies and have proven their worth in other similar studies as they are adapted from the World Value Survey (Inglehart et al., 2014), which is explained in chapter 2.

4.3.2. UTAUT

The section on UTAUT items in the questionnaire is measured using a seven-point likert scale, ranging from ”Strongly Agree” to ”Strongly Disagree”. Table 4.10 provides descriptive statistics and Cronbach's α for the present research in the for the UTAUT constructs.

UTAUT Construct	Cronbach's α	mean	SD
Performance Expectations (PE)	0.58	4.65	1.54
Effort Expectations (EE)	0.91	6.35	0.10
Social Influence (SI)	0.83	3.52	0.46
Facilitating Conditions (FC)	0.73	6.28	0.42
Hedonic Motivation (HM)	0.84	4.90	0.52
Price Value (PV)	0.87	4.38	0.10
Habit (HT)	0.79	2.78	1.12

Table 4.10: Scale Reliability Statistics UTAUT

With the UTAUT model included in the survey the research project could control for the acceptance and use of technology aspects. The Cronbach's α of the constructs of the UTAUT model shows a high internal consistency.

4.3.3. Behavioural Intention & Use

The final construct of UTAUT and Use are measured in the questionnaire using a seven-point likert scale, consistent with the UTAUT model, ranging from ”Strongly Agree” to ”Strongly Disagree”. Table 4.11 shows the descriptive statistics and Cronbach α for the present research for the Behavioural Intention construct.

UTAUT Construct	Cronbach's α	mean	SD
Behavioural Intention (BI)	0.75	4.30	1.19

Table 4.11: Scale Reliability Statistics Behavioural Intention

Use of OFDP is measured in variety and frequency, providing popular OFDPs and indicating their usage frequency for each ranging from ”2-3 per year” to ”every day”. In the questionnaire, the flow of the questions asked first for the different online food delivery platform that the respondent uses followed by the question to indicate their frequency of use of those platforms.

To measure the use frequency of the respondents, the flow is assumed to count each of the different platforms use frequency towards the total use frequency. In short, if the respondent only uses one OFDP and the frequency is 2-3 times per year, that totals the use frequency for this respondent. If the respondent selects multiple OFDPs, each of the frequencies that is selected for each OFDP is counted towards the total use frequency.

5

Analysis & Results

A total of 383 participants with complete data met the boundary conditions are included in the analysis. The following analysis are reported using JASP 0.14.1 and R-studio software packages. Microsoft Office Excel 365 was used for data management.

5.1. Descriptive Statistics Cultural Dimensions

Table 5.1 below presents the descriptive statistics used in the Cultural Dimensions section of the study. The empirical minimum and maximum are useful in determining the discriminativeness of a scale. Furthermore, the participants should be spread out sufficiently across the scale. A concentration in the middle of the scale indicates poor discriminativeness. The measures of central tendency (mean) and dispersion (standard deviation) can contribute in this process according to Field (2013).

Skewness and kurtosis provide information about the shape of the distribution (Field, 2013). The skewness represents the deviation from the normal distribution on the horizontal axis, positive or negative, means the number of responses is concentrated on a higher or lower number of measurement (everyone scoring high or low). Kurtosis represents the deviation from the normal distribution on the vertical axis, with a concentration on a single number on the scale or distributed to evenly across the respondents.

Larger samples such as in this study, can be considered normally distributed if both skewness and kurtosis stay within the limit of $\pm$ 2.58. If the skewness falls outside this range, the distribution of the values is considered asymmetrical around the mean. Kurtosis outside the interval indicates a distribution deviating from the normal on the vertical axis (i.e. too few or too many values on the minimum/maximum of the scales) (Ghasemi and Zahediasl, 2012).

In the results provided below, it is clear that most of the scales that are used are sufficiently discriminative. The distribution on the scales is symmetrical, with a slight negative skewness across the most of the dimensions, only the Indulgence dimension is positively skewed. The kurtosis is mostly positive, in combination with the negative skewness the participants have a tendency to accumulate on the right side of the distribution (i.e. scoring high values on the scales) as can be seen in figure 5.1. The opposite is true for the Indulgence dimension for the Dutch nationality, here the kurtosis is positive as well as the skewness, resulting in a accumulation on the left side of the distribution shown in figure 5.2.

With the Shapiro-Wilk test is determined if the the skewness and kurtosis is significantly deviating from the normal distribution. With the test-score on the Shapiro-Wilk test, (> 0.95), the results are insignificant, only on the Indulgence dimension is this lower. However, table 5.1 also shows the

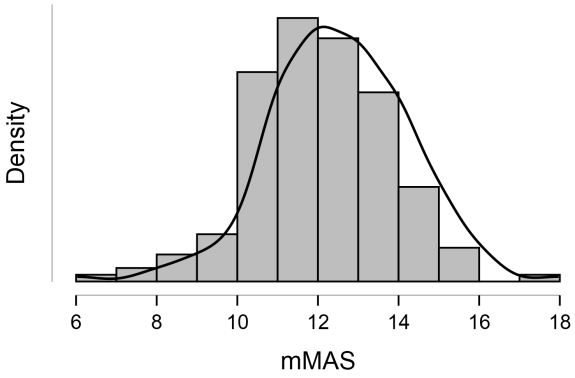

Figure 5.1: Dutch Masculinity Scale Distribution

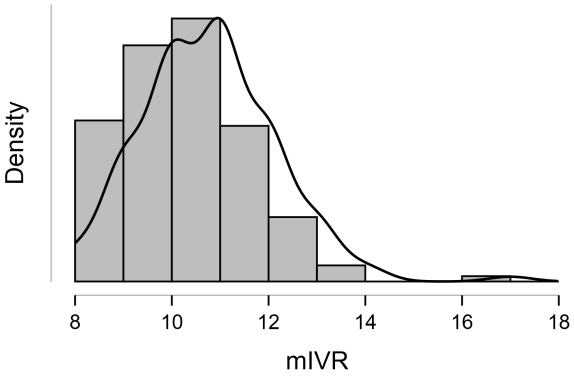

Figure 5.2: Dutch Indulgence Scale Distribution

significance of the Shapiro-Wilk test significance, ($p < 0.05$), as this is the case in for the Indulgence dimension the scale is assumed to be normally distributed.

					Skewness		Kurtosis		Shapiro-Wilk		Theoretical		Empirical	
		Mean	Mode	SD	Value	S.E.	Value	S.E.	Value	P-value	Min	Max	Min	Max
mPDI	Dutch	12.44	12.00	1.79	-0.12	0.19	0.15	0.37	0.97	< .002	4.00	20.00	7.00	17.00
	German	12.84	13.00	1.66	-0.44	0.18	0.41	0.36	0.95	< .001	4.00	20.00	8.00	16.00
mUAI	Dutch	9.86	10.00	1.92	-0.03	0.19	-0.08	0.37	0.97	< .004	4.00	20.00	4.00	15.00
	German	10.61	11.00	1.99	0.04	0.18	-0.19	0.36	0.98	< .004	4.00	20.00	5.00	16.00
mIDV	Dutch	10.60	11.00	1.61	-0.32	0.19	0.42	0.37	0.96	< .001	4.00	20.00	5.00	15.00
	German	11.04	11.00	1.50	-0.08	0.18	-0.22	0.36	0.95	< .001	4.00	20.00	8.00	15.00
mMAS	Dutch	12.53	12.00	1.74	**-0.22**	0.19	**1.01**	0.37	0.96	< .001	4.00	20.00	6.00	18.00
	German	11.42	11.00	1.57	-0.12	0.18	0.08	0.36	0.96	< .001	4.00	20.00	7.00	16.00
mLTO	Dutch	11.57	11.00	1.89	-0.02	0.19	0.09	0.37	0.97	< .004	4.00	20.00	6.00	17.00
	German	12.97	13.00	1.79	0.17	0.18	0.07	0.36	0.97	< .001	4.00	20.00	9.00	18.00
mIVR	Dutch	10.75	11.00	1.39	**0.61**	0.19	**1.61**	0.37	0.93	< .001	4.00	20.00	8.00	17.00
	German	11.77	12.00	1.45	0.36	0.18	-0.11	0.36	0.94	< .001	4.00	20.00	8.00	15.00

Table 5.1: Descriptive Statistics for the Cultural Dimensions

5.2. Descriptive Statistics Behaviour and Use

Table 5.2 presents the descriptive statistics for the Unified Theory of Acceptance and Use of Technology model extended to the consumer perspective. The results show that the scales are sufficiently discriminative on most dependent constructs, however, the use frequency for online food delivery platform is on the lower end of the distribution.

					Skewness		Kurtosis		Shapiro-Wilk		Theoretical		Empirical	
		Mean	Mode	SD	Value	S.E.	Value	S.E.	Value	P-value	Min	Max	Min	Max
mBI	Dutch	12.71	13.00	3.56	-0.42	0.19	0.20	0.37	0.98	< .009	3.00	21.00	3.00	21.00
	German	13.10	11.00	3.73	-0.07	0.18	-0.41	0.36	0.98	< .04	3.00	21.00	3.00	21.00
Use	Dutch	3.37	2.00	1.90	1.15	0.19	1.81	0.37	0.90	< .001	1.00	25.00	1.00	11.00
	German	2.87	2.00	1.98	1.94	0.18	4.82	0.36	0.79	< .001	1.00	25.00	1.00	12.00

Table 5.2: Descriptive Statistics Behavioural Intention and Use Frequency

In the figures 5.3 - 5.6 are the distribution of the dependent variables presented.

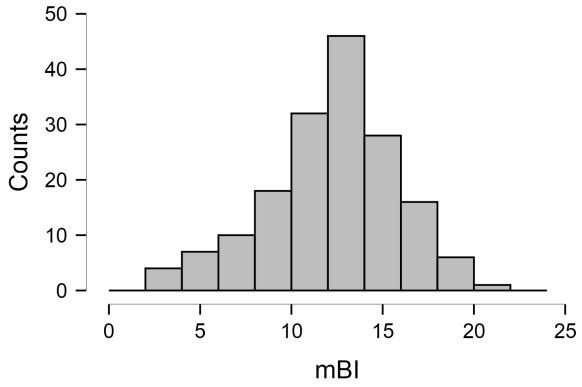

Figure 5.3: Dutch Behavioural Intent Distribution

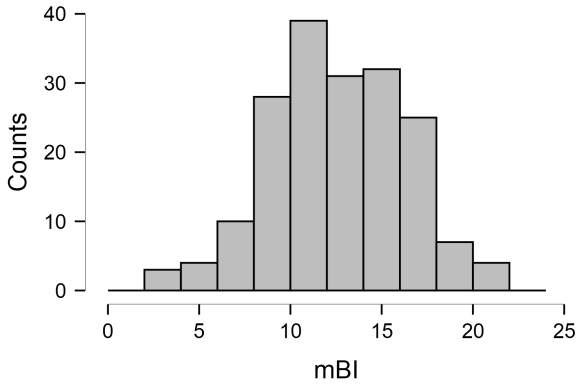

Figure 5.4: German Behavioural Intent Distribution

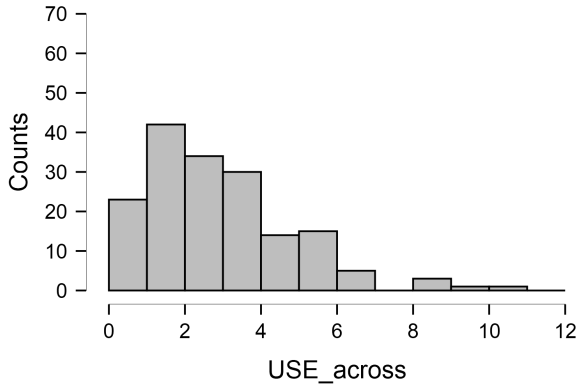

Figure 5.5: Dutch Use Frequency Distribution

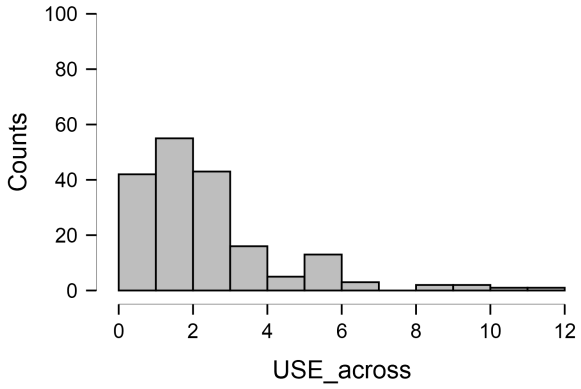

Figure 5.6: German Use Frequency Distribution

5.3. Indexing Cultural Dimensions

A country-level analysis is done using the descriptive statistics of the cultural dimensions. Using the mean of each of the questions of the dimensions a formula can be applied to calculate the index of the cultural dimension for comparison (Geert Hofstede and Minkov, 2013). Table 5.3 shows the mean of each question the respondents answers split across their nationality. The county-level analysis requires the nationality groups to have a sample size of at least 50 respondents. With more than 150 respondents across each nationality, the analysis is considered valid for analysis.

