



Customer Adoption of Online Peer-to-Peer Remittance Solutions in Finland

Abdullah Jarkas

Abdullah Jarkas

Master's thesis

International Business Management

2021

MASTER'S THESIS	
Arcada University of Applied Sciences	
Degree Programme:	International Business Management
Identification number:	
Author:	Abdullah Jarkas
Title:	Customer Adoption of online Peer-to-Peer remittance solutions in Finland
Supervisor (Arcada):	Kaj-Mikael Björk
Commissioned by:	
<p>Abstract:</p> <p>This thesis is a qualitative study to investigate the possible drivers and barriers to adopting the emerging FinTech online Peer-to-Peer remittance solutions among customers in Finland. The main research question in this paper was: What are the possible drivers and barriers to customer adoption of online Peer-to-Peer remittance solutions in Finland? The literature reviewed in this paper explores the importance, size, and trend of the global remittance market and the legislations that are backing those new solutions to emerge, such as Payment Services Directives PSD and PSD2, General Data Protection Regulation GDPR, among others. Followed by information about some of the existing online peer-to-peer remittance service providers and prior research related to the topic.</p> <p>The theoretical framework is based on the Diffusion of Innovations theory by Rogers, E 2003, the Consumer Resistance to Innovations by Ram and Seth 1989, and the Unified Theory of Acceptance and Use of Technology (UTAUT, and UTAUT2) by Venkatesh et al., 2003.</p> <p>A structured questionnaire was conducted via email and online interviews with ten participants who are immigrants living in Finland and send remittances abroad, divided into three categories: Expert, Adopters, and Non-adopters. Thematic analysis was done on the transcript of the participants' answers using Microsoft Excel.</p> <p>The research suggests four major potential drivers and advantages: Fast and time-saving, convenience and ease of use, low fees and better exchange rates, diversity of options; on the other hand, the research suggests four major potential barriers and risks: Security and privacy, reliability and trust, international availability, awareness and knowledge. Suggestions for online peer-to-peer remittance providers, and for future studies are also discussed along with limitations of the study.</p>	
Keywords:	Money transfer, remittance, online money transfer, Peer-to-Peer money transfer, innovation adoption.
Number of pages:	76
Language:	English
Date of acceptance:	29.04.2021

TABLE OF CONTENTS

1. INTRODUCTION	7
1.1 Purpose of the study	8
1.2 Structure of the study	8
2. LITERATURE REVIEW	10
2.1 Global remittance market	10
2.2 Payment Services Directives	12
2.3 Payment Initiation Service Providers	14
2.4 General Data Protection Regulation GDPR	15
2.5 Remittance solutions.....	17
2.5.1 <i>Transferwise</i>	17
2.5.2 <i>WorldRemit</i>	18
2.5.3. <i>Remitly</i>	18
2.5.4 <i>Western Union</i>	18
2.6 Prior Researches	18
3. THEORETICAL FRAMEWORK.....	21
3.1. Diffusion of Innovations.....	21
3.2. Consumer Resistance to Innovations.....	26
3.2.1 <i>Functional Barriers</i>	27
3.2.2 <i>Psychological Barriers</i>	28
3.3. Unified Theory of Acceptance and Use of Technology (UTAUT, UTAUT2) ...	29
4. RESEARCH METHOD	31
4.1 Participants	32
4.2 Data collection.....	33
4.3 Data analysis.....	34
5. RESULTS.....	35
5.1 Drivers	36

5.2 Barriers	40
6. DISCUSSION.....	45
6.1. Drivers	45
6.2. Barriers	47
6.3. Limitations and suggestions for future research	48
6.4 Suggestions for online peer-to-peer remittance providers.....	49
7. CONCLUSION	51
REFERENCES	53
APPENDICES.....	56
Appendix 1: Data collection questions	56
Appendix 2: Research Data	58
Appendix 3: Examples of the Data Analysis	74