With the mean across the different nationalities the indexes can be calculated using the following formula's;

$$PDI = 35 * (meanPDI1 - meanPDI2) + 25 * (meanPDI3 - meanPDI4) + c$$
$$UAI = 40 * (meanUAI2 - meanUAI1) + 25 * (meanUAI3 - meanUAI4) + c$$
$$IDV = 35 * (meanIDV1 - meanIDV2) + 35 * (meanIDV4 - meanIDV3) + c$$
$$MAS = 35 * (meanMAS1 - meanMAS2) + 35 * (meanMAS4 - meanMAS3) + c$$
$$LTO = 40 * (meanLTO2 - meanLTO1) + 25 * (meanLTO3 - meanLTO4) + c$$
$$IVR = 35 * (meanIVR2 - meanIVR1) + 40 * (meanIVR3 - meanIVR4) + c$$

If the following formulas gives a negative number, an constant equal for each country is added for comparison on a positive scale. These formula's give the following results for the Dutch nationality on

Cultural Dimension	# Questions	Nationality	Mean	SD	Cultural Dimension	# Questions	Nationality	Mean	SD
Power Distance Index	PDI1	Dutch	3.55	1.02	Masculinity Index	MAS1	Dutch	3.79	0.78
		German	3.77	0.85			German	3.85	0.80
	PDI2	Dutch	2.49	0.84		MAS2	Dutch	2.01	0.81
		German	2.56	0.91			German	1.97	0.79
	PDI3	Dutch	3.27	0.82		MAS3	Dutch	3.39	1.10
		German	3.55	0.74			German	2.08	0.86
	PDI4	Dutch	3.12	0.99		MAS4	Dutch	3.34	0.97
		German	2.97	0.95			German	3.51	0.97
Uncertainty	UAI1	Dutch	2.95	0.70	Long Term	LTO1	Dutch	2.66	0.95
Avoidance Index		German	3.02	0.80	Orientation Index		German	3.74	1.12
	UAI2	Dutch	2.15	0.77		LTO2	Dutch	2.95	0.91
		German	2.07	0.75			German	2.69	0.98
	UAI3	Dutch	1.91	0.92		LTO3	Dutch	2.39	0.76
		German	2.49	0.99			German	2.82	0.86
	UAI4	Dutch	2.85	1.02		LTO4	Dutch	3.58	0.91
		German	3.04	0.90			German	3.72	0.83
Individualism Index	IDV1	Dutch	4.04	0.84	Indulgence vs	IVR1	Dutch	2.14	1.00
		German	4.26	0.69	Restraint Index		German	3.92	1.13
	IDV2	Dutch	2.10	0.88		IVR2	Dutch	3.63	0.84
		German	2.04	0.91			German	2.31	1.03
	IDV3	Dutch	1.96	0.80		IVR3	Dutch	2.17	0.62
		German	1.99	0.77			German	2.57	0.74
	IDV4	Dutch	2.49	1.08		IVR4	Dutch	2.80	0.74
		German	2.74	1.05			German	2.97	0.76

Table 5.3: Country-level Mean and Standard Deviation per Cultural Dimension for Indexing

the different indexes:

$$PDI_{dutch} = 35 * (3.55 - 2.49) + 25 * (3.27 - 3.12) = 40.9$$
$$UAI_{dutch} = 40 * (2.15 - 2.95) + 25 * (1.91 - 2.85) + 100 = 44.5$$
$$IDV_{dutch} = 35 * (4.04 - 2.10) + 35 * (2.49 - 1.96) = 86.5$$
$$MAS_{dutch} = 35 * (3.79 - 2.01) + 35 * (3.34 - 3.39) = 60.6$$
$$LTO_{dutch} = 40 * (2.95 - 2.66) + 25 * (2.39 - 3.58) + 100 = 81.9$$
$$IVR_{dutch} = 35 * (3.63 - 2.14) + 40 * (2.17 - 2.80) + 100 = 126.7$$

And the following for the German nationality on each cultural dimensions:

$$PDI_{german} = 35 * (3.77 - 2.56) + 25 * (3.55 - 2.97) = 56.9$$
$$UAI_{german} = 40 * (2.07 - 3.02) + 25 * (2.49 - 3.04) + 100 = 48.3$$
$$IDV_{german} = 35 * (4.26 - 2.04) + 35 * (2.74 - 1.99) = 104$$
$$MAS_{german} = 35 * (3.85 - 1.97) + 35 * (3.51 - 2.08) = 115.9$$
$$LTO_{german} = 40 * (2.69 - 3.74) + 25 * (2.82 - 3.72) + 100 = 35.5$$
$$IVR_{german} = 35 * (2.31 - 3.92) + 40 * (2.57 - 2.97) + 100 = 27.7$$

The indexes are shown in figure 5.7, with a clear difference between the cultures. Only on the first three cultural dimensions varies the index minimally between the Dutch and German culture. However, looking at Masculinity, Long Term Orientation, and Indulgence versus restrained are clear differences indicated. In the following section the correlations of the cultural dimensions in relation to the behavioural intention and use of Online Food Delivery Platforms is presented.

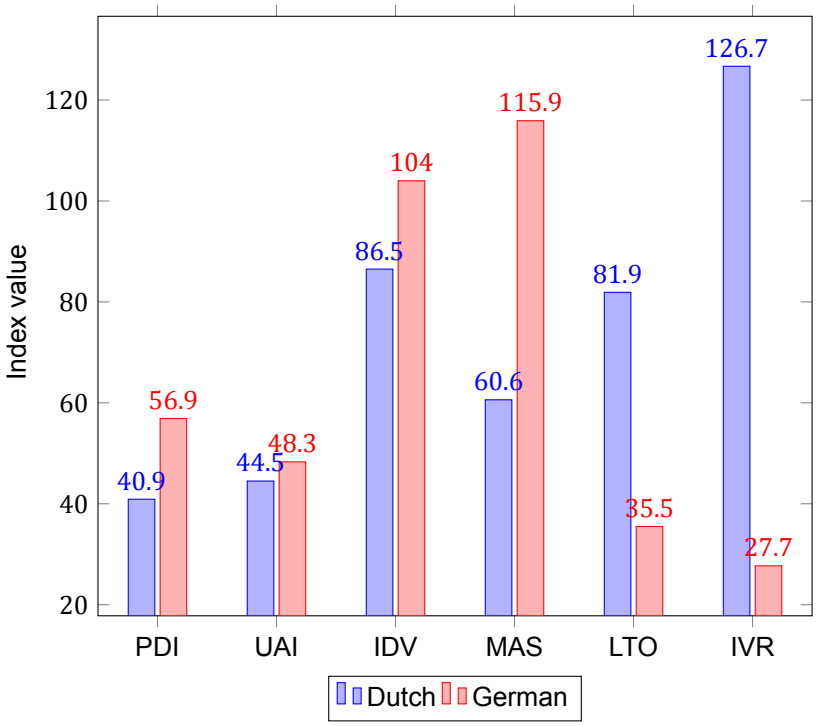

Figure 5.7: Index Cultural Dimensions per Country

5.4. Correlation Matrix Cultural Dimensions

In table 5.4 the cultural dimensions are related to the mean of the Behavioural Intention and Use scales. The correlations of the different nationalities cultural dimensions are split in the table, the dutch dimensions are on the bottom of the table. No significant results can be reported as a relationship between the cultural dimensions and behavioural intention or use for the dutch cultural dimensions. For the German cultural dimensions only 1 dimension (Uncertainty Avoidance) correlates with a positive effect ($\beta = 0.14$) within the probability of this occurring by chance ($p < 0.05$). All other correlations with significant relations between variables are between the cultural dimensions.

Variable		mPDI	mUAI	mIDV	mMAS	mLTO	mIVR	mBI German	USE_avg German
mPDI	Pearson's r	–	0.28***	-0.009	-0.09	0.0004	0.21**	0.05	0.03
mUAI	Pearson's r	0.02	–	-0.003	0.04	-0.14	0.34***	0.14*	0.08
mIDV	Pearson's r	0.08	-0.23**	–	-0.04	0.06	-0.09	0.11	0.006
mMAS	Pearson's r	0.12	0.03	-0.10	–	-0.005	-0.07	0.03	0.03
mLTO	Pearson's r	0.10	0.03	-0.04	-0.04	–	0.01	0.07	0.04
mIVR	Pearson's r	-0.02	0.35***	0.01	0.07	0.12	–	-0.001	-0.03
mBI Dutch	Pearson's r	0.11	-0.02	0.004	0.09	0.009	-0.08		
USE_avg Dutch	Pearson's r	0.07	-0.02	-0.10	0.04	-0.03	0.04		

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5.4: Correlations Cultural Dimensions

5.5. Hypothesis Testing

With the current results on the correlations between the cultural dimensions and the construct of behavioural intent and average use frequency, the expectation is that the dimensions do not have a significant effect on the constructs. In this section a linear regression analysis to test the hypotheses formulated in chapter 3 is expected to confirm the current expectations.

5.5.1. Hypotheses Conceptual Model

Recall from chapter 3 the hypotheses for the 6 cultural dimensions and conceptual model in figure 5.8.

1. $PDI \uparrow \implies BI \uparrow \wedge USE \uparrow$
   If a group of individuals score high on the Power Distance Index, the implication speaks that the Behavioural Intention and Use of OFDPs is positively related.
2. $UAI \downarrow \implies BI \uparrow \wedge USE \uparrow$
   If a group of individuals score high on the Uncertainty Avoidance Index, the implication speaks that the Behavioural Intention and Use of OFDPs has a negative relation.
3. $IDI \uparrow \implies BI \uparrow \wedge USE \uparrow$
   If a group of individuals score high on the Individualism Index, the implication speaks that the Behavioural Intention and Use of OFDPs is positively related.
4. $MAS \uparrow \implies BI \uparrow \wedge USE \uparrow$
   If a group of individuals score high on the Masculinity Index, the implication speaks that the Behavioural Intention and Use of OFDPs is positively related.

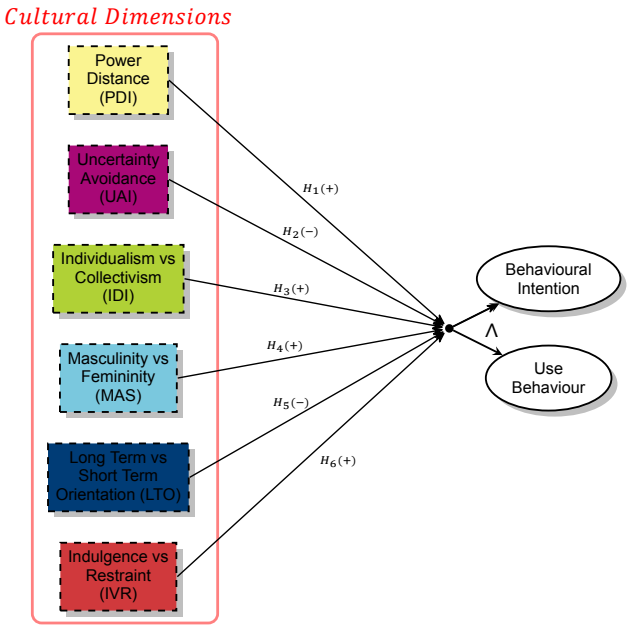

Figure 5.8: Research Model Cultural Dimension relationship with Behavioural Intent and Use

5. $LTO \downarrow \implies BI \uparrow \wedge USE \uparrow$
   If a group of individuals score high on the Long Term Orientation Index, the implication speaks that the Behavioural Intention and Use of OFDPs has a negative relation.
6. $IVR \uparrow \implies BI \uparrow \wedge USE \uparrow$
   If a group of individuals score high on the Indulgence versus Restraint Index, the implication speaks that the Behavioural Intention and Use of OFDPs is positively related.

5.5.2. Linear Regression Behavioural Intention

The results of analysing the linear regression of the Dutch cultural dimensions effect on the first dependent variable, behavioural intention is presented in table 5.5.

The linear regression calculated to predict the behavioural intention based on the Dutch cultural dimensions. No significant regression equation was found ($F(6, 187) = 0.44, p < 0.85$), with an R^2 of 0.01. The R of 0.12, would be the only correlating value between the independent variable (the cultural dimension) and the dependent, behavioural intention. With R^2 (0.01) the independent variables (cultural

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_1	0.12	0.01	-0.02	3.68	0.01	0.44	6	187	0.85

Table 5.5: Linear Regression Model - Dutch Behavioural Intention

dimensions) only account for 1 % of the variation in behavioural intention. None of the variance in cultural dimensions would be explained if a different sample of the population would have participated.

Table 5.6 presents the control for the influence of age and gender. Age and gender do not show significant values and do not explain the influence of cultural dimensions in the Dutch population on behavioural intention.

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_{Gender}	0.12	0.01	-0.02	4.49	0.01	0.43	6	187	0.86
H_{Age}	0.12	0.02	-0.02	6.35	0.02	0.49	6	187	0.81

Table 5.6: Linear Regression Model - Dutch Behavioural Intention - Control for Age and Gender

The results of analysing the linear regression of the German cultural dimensions effect on the first dependent variable, behavioural intention is presented in table 5.7.

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_1	0.21	0.04	0.01	3.61	0.04	1.35	6	182	0.24

Table 5.7: Linear Regression Model - German Behavioural Intention

The linear regression calculated to predict the behavioural intention based on the German cultural dimensions. No significant regression equation was found ($F(6, 182) = 1.35, p < 0.24$), with an R^2 of 0.04. The R of 0.21, would be the only correlating value between the independent variable (the cultural dimension) and the dependent, behavioural intention. With R^2 (0.04) the independent variables (cultural dimensions) only account for 4 % of the variation in behavioural intention. None of the variance in cultural dimensions would be explained if a different sample of the population would have participated.

Table 5.8 presents the control for the influence of age and gender. Age and gender do not show significant values and do not explain the influence of cultural dimensions in the German population on behavioural intention.

The participants' predicted behavioural intention is equal to:

$$Dependent(y) = \beta_0 + \beta_1 * Independent(X)$$
$$BI_{german} = 10.06 + 0.29 * UAI_{german}$$

5.5.3. Linear Regression Use frequency

The results of analysing the linear regression of the Dutch cultural dimensions effect on the second dependent variable, average use frequency is presented in table 5.12.

The linear regression calculated to predict the average use frequency of online food delivery platforms based on the Dutch cultural dimensions. No significant regression equation was found ($F(6, 187) = 0.67, p < 0.67$), with an R^2 of 0.02. The R of 0.15, would be the only correlating value between the independent variable (the cultural dimension) and the dependent, average use frequency. With R^2 (0.02) the independent variables (cultural dimensions) only account for 2 % of the variation in average use frequency. None of the variance in cultural dimensions would be explained if a different sample of the population would have participated.

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_{Gender}	0.23	0.05	0.02	4.26	0.05	1.68	6	182	0.13
H_{Age}	0.27	0.07	0.04	6.76	0.07	2.31	6	182	0.04

Table 5.8: Linear Regression Model - German Behavioural Intention - Control for Age and Gender

In the correlation results of the previous section on cultural dimensions showed a correlation of the German Uncertainty Avoidance Dimension in relation to the German Behavioural Intention. Table 5.9 shows the coefficients for the German Linear Regression. Presenting the linear regression calculated to predict the behavioural intention based on the German Uncertainty Avoidance in table 5.10.

A significant regression equation was found ($F(1, 181) = 3.82, p < 0.05$), there is less than $5\ \%$ chance that $F = 3.82$ will happen if H_0 were true. The R of 0.14, would be the only correlating value between the independent variable (the cultural dimension) and the dependent, behavioural intention, as found in the correlation matrix. With R^2 (0.04) the independent variables (cultural dimensions) accounts for $4\ \%$ of the variation in behavioural intention. Table 5.11 presents the coefficients of the linear regression analysis of the German Uncertainty Avoidance on Behaviour Intention.

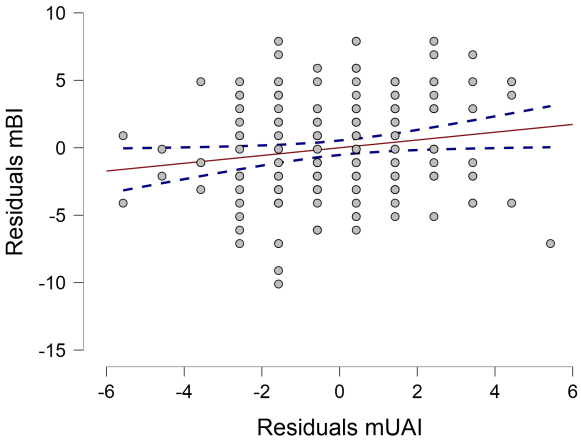

Figure 5.9: Scatterplot Linear Regression German Uncertainty Avoidance - Behavioural Intention

Model		Unstandardized	Standard Error	Standardized	t	p
H_0	(Intercept)	13.11	0.26		49.63	< .001
H_1	(Intercept)	5.26	4.50		1.17	0.24
	mPDI	0.01	0.17	0.006	0.08	0.93
	mUAI	0.32	0.15	0.18	2.23	0.03
	mIDV	0.23	0.18	0.09	1.29	0.20
	mMAS	0.12	0.17	0.05	0.71	0.48
	mLTO	0.13	0.15	0.06	0.84	0.40
	mIVR	-0.11	0.20	-0.04	-0.55	0.58

Table 5.9: Coefficients German Cultural Dimensions on Behavioural Intention

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_{UAI}	0.16	0.02	0.02	3.59	0.02	4.76	1	187	0.03

Table 5.10: Linear Regression Model - Uncertainty Avoidance on German Behavioural Intention

Model		Unstandardized (β)	Standard Error	Standardized	t	p
H_{UAI}	(Intercept)	10.06	1.42		7.09	< .001
	mUAI	0.29	0.13	0.16	2.18	0.03

Table 5.11: Linear Regression German Uncertainty Avoidance Coefficients

Table 5.13 presents the control for the influence of age and gender. Age and gender do not show significant values and do not explain the influence of cultural dimensions in the Dutch population on

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_1	0.15	0.02	-0.01	1.92	0.02	0.67	6	187	0.67

Table 5.12: Linear Regression Model - Dutch Average Use Frequency

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_{Gender}	0.13	0.02	-0.01	2.25	0.02	0.56	6	187	0.76
H_{Age}	0.19	0.04	0.01	3.36	0.04	1.20	6	187	0.31

Table 5.13: Linear Regression Model - Dutch Use Frequency - Control for Age and Gender

use frequency.

The results of analysing the linear regression of the German cultural dimensions effect on the second dependent variable, average use frequency is presented in table 5.14.

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_1	0.21	0.04	0.01	1.96	0.04	1.35	6	182	0.24

Table 5.14: Linear Regression Model - German Average Use Frequency

The linear regression calculated to predict the average use frequency of online food delivery platforms based on the German cultural dimensions. No significant regression equation was found ($F(6, 182) = 1.35, p < 0.24$), with an R^2 of 0.04. The R of 0.21, would be the only correlating value between the independent variable (the cultural dimension) and the dependent, average use frequency. With R^2 (0.04) the independent variables (cultural dimensions) only account for 4 % of the variation in average use frequency. None of the variance in cultural dimensions would be explained if a different sample of the population would have participated.

Table 5.15 presents the control for the influence of age and gender. Age and gender do not show significant values and do not explain the influence of cultural dimensions in the German population on use frequency.

Model	R	R^2	Adjusted R^2	RMSE	R^2 Change	F Change	df1	df2	p
H_{Gender}	0.19	0.04	0.01	2.22	0.04	1.19	6	182	0.31
H_{Age}	0.25	0.06	0.03	3.52	0.06	2.00	6	182	0.07

Table 5.15: Linear Regression Model - German Use Frequency - Control for Age and Gender

5.5.4. Summary Hypotheses

The Dutch correlation matrix and linear regression analysis show no measurable effect of cultural dimensions on both constructs, behavioural intention and Average Use Frequency. The German part of the correlation matrix and linear regression analysis show only 1 significant effect of a single cultural dimension (uncertainty avoidance) on dependent variable, behavioural intention. The model for Uncertainty avoidance predicts well, however, in our hypothesis 2 posed a negative effect. The results of the correlations and linear regression analysis show that the proposed hypotheses have been rejected. Both for the Dutch and German group on all proposed effects.

5.6. Descriptive Statistics UTAUT2

Table 5.16 presents the descriptive statistics for the Unified Theory of Acceptance and Use of Technology model extended to the consumer perspective. The results show that the scales are sufficiently discriminative on most UTAUT constructs, however, the Effort expectation and Facilitating conditions seem to deviate. The skewness and Kurtosis of those constructs are outside the limit of $\pm$ 2.58, as can be seen in figure 5.10-5.13. The kurtosis of the scale for the Dutch Facilitating is not outside the limits but nonetheless discriminative in distribution. The scales favour the higher values more and are not distributed evenly in the tails. The effect of the accumulation of the participants scores in these constructs on the right side of the distribution is remarkable (i.e. very high scores on the scales).

The high scores of the respondents to the effort expectation and facilitating conditions, might be the result of the participation of a large group of respondents born after 1987 (see table 4.6 in chapter 4). This group has grown up in a digital age and is already familiar with many of the digital platforms that exist, resulting in expecting a certain ease of use of Online Food Delivery Platforms.

					Skewness		Kurtosis		Shapiro-Wilk		Theoretical		Empirical	
		Mean	Mode	SD	Value	S.E.	Value	S.E.	Value	P-value	Min	Max	Min	Max
mPE	Dutch	13.44	14.00	3.02	-0.97	0.19	1.60	0.37	0.94	$<$ .001	3.00	21.00	3.00	20.00
	German	14.42	14.00	2.72	-0.50	0.18	1.34	0.36	0.96	$<$ .001	3.00	21.00	5.00	21.00
mEE	Dutch	25.27	28.00	2.67	-1.18	0.19	**2.64**	0.37	0.85	$<$ .001	4.00	28.00	13.00	28.00
	German	25.50	28.00	2.75	-1.58	0.18	**4.44**	0.36	0.81	$<$ .001	4.00	28.00	11.00	28.00
mSI	Dutch	10.39	12.00	3.63	-0.20	0.19	-0.44	0.37	0.97	$<$ .002	3.00	21.00	3.00	19.00
	German	10.70	12.00	3.95	-0.26	0.18	-0.47	0.36	0.96	$<$ .001	3.00	21.00	3.00	21.00
mFC	Dutch	24.75	28.00	2.93	-1.08	0.19	1.15	0.37	0.89	$<$ .001	4.00	28.00	14.00	28.00
	German	25.45	28.00	2.79	-1.82	0.18	**5.52**	0.36	0.82	$<$ .001	4.00	28.00	10.00	28.00
mHM	Dutch	14.76	18.00	3.35	-0.50	0.19	0.36	0.37	0.97	$<$ .001	3.00	21.00	3.00	21.00
	German	14.64	18.00	3.55	-0.42	0.18	-0.30	0.36	0.97	$<$ .001	3.00	21.00	6.00	21.00
mPV	Dutch	13.44	15.00	3.40	-0.40	0.19	-0.41	0.37	0.97	$<$ .001	3.00	21.00	3.00	21.00
	German	12.89	15.00	3.75	-0.31	0.18	-0.35	0.36	0.98	$<$ .007	3.00	21.00	3.00	21.00
mHT	Dutch	11.49	8.00	4.55	0.45	0.19	-0.35	0.37	0.97	$<$ .001	4.00	28.00	4.00	24.00
	German	10.76	7.00	4.88	0.99	0.18	1.06	0.36	0.93	$<$ .001	4.00	28.00	4.00	28.00

Table 5.16: Descriptive Statistics UTAUT2

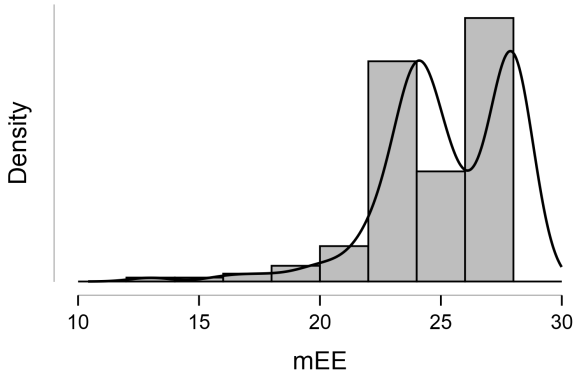

Figure 5.10: Dutch Effort Expectation Distribution

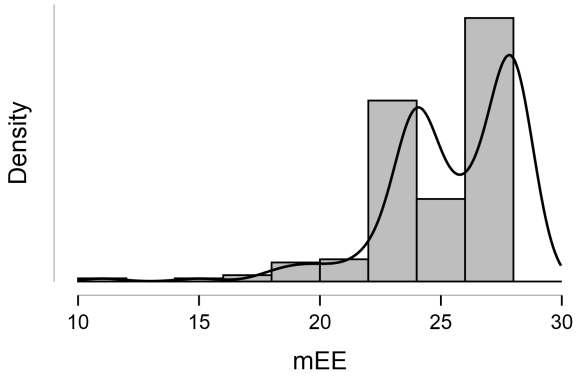

Figure 5.11: German Effort Expectation Distribution

5.7. Correlation Matrix UTAUT2

With UTAUT2 approach the technology acceptance and use from the consumer perspective is examined. This part of the questionnaire and subsequent data analysis is to control for the acceptance and

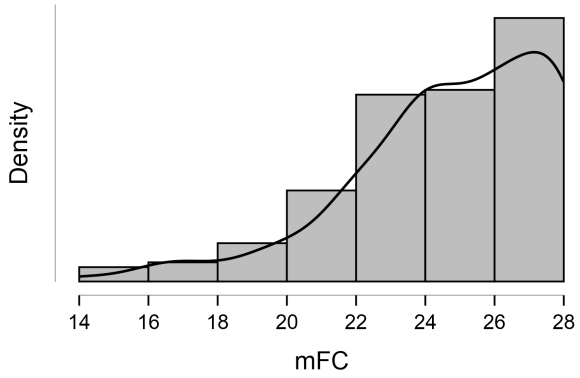

Figure 5.12: Dutch Facilitating Conditions Distribution

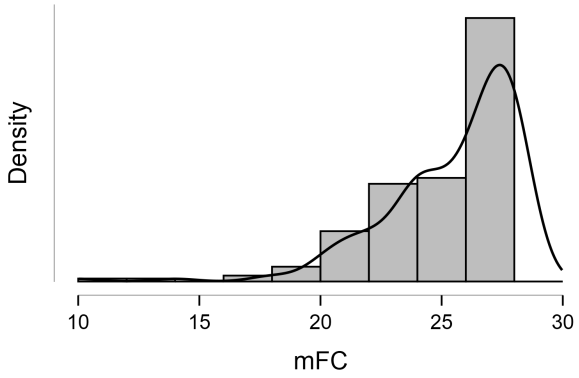

Figure 5.13: German Facilitating Conditions Distribution

use of technology aspect that the research project examines. With the UTAUT2 correlation matrix the data from the respondents can be corroborated with the validity of the UTAUT2 constructs that are meaningful on an individual measurement scale.