LIST OF FIGURES

Figure 1. Remittance Flows to Low- and Middle-Income Countries Would Remain Higher than FDI Flows. (World Bank, 2020).....	10
Figure 2. Global migrant remittance inflows (USD million) 1980-2019. (World bank)	11
Figure 3. How Much Does It Cost to Send 200 USD? (World Bank, 2019)	12
Figure 4. Average costs or remittances by type of provider. (World Bank, 2019)	12
Figure 5. International Payments, User Journey. (openbanking.org.uk)	14
Figure 6. Attributes of Innovation Determining the rate of adoption as in Rogers, E. Diffusion of innovations (Rogers, E 2003)	24
Figure 7. A Model of Five Stages in the Innovation-Decision Process (Rogers, E 2003)	26
Figure 8. Technology Acceptance Model or Unified theory of acceptance and use of technology (UTAUT, UTAUT2). (Venkatesh et al. 2012)	30

LIST OF TABLES

Table 1. Details about Participants in the Data collection.....	33
Table 2. Thematic Data Analysis Results of Participants Answers	35

1. INTRODUCTION

A remittance is “a transfer of money, often by a foreign worker to an individual in their home country” (Al-Assaf et al., 2014). Typically, a personal recurrent money transfer from a worker to family, friends, relatives, or other people abroad in small amounts is considered remittance. There are no strict rules that define a transfer as a remittance. Still, this research is based on The Committee on Payment and Settlement Systems report of the World Bank (CPSS) definition of remittance in their report General principles for international remittance services as “cross border person to person financial payment of relatively low value” (World Bank, 2007)

On the other hand, Maimbao (2004) defined money or value transfer service as “a financial service that accepts cash, checks, other monetary instruments or other stores of value in one location and pays a corresponding sum in cash or other form to a beneficiary in another location by means of a communication, message, transfer or through a clearing network to which the MVT service belongs.”

As presented in the following sections, remittance market, which has been dominated by banks legacy and expensive solutions, is vast and growing due to the increase in immigration and globalization with enormous impact especially on developing countries, and currently the digitalization and work from abroad is becoming an option for workers which will increase the amounts of remittances, thus borderless money transfer is more needed than ever. And yet, the online remittance solutions topic is an under studied topic in literature papers.

Furthermore, as an immigrant myself in Finland, this subject was important for me since it was challenging for me to find a good method to send money back home to support family, and it was always interesting for me to investigate what other immigrants use for remittances and why.

This paper will introduce the potential factors affecting the adoption of new online peer-to-peer remittance solutions, and on the other hand, why customers would reject these solutions or what elements would they perceive as risks. This research is the first of its

kind to study online peer-to-peer remittance solutions adoption in Finland and will be an addition to the literature studies in the field of remittance, as well as providing remittance solutions providers an understanding of the needs and worries of customers in order to optimize the solutions and offer a better customer experience.

1.1 Purpose of the study

The purpose of this study is to get insights into the possible drivers and barriers to customer adoption of new Peer-to-Peer Fintech remittance solutions, mainly service providers such as Transferwise, Worldremit, Remitly, and others. The main research question is:

RQ: What are the possible drivers and barriers to customer adoption of online Peer-to-Peer remittance solutions?

1.2 Structure of the study

The study is structured in a way that explains the need for this research by presenting the importance and size of the remittance market and future trend, the current solutions, the need for new solutions, and what has initiated the emergence of the new online peer-to-peer remittance solutions by reviewing the legislation that opened up the market and lowered the entry barrier to the financial market, such as the Payment Service Directive PDS and the Second Payment Services Directive (PSD2), the General Data Protection Regulation (GDPR) that covers the privacy and safety of customers data, payment initiation service providers, and some examples of such service providers. Followed by prior research about the remittance market in Finland and the adoption of Open Banking in Finland.