Variable		mPE	mEE	mSI	mFC	mHM	mPV	mHT	mBI German	USE_avg German
mPE	Pearson's r	–	0.36***	0.34***	0.21**	0.52***	0.19**	0.38***	0.51***	0.31***
mEE	Pearson's r	0.22**	–	0.07	0.61***	0.28***	0.07	7.69e-4	0.25***	0.05
mSI	Pearson's r	0.32***	0.12	–	-0.02	0.41***	0.16*	0.48***	0.48***	0.17*
mFC	Pearson's r	0.07	0.59***	-0.03	–	0.19**	0.18*	-0.16*	0.14	-0.15*
mHM	Pearson's r	0.35***	0.31***	0.31***	0.16*	–	0.35***	0.33***	0.48***	0.22**
mPV	Pearson's r	0.25***	0.19*	0.31***	0.10	0.41***	–	0.23**	0.27***	0.11
mHT	Pearson's r	0.48***	0.03	0.41***	-0.14	0.38***	0.42***	–	0.65***	0.52***
8. mBI Dutch	Pearson's r	0.49***	0.19*	0.34***	0.07	0.37***	0.38***	0.66***	–	0.39***
9. USE_avg Dutch	Pearson's r	0.23**	0.05	0.27***	-0.14	0.19*	0.25**	0.52***	0.38***	–

* p < .05, ** p < .01, *** p < .001

Table 5.17: Correlations UTAUT2

Both groups of nationality are presented in table 5.17. The resulting correlation matrix shows a clear significant correlation between the constructs for acceptance and use of technology on behavioural intention and use. Confirming the literature on the acceptance and use of online food delivery platforms in both The Netherlands and Germany.

6

Discussion

The following sections discuss the contributions to the academic fields and business/managerial implications. After these contributions the limitations and reflection on the research project are discussed by the author, followed by the corroborating link between this master thesis and the Management of Technology program. Finally, the chapter analyses future research recommendations with this data set and tries to clarify and disentangle the mechanisms that drive Culture and the acceptance and use of technology. This section concludes with recommendations for future research in the research fields addressed in this project.

6.1. Academic Relevance

The different fields of innovation studies that examine Technology Acceptance Models (TAM), with scholars from different fields that focus on Culture, and scientists investigating Platform Competition, are growing more complex every day (Rietveld and Schilling, 2020). In the meantime there is an increasing demand for measurable quantification of the different aspects that influence the acceptance and use of technology cross-cultural barriers. Culture has many facets that can be examined, and the cultural dimensions give a clear country-level perspective on values measured on a larger scale. Add in-depth measuring of individual tendencies towards acceptance and use of technology and questions on aspects that influence behavioural intent and use to better understand consumers.

In previous studies, the cultural dimensions are recognised as relevant; however, only some of the dimensions are considered (Individualism and Uncertainty Avoidance) (Marcus and Baumgartner, 2004; Posey et al., 2010). With the unified theory of acceptance and use, the main focus over the last few years have been with E-health, Banking, Hotels, NFC, and Social Platforms (Herrero et al., 2017; Morosan and DeFranco, 2016; Owusu Kwateng et al., 2019; Rahman et al., 2020; Tavares et al., 2018; Yuan et al., 2015). Extending UTAUT with cultural dimensions on multi-sided digital platforms will improve TAM's understanding of a complete generalised theory.

In this research project, the effects of Culture on the use and acceptance of Multi-sided Digital Platforms have been studied. Using the unified theory of acceptance and use of technology (adapted to consumers, UTAUT2) (Venkatesh et al., 2012), the research project explores the effect of Culture as captured in the cultural dimensions of Hofstede (Hofstede, 2011). The current study attempts to extend UTAUT2 with cultural effects in the field of digital platform competition. This overarching study addresses multiple areas of interest to different academic fields, combining the overlap between the fields to contribute to the current theories on Social and Management sciences, technology acceptance, and platform competition.

6.1.1. Social and Management Sciences

First, to the field of social and management sciences for the contribution of Cultural influences, the literature review has shown the cultural aspects to be relevant. Some cross-cultural studies have shown that Culture affects social and management theories (UTAUT2 relies heavily on measuring individual characteristics) (Cardon and Marshall, 2008; Hasan and Ditsa, 1999). However, the level of measurement is shown to be highly critical in assessing the effects. For a county-level measurement, the number of counties in which the study is conducted needs a significant amount ($>$ 10 countries) and not just a minimal response rate of individuals ($>$ 50 valid participants per country). If the cross-cultural examination is attempted between only two countries, this study proves that the level of measurement needs to be on the individual's level.

Because of their geographical location (neighbouring countries) the expectation was that the cultural differences could be of minor significance. This allowed this project to focus on the differentiating factors that could benefit growing multi-sided platforms tremendously. The benefit could predominantly visible to smaller platforms that test their products first in neighbouring countries. By selecting these neighbouring countries is this research able to validate the differentiating factors of the cultural dimensions. However, when focusing on these differences in cultural dimensions, it was found that the influence was non-existent.

6.1.2. Technology Acceptance

Second, the field of technology acceptance gains a controlled study on the acceptance and use of a technology acceptance model. The significant results on the UTAUT2-model relations between the independent constructs and the behavioural intention and use support the use of UTAUT2 to measure the acceptance and use of technology from a consumer perspective.

The correlation matrix on UTAUT2-constructs, presented in table 5.17, are noteworthy. This matrix shows that the constructs used in UTAUT2 have high predictive value in the online food delivery platform market. But not only in the OFDP markets, multi-sided digital platforms in general as well because of the multi-homing nature of these MSPs. In the systematic review by Rietveld and Schilling (2020) the authors express the importance of multi-homing in value creation for digital platforms. To be used cross-platforms is essential because it will allow the platforms to reach more users and maximise the acceptance of MSPs.

6.1.3. Platform Competition

Finally, the third field of platform competition gains added value in this study's findings on the influence of Culture on the country-level perspective. Platform competition is increasingly relevant to understand. One might argue that the current results of this project do not prove the effect of Culture but it clarifies part of the current knowledge base.

As mentioned in the systematic review by Rietveld and Schilling (2020), the interest in platform competition and the reorganization of businesses around these digital platforms is immense. The different aspects in this study, such as the geographical location of the examined cultures and the multiple multi-sided platforms investigated in this project, show that Culture's theorised effects are not of significant importance on a country-level measurement. The ecosystems that the multi-sided platforms operate in, create larger effects than measurable in the cultural dimensions. Contributing to all fields that are influenced by interest in platform competition.

To create value in platform competition and the wholesome ecosystems that these platforms attempt to create is of great interest but remains under-investigated (Adner and Kapoor, 2010; Hannah and Eisenhardt, 2018). This project shows the importance of culture in theses ecosystems when expanding to countries with minor differences in cultural dimensions.

6.2. Practical Relevance

With the extension into the field of platform competition can this research project contribute to an insight in the development of digital platforms. The specific focus on multi-sided digital platforms is especially relevant as they moved into the global arena with platforms such as Facebook and Google. Cross-cultural aspects and differences between cultures can have more and more impact on the acceptance and use of technologies. In the present study the cultural aspects might seem irrelevant, however, because of closeness of the countries and cultures present in this project then relevance increases. If cultural differences are having effect in these circumstances, how will these fair in more differentiating cultures?

The strength in this study is the fact that it combines two very well researched models, UTAUT2 and the Cultural Dimensions of Hofstede. One can disagree with the insights that the studies create, but they have both created a deeper understanding of the factors that influence behaviour. With the UTAUT2-model the acceptance and use of OFDP is corroborated and the data clearly supports these findings in great detail, shown in table 5.17. The Hofstede model is clear on its use in individual cases, however, as extension to UTAUT2 the individual aspect is less relevant. The acceptance and use has been tested with the UTAUT2-model and the cultural dimensions have been measured on a country-level.

The demographics from the respondents (table 4.6) show that $> 80\ \%$ of the participants is under 35 years old, also known as the millennial generation (Moore, 2012). This generation is known for actively using and accepting the role of technology in every day life. As shown in this research project, this generation also has a high acceptance and use of technology of multi-sided platforms such as OFDPs (table 5.17).

Because the aim of this study was to measure the cultural dimensions on the country-level, it shows a clear picture that the current constructs that make up the dimensions are ineffective to determine the behavioural intention and use. This results calls for papers of more individual-levels of cultural measurements (McCoy et al., 2005b). The current study clearly contributes in the level of measurement that is used for cultural dimensions and its relevance in cross-cultural investigations.

With culture widely acknowledged to have an effect on the acceptance and use of technology (Alsaleh et al., 2019; Kao, 2009; Leidner and Kayworth, 2006; Png et al., 2001; Sundqvist et al., 2005), the measurement of cultural dimensions that could influence acceptance behaviour needs a more individual approach. The found differences on cultural dimensions (figure 5.7, Masculinity vs Femininity, Long-term Orientation, and Indulgence vs Restraint) show no effect on a macro-level, but there is still a difference of more than 10 year between the countries acceptance of OFDPs.

6.3. Limitations & Reflection

In this section the clear limitations of the study are presented, that could affect this research project.

6.3.1. Scope

In the initial literature review, the information on overlapping studies between culture and the effect on acceptance and use of technology was minimal. The literature on technology acceptance models is extremely abundant and literature on culture from one field of study is contested by another, i.e. Baskerville (2003) attack on Hofstede static interpretation of Culture or the critique summarized by Myers and Tan (2002, p.7). Both aspects resulted in a fragmented literature search so that the definition of the objective and proposal were delayed considerably.

Within the time-frame of a thesis project, the ability to investigate and thoroughly perform a systematic review was lacking. This had a negative impact on the project on the level of clarity of contribution, the field of study is not singularly defined for academic research. With this in mind, a control interview with relevant experts on the effect of culture and acceptance and use of technology could not be

performed and currently the project relies on the available academic literature.

6.3.2. Model and Survey

The conceptual model is constructed from academic theory and focuses on extending the accepted scientific constructs. In the construction of the model the different modules that supported the development of the survey are adapted to fit the research project. However, with the application of cultural dimensions in the field of technology acceptance models, limitations are present how far the questions can be adapted. Reflecting on the development of the questionnaire, the research project could benefit from a more adapted version to measure the cultural dimensions.

One of the challenges in the development of the survey, was the proper adaptation of the constructs not to lose their meaning of the concept during translation. By specifically selecting the home country of the researcher and languages in which the author could converse in, the construct bias and interpretation of the questions were prevented. Also, by selecting countries that have close geographical proximity, the measurement scales for demographics (e.g. degree) and administration of the questionnaire could be sufficiently controlled for method bias (Straub et al., 2002).

Without addressing the context in which this study was conducted, the relevant data could be missed. In the present time when this research project was gathering its quantitative data, the world was in the midst of the COVID-19 pandemic. The regulations that were applied to curb the spread of the virus, could have significantly impacted the research data. Some of the news-outlets and platforms have reported during this study, that the growth of online food delivery platforms has been in the double digits (e.g. growth report Takeaway.com (Groen et al., 2021)). The consumers were locked out of enjoying dining in restaurants, increased their search for a replacement of similar experiences provided by online food delivery platforms. Furthermore, many restaurants suddenly registered on the platforms due to the inability to receive guest at their locations.

6.3.3. Data Analysis

With a sample size of more than 350 valid respondents the data is rich enough for relevant data analysis. In the current setting of linear regression analysis the cultural dimensions have not taken advantage of the benefits that new statistical techniques can offer. In the literature review, several new techniques were applied to investigate the relations in the UTAUT2-model, which if included in the current research could have provided more insight. However, the current course program of ”Management of Technology” is lacking the training in these newer statistical techniques which limited the use to linear regression analysis.

Strength of the current analysis is in grouping the participants from each country together showing that the differences in culture are present, even with neighbouring countries. Further strengths of this study are the large group of respondents and diversity in the collected participants. Removal of all participants that did not meet the boundary conditions increases the validity of the results, allowing for a reliable and generalizable conclusion. However, with the limitation of the scope to two countries the internal validity of the scales for cultural dimensions is unknown, because the minimal required number of countries (> 10) was not met.

6.3.4. Author’s Reflection

This project was performed a a requirement to graduate in the course of the master program of Delft University of Technology. Because the author was personally very interested in the subject, it turned out be difficult to limit the scope and narrow the focus to a manageable time-frame. Furthermore, the COVID-19 pandemic which made it necessary to work in isolation limited the possibilities of interaction with the supervisors and hampered an expedient progress of the research project.

It shows that during the different phases, literature review, model and questionnaire development,

and data analysis, different strengths and weaknesses of the author are present. In the creative first phase, proposal and literature review, the broad scope of the project hindered the process. As an ambitious and innovation driven person, the pressure of performing on an excellent level can severely limit output without proper feedback loops. During the pandemic, the feedback loops that were normally used (e.g. other students and quick discussions with peers), were suddenly unavailable. However, these aspects gave more insight in the requirements that are necessary in professional situations and dealing with them is a learning experience too. It made me realise the importance of researching a personal interest, combining it with other traits and knowing when to set a limit.

The development of the questionnaire and especially during the period of data analysis were moments that not only learning was important, but also flourishing traits that were already developed. Programming and analysing data-sets, working for a more effective and efficient process always peak my interest.

6.3.5. ”Management of Technology”

Over the course of 18 months, the program of ”Management of Technology” teaches its graduates the different aspects of technology managers. It focuses to learn the graduates the aspects of personalities, assessments of technology, analytical reasoning, organization, and how to manage the interface between human resources and technology. With technological developments and continuous development in all fields the prime traits that the program instills are formulated as follows (SPA TBM, 2019, p.3):

- Understanding technology as a corporate resource or understood from a corporate perspective
- Report on scientific studies in technological context
- Using scientific methods and techniques to analyze a problem as put forward in the Management of Technology curriculum

In this research project, the study conducted an investigation into recent technical developments of multi-sided digital platforms such as online food delivery platforms. This perspective views the technology for multi-sided digital platforms as a corporate resource and is understood from a consumer and corporate perspective.

This perspective is reported through reviewing academic literature to understand the innovative aspects of multi-sided platforms and how they are affected by acceptance and use of technology theories. Contributing to the understanding of the effects is the result of an extensive scientific study, development of conceptual models, and quantitative data-analysis. The curriculum of Management of Technology contributed in teaching these scientific skills, outstandingly so by courses such as ”MOT2312 - Research Methods”, ”MOT1435 - Technology, Strategy and Entrepreneurship”, and ”MOT2421 - Emerging and Breakthrough Technologies”. But also with personally chosen electives like ”SEN1611 - I&C Service Design” and ”ID5311-19 - Design Innovation 4.0”.

The aforementioned courses helped build an understanding of strategy, technological innovation, platform design, and research methods extremely useful in conducting the thesis project. Especially the introduction to teachers, that were a significant source of inspiration during the period of this project, and always at the ready for feedback and support.

6.4. Research Recommendations

In this section the recommendations for future research projects are discussed that grew during this project. Based on limitations and reflection in the previous section, the possibilities of the current data set are considered and extending avenues for academic work.

6.4.1. Future Analysis

With the present data-set, a structural equation model (SEM) could provide more insight on an individual level of analysis. The current country-level measurement of culture is restricting the analysis of the effect of nationality on the acceptance and use of technology. A more comprehensive SEM analysis could compare the nationality grouping and determine if the effect of nationality might not be measured in the Cultural Dimension approach. With a SEM analysis the research project data could create an extension to the UTAUT2-model for the purpose of exploring the nationality effects on acceptance and use of OFDPs.

In this research project the scope limited the analysis of the data-set to the cultural dimensions with a linear regression relation testing on behavioral intention and use. Within the data more interesting aspects are available, however, this would require a more inductive approach on an exploratory basis. Currently the project worked from a deductive approach in theorizing the perceived effects and testing these hypotheses. From a exploratory perspective, the data-set is believed to reveal more significant analysis, but also require in that case more explanatory control interviews.

Possible avenues for analysis is the reverse search for certain dimensions and grouping the participants more on the compatibility in cultural values. Constructing groups of $50+$ respondents with a similar tendency in dimensions, looking for distinct cultural overlap in their values and investigate the effects between these different groups.

6.4.2. Future Research

A clear limitation to this study was the country-level measurement of cultural dimensions, which influences the results found in this project. For a better understanding of the effect of culture on an individual level, a comparable study should be conducted in both countries but with the focus on measuring cultural indications on the individual-level. In a different manner than McCoy et al. (2007), the argument here is that cultural dimensions are not found to have an effect on a country-level. This research project can neither confirm or deny their suspicion on the failure of TAM in relation to cultural dimension. Therefore, the recommendation is to examine this relation further with multiple countries for a better country-level perspective for higher internal validity and in another project with culture measured on the individual-level.

In addition to measuring the aspects of online food delivery in the form that this research project investigated. During the project, several new forms of food delivery were also brought up as potential interference on the data-set. In the current project, this interference was minimal, however, the aspect of other forms of home delivered food (e.g. Frozen meals or Fresh food boxes) is cause for discussion and certainly recommendation for future research. The reasoning behind the use of online food delivery has not been part of the current research project's scope, but an examination of these reasons could very well highlight aspects relevant to the field of platform competition (Ray et al., 2019).

Finally, the interesting part about culture is that it is theorized and proven to have influence on the acceptance and use of technology (Leidner and Kayworth, 2006). Researching the cultural aspect does pose more questions than answers because of the complexity of culture as a variable. One could question the results that cultures that have greater differences would yield, when compared to studies with minor differences in culture which still have significant acceptance and use variation (Sundqvist et al., 2005).

When reviewing the literature on the platform competition and how value is added by providing services for both kind of users, the realisation grew that the network effects could have unintended consequences, such as monopoly markets, platform dependence and. Currently, the academic literature is starting to realise and examine these effects, however, it can benefit from more interest. Karamshetty et al. (2020), investigates the demand forecasting and food-waste aspects of the platform dependence, but the network effects that in a monopoly market operate can be destructive to the users as well. Research into the aspect of regulation in the field of platform competition is something that the

author greatly recommends as future projects.

7

Conclusion

The following chapter presents the main findings of the research project and concludes whether the objective of the project is achieved.

Main Findings

In this section are the main findings presented by answering the research questions from chapter 1.4. The objective of this research project is to try and ascertain the following:

> Understand and determine the effect of Country-level culture on the acceptance and use of Multi-sided Digital Platforms by consumers.

Considering the many forms of multi-sided digital platform, the focus in this research was on the online food delivery platforms (OFDPs), which are a prime example of multi-sided platforms. With the scope limited to OFDPs, the critical factor of this objective was to determine a clear understanding of culture and acceptance of technology. Furthermore, which level of measurement would support the objective to determine the effect of culture on the use and acceptance.

This project will achieving this result through research questions that are formulated to help build an understanding of the current scientific knowledge base across different fields and ultimately support a scientific contribution in their perspective fields. The project will develop a more narrow framework of theory for both business practical and scientific knowledge with recommendations to extend scholars and managers capabilities. The main research question is formulated as:

> What is the effect of culture on the acceptance and use of multi-sided digital platforms?

Starting with the first part of this path was to construct a review of literature assessing the current state of knowledge with the first research sub-question:

1. What academic theories have been formulated on the effect of culture on the acceptance and use of multi-sided digital platforms?

Multi-sided digital platforms are becoming vital parts of the service infrastructure for consumers. The benefits of aggregate platforms that collect, index, and construct a service database is most beneficial for consumers and small-medium businesses (SMEs). The multi-sided platform can facilitate between

two user groups, allowing for a reduction in costs on both sides in search costs and transaction costs, and for SMEs also reduce marketing costs.

The acceptance and use of technology theories start in behavioural sciences, with the theory of reasoned action on behavioural intention and behaviour (Fishbein and Ajzen, 1977). This theory is quickly extended towards adoption theories to examine external variables (Perceived Use, Perceived Ease of Use) that influence the Attitude and Behavioural Intention, called Technology Acceptance Model (Davis Jr., 1985). TAM is believed to be the start of many models that attempt to extend or complement this theory, to include many different facets. The most recent (to the authors knowledge) and complete model is the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) specifically developed for the consumer perspective (Venkatesh et al., 2012). UTAUT2 includes many constructs that assess the individuals attitude while examining their final behavioural intention and use behaviour.

In these theories there is overlap with the social fields of individuals attitude that can be argued to support a indication of culture. In different studies, (Gallivan and Srite, 2005; Hillier, 2003; Lee et al., 2007), the effect is theorized and tested, however, only on a few cultural dimensions. These dimensions are constructed by Hofstede (1980), when examining the cultural consequences in business context. In development and under continued scrutinising the cultural dimensions have been extended to include six dimensions by Hofstede (2011). National culture is dimensionalized in Power Distance, Uncertainty Avoidance, Individualism/Collectivism, Masculinity/Femininity, Long/Short Term Orientation, and Indulgence/Restraint.

The current scientific body of knowledge, acknowledges the effects of the dimensions Individualism and Uncertainty Avoidance on acceptance and use of technology. The cross-cultural acceptance and use of technology has been applied to different digital industries, however, the combination with all the cultural dimensions has not been found. This concludes the answer to the first research sub-question, the current scientific knowledge on the effect of culture on the acceptance and use of technology.

With the knowledge from the first answer, current conceptual model with hypotheses in chapter 3 is developed. The conceptual model extends UTAUT2-constructs, behavioural intention and use behaviour, in relation to the six cultural dimensions. The hypotheses in the conceptual model propose that each of the dimensions have a correlating and predicting relation to the dependent variables from UTAUT2, behavioural intention and use behaviour.

With the conceptual model and literature review the second and third research sub-question are formulated:

2. What is the effect of culture on the use of MSPs in Germany and the Netherlands?
3. What do the results from the effect of culture on the use of MSPs in Germany and the Netherlands indicate according to academic literature?

The second sub-question is answered with the results from a questionnaire conducted on participants recruited on online research platforms. As the hypothesis model shows in chapter 3, figure 3.1, the influence of cultural dimensions is expected to have positive and negative relations with behavioural intent and use behaviour.

This direct relation with behaviour is different from using culture as a moderating variable and could provide direct insight in the relation that culture has on the acceptance and use behaviour. The analysis of the collected quantitative data from the respondents accepted the null-hypotheses for all cultural dimensions. There was no significant effect of the cultural dimensions on the behavioural intention and use behaviour. When adjusting the linear regression analysis for age and gender, the results did not provide significant effects from the cultural dimensions. Therefore, the relation between cultural dimensions and acceptance and use behaviour is not significant.

Controlling the analysis of the cultural dimensions with the analysis of the UTAUT2 constructs, show that the constructs were significant in measuring the behavioural intention and use behaviour.

With no significant effects found in the data but with significant relations found in the UTAUT2 model, the literature acknowledged that the online food delivery platforms are accepted and used in both The Netherlands and Germany.

To the knowledge of the author, there are now only two research projects (including this project) that have examined the relation between culture and technology acceptance in geographical nearby cultures (Sundqvist et al., 2005). This indicates that there is no definitive evidence that similarities in culture explain the acceptance and use in these countries. As the author mentions in the discussion chapter, the level of measurement is on a macro-level, showing differences between the different values on the cultural dimensions. However, these relations with the acceptance and use behaviour is not explained by the differences in cultural dimensions in these nearby countries.

The current analysis of the quantitative data and the correlating answer from the academic literature allows for an answer to the final sub-question. The forth research question is formulated to activate the results from the research project for application into practice.

4. How can the cultural influence on the acceptance and use of multi-sided platforms be integrated in platform competition strategy?

As no significant effects of cultural dimensions on the acceptance and use of multi-sided platforms are found, platform competition strategy can, based on the data in this research project, chose to reduce the weight that might be given to cultural aspects of the technology. In short, the aspects of multi-sided platforms that are developed with culture as leading design mantra can be minimized.

However, in the independent variables from the constructs of UTAUT2 and their effect on the behavioural intent and use behaviour the nationality aspect does seem to differ. This would indicate that design that considers the independent variables from UTAUT2 could influence the behavioural intent and use behaviour, possibly down to the level of nationality.

To answer on the effect of cultural dimensions on the acceptance and use of multi-sided platforms, the main research question, is to deny the that the effect exists based on the current results from this quantitative study. Present study measured the cultural dimensions on the country-level, a high level of measurement. The result that in this study no significant relation is found on the individualism and uncertainty avoidance dimensions does suggest that the cultural dimensions have results in previous studies that need a re-examination.

Bibliography

Ron Adner and Rahul Kapoor. Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal*, 31(3):306–333, 3 2010. ISSN 01432095. doi: 10.1002/smj.821. URL https://onlinelibrary.wiley.com/doi/full/10.1002/smj.821https://onlinelibrary.wiley.com/doi/abs/10.1002/smj.821https://onlinelibrary.wiley.com/doi/10.1002/smj.821.

Icek Ajzen. From Intentions to Actions: A Theory of Planned Behavior. In *Action Control*, pages 11–39. Springer Berlin Heidelberg, Berlin, Heidelberg, 1985. doi: 10.1007/978-3-642-69746-3{_}2. URL https://link.springer.com/chapter/10.1007/978-3-642-69746-3_2http://link.springer.com/10.1007/978-3-642-69746-3_2.

Ali Abdallah Alalwan. Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse. *International Journal of Information Management*, 50:28–44, 2 2020. ISSN 02684012. doi: 10.1016/j.ijinfomgt.2019.04.008.

Dhoha A. Alsaleh, Michael T. Elliott, Frank Q. Fu, and Ramendra Thakur. Cross-cultural differences in the adoption of social media. *Journal of Research in Interactive Marketing*, 13(1):119–140, 3 2019. ISSN 2040-7122. doi: 10.1108/JRIM-10-2017-0092. URL https://www.emerald.com/insight/content/doi/10.1108/JRIM-10-2017-0092/full/html.

Khaled A. Alshare, Hani I. Mesak, Elizabeth E. Grandon, and Masood A. Badri. Examining the moderating role of national culture on an extended technology acceptance model. *Journal of Global Information Technology Management*, 14(3):27–53, 2011. ISSN 1097198X. doi: 10.1080/1097198X.2011.10856542. URL https://www.tandfonline.com/doi/abs/10.1080/1097198X.2011.10856542.

Rainer Alt and Hans Dieter Zimmermann. Electronic Markets on platform competition. *Electronic Markets*, 29(2):143–149, 6 2019. ISSN 14228890. doi: 10.1007/s12525-019-00353-y.

Kallol Bagchi, Paul Hart, and Mark F. Peterson. National culture and information technology product adoption. *Journal of Global Information Technology Management*, 7(4):29–46, 2004. ISSN 1097198X. doi: 10.1080/1097198X.2004.10856383. URL https://www.tandfonline.com/doi/abs/10.1080/1097198X.2004.10856383.

Rachel F. Baskerville. Hofstede never studied culture. *Accounting, Organizations and Society*, 28(1):1–14, 1 2003. ISSN 03613682. doi: 10.1016/S0361-3682(01)00048-4.

Kevin J. Boudreau and Lars B. Jeppesen. Unpaid crowd complementors: The platform network effect mirage. *Strategic Management Journal*, 36(12):1761–1777, 12 2015. ISSN 10970266. doi: 10.1002/smj.2324. URL https://www.onlinelibrary.wiley.com/doi/full/10.1002/smj.2324https://www.onlinelibrary.wiley.com/doi/abs/10.1002/smj.2324https://onlinelibrary.wiley.com/doi/10.1002/smj.2324.

Susan A. Brown, Viswanath Venkatesh, and Hillol Bala. Household Technology Use: Integrating Household Life Cycle and the Model of Adoption of Technology in Households. *The Information Society*, 22(4):205–218, 9 2006. ISSN 0197-2243. doi: 10.1080/01972240600791333. URL http://aisel.aisnet.org/misq/vol29/iss3/11http://www.tandfonline.com/doi/abs/10.1080/01972240600791333.

Janice Burn, K.B.C. Saxena, Louis Ma, and Hin Keung Cheung. Critical Issues of IS Management in Hong Kong. *Journal of Global Information Management*, 1(4):28–37, 10 1993. ISSN 1062-7375. doi: 10.4018/jgim.1993100103. URL http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/jgim.1993100103.

Peter W Cardon and Bryan A Marshall. National culture and technology acceptance: The impact of uncertainty avoidance. *Issues in Information Systems*, IX(2):103–110, 2008. URL https://www.researchgate.net/publication/228644304.

Carmelo Cennamo and Juan Santaló. How to Avoid Platform Traps. *MIT Sloan Management Review*, 57(1):12–15, 2015. URL http://mitsmr.com/1OV0UWw.

Alice Chik and Camilla Vásquez. A comparative multimodal analysis of restaurant reviews from two geographical contexts. *Visual Communication*, 16(1):3–26, 2 2017. ISSN 1470-3572. doi: 10.1177/1470357216634005. URL http://journals.sagepub.com/doi/10.1177/1470357216634005.

Meehee Cho, Mark A. Bonn, and Jun (Justin) Li. Differences in perceptions about food delivery apps between single-person and multi-person households. *International Journal of Hospitality Management*, 77:108–116, 1 2019. ISSN 02784319. doi: 10.1016/j.ijhm.2018.06.019.

Fred D. Davis Jr. *A technology acceptance model for empirically testing new end-user information systems: Theory and results*. PhD thesis, Massachusetts Institute of Technology, 12 1985. URL https://dspace.mit.edu/bitstream/handle/1721.1/15192/14927137-MIT.pdf.

Marieke de Mooij. Convergence and divergence in consumer behaviour: Implications for global advertising. *International Journal of Advertising*, 2003. ISSN 02650487. doi: 10.1080/02650487.2003.11072848.

Marieke de Mooij. *Consumer Behavior and Culture: Consequences for Global Marketing and Advertising*. SAGE Publications, 3rd edition, 2019. ISBN 9781526471598. URL https://books.google.nl/books?id=DOqaDwAAQBAJ.

Marieke de Mooij and Geert Hofstede. Cross-cultural consumer behavior: A review of research findings. *Journal of International Consumer Marketing*, 23(3-4):181–192, 5 2011. ISSN 08961530. doi: 10.1080/08961530.2011.578057.

Mark de Reuver, Carsten Sørensen, and Rahul C. Basole. The Digital Platform: A Research Agenda. *Journal of Information Technology*, 33(2):124–135, 6 2018. ISSN 0268-3962. doi: 10.1057/s41265-016-0033-3. URL http://journals.sagepub.com/doi/10.1057/s41265-016-0033-3.

Yogesh K. Dwivedi, Mahmud Akhter Shareef, Antonis C. Simintiras, Banita Lal, and Vishanth Weerakkody. A generalised adoption model for services: A cross-country comparison of mobile health (m-health). *Government Information Quarterly*, 33(1):174–187, 1 2016. ISSN 0740624X. doi: 10.1016/j.giq.2015.06.003. URL https://linkinghub.elsevier.com/retrieve/pii/S0740624X15000751.

Miguel Morales Espinoza. Assessing the cross-cultural applicability of a service quality measure: A comparative study between Quebec and Peru. *International Journal of Service Industry Management*, 10(5):449–468, 1999. ISSN 09564233. doi: 10.1108/09564239910288987.

Rima Fayad and David Paper. The Technology Acceptance Model E-Commerce Extension: A Conceptual Framework. *Procedia Economics and Finance*, 26:1000–1006, 1 2015. ISSN 22125671. doi: 10.1016/s2212-5671(15)00922-3.

Andy Field. *Discovering Statistics Using IBM SPSS Statistics*. SAGE Publications Ltd, London, 4th edition, 2013. ISBN 976-1-4462-4917-8. URL https://books.google.nl/books?id=c0Wk9IuBmAoC&dq=Discovering+statistics+using+IBM+SPSS+statistics.&lr=&hl=nl&source=gbs_navlinks_s.

Arlene Fink. *The Survey Handbook*. SAGE Publications, Inc., Los Angeles, California, 2nd edition, 1 2003. ISBN 9780761925101. URL https://uk.sagepub.com/en-gb/eur/the-survey-handbook/book225646.

Martin Fishbein and Icek Ajzen. Belief, attitude, intention and behavior: An introduction to theory and research. *Philosophy and Rhetoric*, 10(2):130–132, 1977.

Gabrielle Ford, Paula Kotzè, and Aaron Marcus. Cultural Dimensions: Who is Stereotyping Whom? *Internationalization, Online Communities and Social Computing: Design and Evaluation*, 10:1–10, 2005. URL http://www.academia.edu/download/6355993/1049.pdf.

Michael Gallivan and Mark Srite. Information technology and culture: Identifying fragmentary and holistic perspectives of culture. *Information and Organization*, 15(4):295–338, 10 2005. ISSN 14717727. doi: 10.1016/j.infoandorg.2005.02.005. URL https://linkinghub.elsevier.com/retrieve/pii/S1471772705000126.

Annabelle Gawer. Bridging differing perspectives on technological platforms: Toward an integrative framework. *Research Policy*, 43(7):1239–1249, 9 2014. ISSN 00487333. doi: 10.1016/j.respol.2014.03.006. URL https://linkinghub.elsevier.com/retrieve/pii/S0048733314000456.

Annabelle Gawer and Michael A. Cusumano. Industry platforms and ecosystem innovation. *Journal of Product Innovation Management*, 31(3):417–433, 5 2014. ISSN 15405885. doi: 10.1111/jpim.12105. URL https://onlinelibrary.wiley.com/doi/full/10.1111/jpim.12105https://onlinelibrary.wiley.com/doi/abs/10.1111/jpim.12105https://onlinelibrary.wiley.com/doi/10.1111/jpim.12105.

Geert Hofstede and Michael Minkov. VALUES SURVEY MODULE 2013 MANUAL. (May):17, 5 2013.

Asghar Ghasemi and Saleh Zahediasl. Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology and Metabolism*, 10(2):486–489, 4 2012. ISSN 1726913X. doi: 10.5812/ijem.3505. URL /pmc/articles/PMC3693611/?report=abstracthttps://www.ncbi.nlm.nih.gov/pmc/articles/PMC3693611/.

Jitse Groen, Brent Wissink, and Joerg Gerbig. Just Eat Takeaway.com Q4 2020 Growth Report. Technical Report January 2019, TKWY, Amsterdam, 2021. URL https://www.justeattakeaway.com/investors/results-and-reports/?ufprt=40E8E86584AC8E591603542D1A5224ED8548ADA8C65729194282DC6BE399B8BC929FA4B968FF37A032A07842

Nefike Gunden, Cristian Morosan, and Agnes DeFranco. Consumers' intentions to use online food delivery systems in the USA. *International Journal of Contemporary Hospitality Management*, 32 (3):1325–1345, 4 2020. ISSN 09596119. doi: 10.1108/IJCHM-06-2019-0595. URL https://www.emerald.com/insight/content/doi/10.1108/IJCHM-06-2019-0595/full/html.

Andrei Hagiu and Julian Wright. Multi-sided platforms. *International Journal of Industrial Organization*, 43:162–174, 11 2015. ISSN 01677187. doi: 10.1016/j.ijindorg.2015.03.003.

Douglas P. Hannah and Kathleen M. Eisenhardt. How firms navigate cooperation and competition in nascent ecosystems. *Strategic Management Journal*, 39(12):3163–3192, 12 2018. ISSN 01432095. doi: 10.1002/smj.2750. URL http://doi.wiley.com/10.1002/smj.2750.

Helen Hasan and George Ditsa. The Impact of Culture on the Adoption of IT. *Journal of Global Information Management*, 7(1):5–15, 1 1999. ISSN 1062-7375. doi: 10.4018/jgim.1999010101. URL http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/jgim.1999010101.

Ángel Herrero, Héctor San Martín, and María del Mar Garcia-De los Salmones. Explaining the adoption of social networks sites for sharing user-generated content: A revision of the UTAUT2. *Computers in Human Behavior*, 71:209–217, 6 2017. ISSN 07475632. doi: 10.1016/j.chb.2017.02.007.

Mathew Hillier. The role of cultural context in multilingual website usability. *Electronic Commerce Research and Applications*, 2(1):2–14, 3 2003. ISSN 15674223. doi: 10.1016/S1567-4223(03)00005-X. URL https://linkinghub.elsevier.com/retrieve/pii/S156742230300005X.

Geert Hofstede. Culture and Organizations. *International Studies of Management & Organization*, 10 (4):15–41, 12 1980. ISSN 0020-8825. doi: 10.1080/00208825.1980.11656300. URL https://www.tandfonline.com/doi/abs/10.1080/00208825.1980.11656300.

Geert Hofstede. *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. SAGE Publications, 2nd edition, 2001. ISBN 9781452207933. URL https://books.google.nl/books?id=9HE-DQAAQBAJ.

Geert Hofstede. Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, 2(1):1–26, 1 2011. URL http://scholarworks.gvsu.edu/orpc/vol2/iss1/8.

Geert Hofstede, Geert Jan Hofstede, and Michael Minkov. *Cultures and Organizations: Software of the Mind.* McGraw-Hill Education, New York, New York, USA, 3rd edition, 2010. ISBN 978-0071664189.

Geert Hofstede, Geert Jan Hofstede, and Michael Minkov. National Culture, 2020. URL https://hi.hofstede-insights.com/national-culture.

Pia Honold. Learning How to Use a Cellular Phone: Comparison Between German and Chinese Users. *Technical Communication*, 46(2):196–205, 5 1999. URL https://www.ingentaconnect.com/content/stc/tc/1999/00000046/00000002/art00007.

Yujong Hwang. Investigating enterprise systems adoption: Uncertainty avoidance, intrinsic motivation, and the technology acceptance model, 2005. ISSN 0960085X. URL https://www.tandfonline.com/doi/abs/10.1057/palgrave.ejis.3000532.

R. Inglehart, C. Haerpfer, A. Moreno, C. Welzel, K. Kizilova, J. Diez-Medrano, M. Lagos, P. Norris, E. Ponarin, and B. Puranen. World Value Survey. Technical report, Madrid, 2014. URL https://www.worldvaluessurvey.org/WVSDocumentationWVL.jsp.

Danny Tengti Kao. The impact of transaction trust on consumers' intentions to adopt M-commerce: A cross-cultural investigation. *Cyberpsychology and Behavior*, 12(2):225–229, 4 2009. ISSN 10949313. doi: 10.1089/cpb.2008.0212. URL https://www.liebertpub.com/doi/abs/10.1089/cpb.2008.0212.

Varun Karamshetty, Michael Freeman, and Sameer Hasija. An Unintended Consequence of Platform Dependence: Empirical Evidence from Food-Delivery Platforms. Technical report, 2020.

Michael L. Katz and Carl Shapiro. Network externalities, competition, and compatibility, 1985. ISSN 00028282.

Mark Keil, Richard Mixon, Timo Saarinen, and Virpi Tuunainen. Understanding runaway information technology projects: Results from an international research program based on escalation theory. *Journal of Management Information Systems*, 10(4):65–85, 1994. ISSN 07421222. doi: 10.1080/07421222.1994.11518050. URL https://www.tandfonline.com/doi/abs/10.1080/07421222.1994.11518050.

Sung S. Kim and Naresh K. Malhotra. A longitudinal model of continued IS use: An integrative view of four mechanisms underlying postadoption phenomena. *Management Science*, 51(5):741–755, 5 2005. ISSN 00251909. doi: 10.1287/mnsc.1040.0326.

Alfred L. Kroeber. *The nature of culture*. University of Chicago Press, Chicago, 1952.

Alfred L. Kroeber and Talcott Parsons. The concepts of culture and of social system. *American sociological review*, 23(5):582–583, 10 1958. URL http://www.academia.edu/download/42083415/The_concepts_of_Culture_and_Social_System_talcott__parsons.doc.

Inseong Lee, Boreum Choi, Jinwoo Kim, and Se-Joon Hong. Culture-Technology Fit: Effects of Cultural Characteristics on the Post-Adoption Beliefs of Mobile Internet Users. *International Journal of Electronic Commerce*, 11(4):11–51, 7 2007. ISSN 1086-4415. doi: 10.2753/JEC1086-4415110401. URL https://www.tandfonline.com/doi/abs/10.2753/JEC1086-4415110401https://www.tandfonline.com/doi/full/10.2753/JEC1086-4415110401.

Dorothy E. Leidner and Timothy Kayworth. Review: A Review of Culture in Information Systems Research: Toward a Theory of Information Technology Culture Conflict. *MIS Quarterly*, 30(2):357, 6 2006. ISSN 02767783. doi: 10.2307/25148735. URL https://www.jstor.org/stable/25148735https://www.jstor.org/stable/10.2307/25148735.

Shannon Liao. Amazon admits defeat against Chinese e-commerce rivals like Alibaba and JD.com - The Verge, 2019. URL https://www.theverge.com/2019/4/18/18485578/amazon-china-marketplace-alibaba-jd-e-commerce-compete.

Heejin Lim and Jee-Sun Park. The Effects of National Culture and Cosmopolitanism on Consumers' Adoption of Innovation: A Cross-Cultural Comparison. *Journal of International Consumer Marketing*, 25(1):16–28, 1 2013. ISSN 0896-1530. doi: 10.1080/08961530.2013.751793. URL http://www.tandfonline.com/doi/abs/10.1080/08961530.2013.751793.

Moez Limayem, Sabine Gabriele Hirt, and Christy M.K. Cheung. How habit limits the predictive power of intention: The case of information systems continuance. *MIS Quarterly: Management Information Systems*, 31(4):705–737, 2007. ISSN 02767783. doi: 10.2307/25148817.

Thomas J. Madden, Pamela Scholder Ellen, and Icek Ajzen. A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin*, 18(1):3–9, 2 1992. ISSN 0146-1672. doi: 10.1177/0146167292181001. URL http://journals.sagepub.com/doi/10.1177/0146167292181001.

Aaron Marcus and Valentina-Johanna Baumgartner. A Practical Set of Culture Dimensions for Global User-Interface Development. In *Asia-Pacific Conference on Computer Human Interaction*, pages 252–261, Rotorua, New Zealand, 6 2004. Springer Verlag, Berlin, Heidelberg. ISBN 3540223126. doi: 10.1007/978-3-540-27795-8{_}26. URL https://link.springer.com/chapter/10.1007/978-3-540-27795-8_26http://link.springer.com/10.1007/978-3-540-27795-8_26.

Scott McCoy, Andrea Everard, and Brian M. Jones. An examination of the technology acceptance model in Uruguay and the us: A focus on culture. *Journal of Global Information Technology Management*, 8(2):27–45, 2005a. ISSN 1097198X. doi: 10.1080/1097198X.2005.10856395. URL https://www.tandfonline.com/doi/abs/10.1080/1097198X.2005.10856395.

Scott McCoy, Dennis F. Galletta, and William R. King. Integrating National Culture into IS Research: The Need for Current Individual Level Measures. *Communications of the Association for Information Systems*, 15(1):211–224, 2 2005b. ISSN 1529-3181. doi: 10.17705/1cais.01512. URL https://aisel.aisnet.org/cais/vol15/iss1/12.

Scott McCoy, Dennis F. Galletta, and William R. King. Applying TAM across cultures: The need for caution. In *European Journal of Information Systems*, volume 16, pages 81–90. Palgrave Macmillan Ltd., 2007. doi: 10.1057/palgrave.ejis.3000659. URL https://orsociety.tandfonline.com/doi/abs/10.1057/palgrave.ejis.3000659.

David P. McIntyre and Arati Srinivasan. Networks, platforms, and strategy: Emerging views and next steps. *Strategic Management Journal*, 38(1):141–160, 1 2017. ISSN 01432095. doi: 10.1002/smj.2596. URL https://onlinelibrary.wiley.com/doi/10.1002/smj.2596http://doi.wiley.com/10.1002/smj.2596.

Roberto J. Mejias, Morgan M. Shepherd, Douglas R. Vogel, and Litva Lazaneo. Consensus and Perceived Satisfaction Levels: A Cross-Cultural Comparison of GSS and Non-GSS Outcomes within and between the United States and Mexico. *Journal of Management Information Systems*, 13(3):137–161, 1996. ISSN 07421222. doi: 10.1080/07421222.1996.11518137. URL https://www.tandfonline.com/doi/abs/10.1080/07421222.1996.11518137.

Marguerite Moore. Interactive media usage among millennial consumers. *Journal of Consumer Marketing*, 29(6):436–444, 9 2012. ISSN 07363761. doi: 10.1108/07363761211259241.

Cristian Morosan and Agnes DeFranco. It's about time: Revisiting UTAUT2 to examine consumers' intentions to use NFC mobile payments in hotels. *International Journal of Hospitality Management*, 53:17–29, 2 2016. ISSN 02784319. doi: 10.1016/j.ijhm.2015.11.003.

Michael D. Myers and Felix B. Tan. Beyond Models of National Culture in Information Systems Research. *Journal of Global Information Management,*, 10(2):24–32, 1 2002. URL http://www.amazon.com/dp/1591400643.

Makoto Nakayama and Yun Wan. The cultural impact on social commerce: A sentiment analysis on Yelp ethnic restaurant reviews. *Information and Management*, 56(2):271–279, 3 2019. ISSN 03787206. doi: 10.1016/j.im.2018.09.004.

Makoto Nakayama, Simon Poon, Lee Chei Sian, Panagiotis Stamolampros, and Yun Wan. The Cultural Impact in Platform Competition. *Electronic Markets*, 30(3):1–3, 2020. URL http://www.electronicmarkets.org/call-for-papers/single-view-for-cfp/datum/2020/02/13/cfp-special-issue-on-the-cultural-impact-in-platform-competition/.

Nicolae Nistor, Thomas Lerche, Armin Weinberger, Ciprian Ceobanu, and Oliver Heymann. Towards the integration of culture into the Unified Theory of Acceptance and Use of Technology. *British Journal of Educational Technology*, 45(1):36–55, 1 2014. ISSN 00071013. doi: 10.1111/j.1467-8535.2012.01383.x. URL http://doi.wiley.com/10.1111/j.1467-8535.2012.01383.x.

H. Nysveen, Per E. Pedersen, and Helge Thorbjørnsen. Intentions to Use Mobile Services: Antecedents and Cross-Service Comparisons. *Journal of the Academy of Marketing Science*, 33 (3):330–346, 7 2005. ISSN 0092-0703. doi: 10.1177/0092070305276149. URL http://link.springer.com/10.1177/0092070305276149.

Arto Ojala, Minna Rollins, Sara Fraccastoro, and Mika Gabrielsson. The Internationalization of B2B Digital Platform Providers: The Role of Cross-National Distance and Digital Characteristics. In *Proceedings of the 53nd Hawaii International Conference on System Sciences (HICSS 2020)*, pages 4652–4661, Manoa, Hawaii, 2020. Hawaii International Conference on System Sciences. University of Hawai'i. ISBN 9783030366919. doi: 10.24251/HICSS.2020.571. URL https://hdl.handle.net/10125/64313.

Kwame Owusu Kwateng, Kenneth Afo Osei Atiemo, and Charity Appiah. Acceptance and use of mobile banking: an application of UTAUT2. *Journal of Enterprise Information Management*, 32(1):118–151, 2 2019. ISSN 17410398. doi: 10.1108/JEIM-03-2018-0055.

Geoffrey G. Parker and Marshall W. Van Alstyne. Two-sided network effects: A theory of information product design, 10 2005. ISSN 00251909. URL https://pubsonline.informs.org/doi/abs/10.1287/mnsc.1050.0400.

Geoffrey G Parker, Marshall W Van Alstyne, and Sangeet Paul Choudary. *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You*. W. W. Norton & Company, Inc, New York, New York, USA, 2016. ISBN 978-0-393-24913-2.

Gessuir Pigatto, Joao Guilherme de Camargo Ferraz Machado, Amanda dos Santos Negreti, and Lucas Miranda Machado. Have you chosen your request? Analysis of online food delivery companies in Brazil. *British Food Journal*, 119(3):639–657, 2017. ISSN 0007070X. doi: 10.1108/BFJ-05-2016-0207.

Ivan P.L. Png, Bernard C.Y. Tan, and Khai-Ling Wee. Dimensions of national culture and corporate adoption of IT infrastructure. *IEEE Transactions on Engineering Management*, 48(1):36–45, 2 2001. ISSN 00189391. doi: 10.1109/17.913164. URL http://ieeexplore.ieee.org/document/913164/.

Clay Posey, Paul Benjamin Lowry, Tom L. Roberts, and T. Selwyn Ellis. Proposing the online community self-disclosure model: The case of working professionals in France and the U.K. who use online communities. *European Journal of Information Systems*, 19(2):181–195, 2010. ISSN 14769344. doi: 10.1057/ejis.2010.15. URL https://www.tandfonline.com/doi/abs/10.1057/ejis.2010.15.

Lennora Putit and David Arnott. Micro-Culture and Consumers' Adoption of Technology: A Need to Re-evaluate the Concept of National Culture. *Academy of Marketing Science Review*, 6, 2007. URL http://www.amsreview.org/articles/putit06-2007.pdf.

Syed Abidur Rahman, Mirza Mohammad Didarul Alam, and Seyedeh Khadijeh Taghizadeh. Do mobile financial services ensure the subjective well-being of micro-entrepreneurs? An investigation applying UTAUT2 model. *Information Technology for Development*, 26(2):421–444, 4 2020. ISSN 0268-1102. doi: 10.1080/02681102.2019.1643278. URL https://www.tandfonline.com/doi/full/10.1080/02681102.2019.1643278.

Arghya Ray, Amandeep Dhir, Pradip Kumar Bala, and Puneet Kaur. Why do people use food delivery apps (FDA)? A uses and gratification theory perspective. *Journal of Retailing and Consumer Services*, 51:221–230, 11 2019. ISSN 09696989. doi: 10.1016/j.jretconser.2019.05.025. URL https://linkinghub.elsevier.com/retrieve/pii/S096969891930373X.

Joost Rietveld and Melissa A. Schilling. Platform Competition: A Systematic and Interdisciplinary Review of the Literature. *Journal of Management*, XX No. X:014920632096979, 11 2020. ISSN 0149-2063. doi: 10.1177/0149206320969791. URL http://journals.sagepub.com/doi/10.1177/0149206320969791.

Jean-Charles Rochet and Jean Tirole. Platform Competition in Two-Sided Markets. *Journal of the European Economic Association*, 1(4):990–1029, 6 2003. ISSN 1542-4766. doi: 10.1162/154247603322493212. URL https://academic.oup.com/jeea/article/2280902/Platform.

Jeroen Schepers and Martin Wetzels. A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects. *Information and Management*, 44(1):90–103, 1 2007. ISSN 03787206. doi: 10.1016/j.im.2006.10.007.

Mahmud Akhter Shareef, Vinod Kumar, Uma Kumar, and Ahsan Akhter Hasin. Application of Behavioral Theory in Predicting Consumers Adoption Behavior. *Journal of Information Technology Research*, 6 (4):36–54, 10 2013. ISSN 1938-7857. doi: 10.4018/jitr.2013100103. URL http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/jitr.2013100103.

Michael J. Shaw, Carl Shapiro, and Hal R. Varian. Information Rules: A Strategic Guide to the Network Economy. *The Academy of Management Review*, 2000. ISSN 03637425. doi: 10.2307/259025.

Ana Maria Soares, Minoo Farhangmehr, and Aviv Shoham. Hofstede's dimensions of culture in international marketing studies. *Journal of Business Research*, 60(3):277–284, 3 2007. ISSN 01482963. doi: 10.1016/j.jbusres.2006.10.018.

SPA TBM. Final Assessment Form MSc Thesis Project CoSEM | EPA | MOT, 2019.

Mark Srite. The Influence of National Culture on theAcceptance and Use of Information Technologies:An Empirical Study. In *AMCIS 1999 Proceedings*, volume 355, pages 1019–1021. Association for Information Systems, 12 1999. URL http://aisel.aisnet.org/amcis1999/355.

Mark Srite and Elena Karahanna. The Role of Espoused National Cultural Values in Technology Acceptance. *MIS Quarterly*, 30(3):679–704, 9 2006. ISSN 02767783. doi: 10.2307/25148745. URL https://www.jstor.org/stable/10.2307/25148745.

Detmar W. Straub. The effect of culture on IT diffusion: E-mail and FAX in Japan and the U.S. *Information Systems Research*, 5(1):23–47, 3 1994. ISSN 15265536. doi: 10.1287/isre.5.1.23. URL http://pubsonline.informs.org47.https//doi.org/10.1287/isre.5.1.23http://www.informs.org.

Detmar W. Straub, Mark Keil, and Walter Brenner. Testing the technology acceptance model across cultures: A three country study. *Information and Management*, 33(1):1–11, 11 1997. ISSN 03787206. doi: 10.1016/S0378-7206(97)00026-8.

Detmar W. Straub, Karen Loch, Roberto Evaristo, Elena Karahanna, and Mark Srite. Toward a Theory-Based Measurement of Culture. *Journal of Global Information Management*, 10(1):13–23, 1 2002. ISSN 1062-7375. doi: 10.4018/jgim.2002010102. URL http://www.idea-group.comhttp://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/jgim.2002010102.

Sanna Sundqvist, Lauri Frank, and Kaisu Puumalainen. The effects of country characteristics, cultural similarity and adoption timing on the diffusion of wireless communications. *Journal of Business Research*, 58(1 SPEC.ISS):107–110, 1 2005. ISSN 01482963. doi: 10.1016/S0148-2963(02)00480-0.

Kazuhito Suzuki and Low Sui Pheng. National Culture. In *Japanese Contractors in Overseas Markets. Management in the Built Environment*, chapter 4, pages 61–75. Springer, Singapore, Singapore, 2019. doi: 10.1007/978-981-13-7244-5{_}4. URL https://link.springer.com/chapter/10.1007/978-981-13-7244-5_4.

Bernard C.Y. Tan, Kwok Kee Wei, Richard T. Watson, Danial L. Clapper, and Ephraim R. McLean. Computer-mediated communication and majority influence: Assessing the impact in an individualistic and a collectivistic culture. *Management Science*, 44(9):1263–1278, 1998a. ISSN 00251909. doi: 10.1287/mnsc.44.9.1263.

Bernard C.Y. Tan, Kwok Kee Wei, Richard T. Watson, and Rita M. Walczuch. Reducing status effects with computer-mediated communication: Evidence from two distinct national cultures. *Journal of Management Information Systems*, 15(1):119–141, 1998b. ISSN 07421222. doi: 10.1080/07421222.1998.11518199. URL https://www.tandfonline.com/doi/abs/10.1080/07421222.1998.11518199.

Jorge Tavares, Amélia Goulão, and Tiago Oliveira. Electronic Health Record Portals adoption: Empirical model based on UTAUT2. *Informatics for Health and Social Care*, 43(2):109–125, 4 2018. ISSN 1753-8157. doi: 10.1080/17538157.2017.1363759. URL https://www.tandfonline.com/doi/full/10.1080/17538157.2017.1363759.

Jennifer E.F. Teitcher, Walter O. Bockting, José A. Bauermeister, Chris J. Hoefer, Michael H. Miner, and Robert L. Klitzman. Detecting, preventing, and responding to "fraudsters" in internet research: Ethics and tradeoffs. *Journal of Law, Medicine and Ethics*, 43(1):116–133, 1 2015. ISSN 1748720X. doi: 10.1111/jlme.12200. URL https://www.cambridge.org/core/product/identifier/S1073110500016260/type/journal_article.

Llewellyn D.W. Thomas, Erkko Autio, and David M. Gann. Architectural leverage: Putting platforms in context. *Academy of Management Perspectives*, 28(2):198–219, 1 2014. ISSN 15589080. doi: 10.5465/amp.2011.0105. URL https://journals.aom.org/doi/abs/10.5465/amp.2011.0105.

Hans van der Heijden. User Acceptance of Hedonic Information Systems. *MIS Quarterly*, 28(4):695–704, 12 2004. ISSN 02767783. doi: 10.2307/25148660. URL https://www.jstor.org/stable/25148660https://www.jstor.org/stable/10.2307/25148660.

Yvonne M. Van Everdingen and Eric Waarts. The effect of national culture on the adoption of innovations. *Marketing Letters*, 14(3):217–232, 10 2003. ISSN 09230645. doi: 10.1023/A:1027452919403. URL https://link.springer.com/article/10.1023/A:1027452919403.

John F. Veiga, Steven Floyd, and Kathleen Dechant. Towards modelling the effects of national culture on IT implementation and acceptance. *Journal of Information Technology*, 16(3):145–158, 9 2001. ISSN 14664437. doi: 10.1080/02683960110063654. URL http://www.tandf.co.uk/journals.

Viswanath Venkatesh. Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model. *Information Systems Research*, 11(4):342–365, 12 2000. ISSN 10477047. doi: 10.1287/isre.11.4.342.11872. URL https://pubsonline.informs.org/doi/abs/10.1287/isre.11.4.342.11872.

Viswanath Venkatesh and Hillol Bala. Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2):273–315, 5 2008. ISSN 00117315. doi: 10.1111/j.1540-5915.2008.00192.x. URL https://onlinelibrary.wiley.com/doi/full/10.1111/j.1540-5915.2008.00192.xhttps://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-5915.2008.00192.xhttps://onlinelibrary.wiley.com/doi/10.1111/j.1540-5915.2008.00192.x.

Viswanath Venkatesh and Fred D. Davis. Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2):186–204, 2 2000. ISSN 00251909. doi: 10.1287/mnsc.46.2.186.11926. URL https://pubsonline.informs.org/doi/abs/10.1287/mnsc.46.2.186.11926.

Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, and Fred D. Davis. User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, 27(3):425–478, 2003. ISSN 02767783. doi: 10.2307/30036540.

Viswanath Venkatesh, James Y.L. Thong, and Xin Xu. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly: Management Information Systems*, 36(1):157–178, 3 2012. ISSN 21629730. doi: 10.2307/41410412. URL http://www.jstor.com/stable/41410412.

Chihiro Watanabe, Kashif Naveed, Pekka Neittaanmäki, and Brenda Fox. Consolidated challenge to social demand for resilient platforms - Lessons from Uber's global expansion. *Technology in Society*, 48:33–53, 2 2017. ISSN 0160791X. doi: 10.1016/j.techsoc.2016.10.006.

Vincent Cheow Sern Yeo, See Kwong Goh, and Sajad Rezaei. Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services. *Journal of Retailing and Consumer Services*, 35:150–162, 3 2017. ISSN 09696989. doi: 10.1016/j.jretconser.2016.12.013.

Shupei Yuan, Wenjuan Ma, Shaheen Kanthawala, and Wei Peng. Keep Using My Health Apps: Discover Users' Perception of Health and Fitness Apps with the UTAUT2 Model. *Telemedicine and e-Health*, 21(9):735–741, 9 2015. ISSN 15563669. doi: 10.1089/tmj.2014.0148. URL https://www.liebertpub.com/doi/abs/10.1089/tmj.2014.0148.

Amel B Zakour. Cultural Differences and Information Technology Acceptance. In *SAIS 2004 Proceedings*. Association for Information Systems, 1 2004. URL http://aisel.aisnet.org/sais2004.

Yang Zhao, Stephan von Delft, Anna Morgan-Thomas, and Trevor Buck. The evolution of platform business models: Exploring competitive battles in the world of platforms. *Long Range Planning*, page 101892, 7 2019. ISSN 00246301. doi: 10.1016/j.lrp.2019.101892. URL https://linkinghub.elsevier.com/retrieve/pii/S0024630118306368.

Appendix

A

Questionnaire

Demographics

1. What is your sex?
2. How old are you?
3. What is the highest level of school you have completed or the highest degree you have received?
4. Which statement best describes your current employment status?
5. What is your nationality?
6. If different, what was your nationality at birth?

Cultural Values

- Please think of an ideal job, disregarding your present job, if you have one. In choosing an ideal job, how important would it be to you to ...
    1. have sufficient time for your personal or home life? (IDV-1)
    2. have a boss (direct superior) you can respect? (PDI-1)
    3. get recognition for good performance? (MAS-1)
    4. have security of employment? (IDV-2)
    5. have pleasant people to work with? (MAS-2)
    6. do work that is interesting? (IDV-3)
    7. be consulted by your boss in decisions involving your work? (PDI-2)
    8. live in a desirable area? (MAS-3)
    9. have a job respected by your family and friends? (IDV-4)
    10. have chances for promotion? (MAS-4)
- In your private life, how important would it be to you to ...
    1. keep time free for fun? (IVR-1)
    2. satisfy your desires? (IVR-2)
    3. make time for a friend? (LTO-1)

4. thrift? (not spending more than needed) (LTO-2)

- How often do you feel nervous or tense? (UAI-1)
- Are you a happy person? (IVR-3)
- Do other people or circumstances ever prevent you from doing what you really want to? (IVR-4)
- All in all, how would you describe your state of health these days? (UAI-2)
- How proud are you to be a citizen of your country? (LTO-3)
- How often, in your experience, are subordinates afraid to contradict their boss (or students their teacher)? (PDI-3)
- To what extent do you agree or disagree with each of the following statements?

1. One can be a good manager without having a precise answer to every question that a subordinate may raise about his or her work. (UAI-3)
2. Persistent efforts are the surest way to results. (LTO-4)
3. An organization structure in which certain subordinates have two bosses should be avoided at all cost. (PDI-4)
4. A company's or organization's rules should not be broken - not even when the employee thinks breaking the rule would be. (UAI-4)

UTAUT2

Performance Expectancy

1. I find online food delivery platforms useful in my life.
2. Using Online Food Delivery Platforms helps me order in more quickly.
3. Using Online Food Delivery Platforms helps me eat better.

Effort Expectancy

1. Learning how to use Online Food Delivery Platforms is easy for me.
2. My interaction with Online Food Delivery Platforms is clear and understandable.
3. I find Online Food Delivery Platforms easy to use.
4. It is easy for me to become proficient in using Online Food Delivery Platforms.

Social Influence

1. People who are important to me think that I should use Online Food Delivery Platforms.
2. People who influence my behaviour think that is should use Online Food Delivery Platforms.
3. People whose opinions I value prefer that I use Online Food Delivery Platforms.

Facilitating Conditions

1. I have the resources necessary to use Online Food Delivery Platforms.
2. I have the knowledge necessary to use Online Food Delivery Platforms.
3. Online Food Delivery Platforms are compatible with the technologies that I use to access the internet.
4. I can get help from others when I have difficulties using Online Food Delivery Platforms.

Motivation

1. Using Online Food Delivery Platforms is fun.
2. Using Online Food Delivery Platforms is enjoyable.
3. Using Online Food Delivery Platforms gives me pleasure.

Price Value

1. Online Food Delivery Platforms have reasonably priced offers.
2. Online Food Delivery Platforms have good value for the money.
3. At the current prices, Online Food Delivery Platforms provide good value.

Habit

1. The use of Online Food Delivery Platforms has become a habit for me.
2. I am addicted to the use of Online Food Delivery Platforms.
3. I must use Online Food Delivery Platforms.
4. Using Online Food Delivery Platforms comes natural to me.

Intent and Use

Behavioural Intent

1. I intend to continue using Online Food Delivery Platforms in the future.
2. I will always try to use Online Food Delivery Platforms in my daily life.
3. I plan to continue to use Online Food Delivery Platforms frequently.

Use Behaviour

Indicate for the following Online food delivery Platforms your usage frequency:

- Thuisbezorgd/Lieferando
- Deliveroo
- UberEATS
- Delivery Hero

- Foodora
- Foodpanda
- Other