Then to understand customer behavior of adoption and resistance of innovations and technology, the research explores theories such as the Diffusion of Innovations theory by Rogers, E (2003), including the Decision Process of Innovation Adoption, the Consumer Resistance to Innovations by Ram and Seth (1989), as well as the Unified

Theory of Acceptance and Use of Technology (UTAUT, UTAUT2) by Venkatesh et al., (2003).

Following, a description of the research method, data collection, and data analyses for this study are explained. The analysis results are presented as drivers and barriers, followed by a discussion part for both drivers and barriers along with research limitations and suggestions for online remittance providers and further research in the field. And finishing the research with the conclusions.

2. LITERATURE REVIEW

2.1 Global remittance market

Remittances are crucial for many developing countries in particular, where the remittance amount represents a significant portion of the country's GDP. Remittance value received around the world has increased significantly over the past two decades and exceeded the official development assistance, and has been more stable than private capital inflow in low to middle-income countries between 1990-2019. It was estimated that remittances will even exceed the foreign direct investments in 2019 according to the World Bank and forecasted to continue.

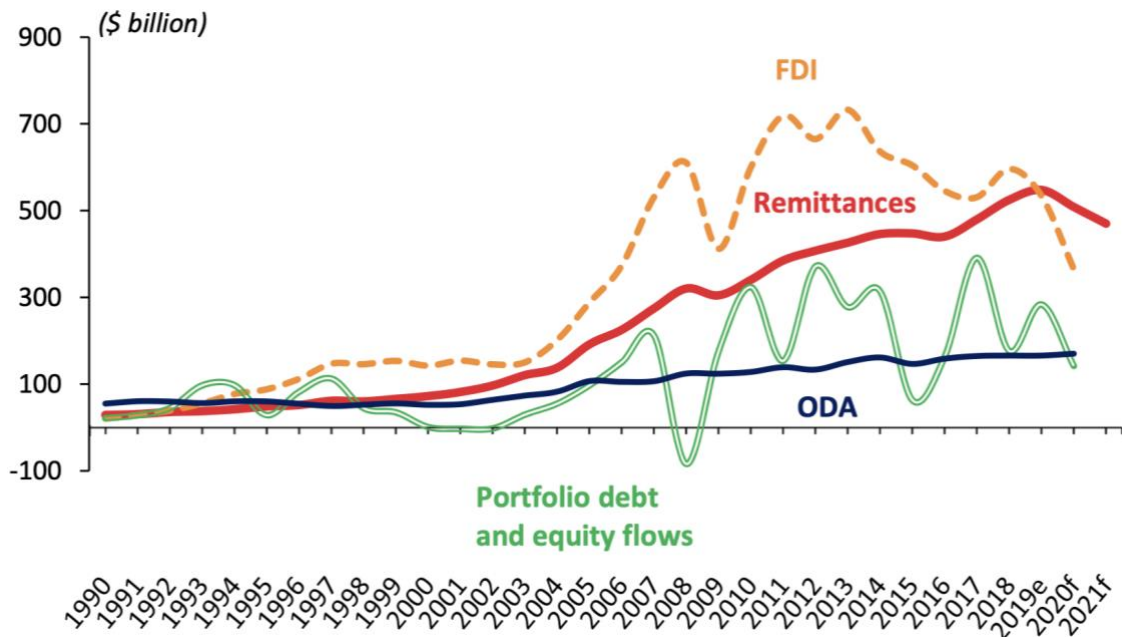


Figure 1. Remittance Flows to Low- and Middle-Income Countries Would Remain Higher than FDI Flows. (World Bank, 2020)

Furthermore, some empirical studies suggested that figures reported by companies and institutions underestimate the global remittance market size since part of the remittances are sent through informal channels such as a person traveling home or some other networks.

Globalization and migration have been on the rise for the last decades, and more people move between countries looking for better work opportunities, stability, or experience while they still have family members in their home countries who they depend on for the costs of living. According to the World Bank, personal remittance value worldwide reached 639 Billion USD in 2018 and 654 Billion USD in 2019, while the cost of remittances is still very high at around 6% to 9%.

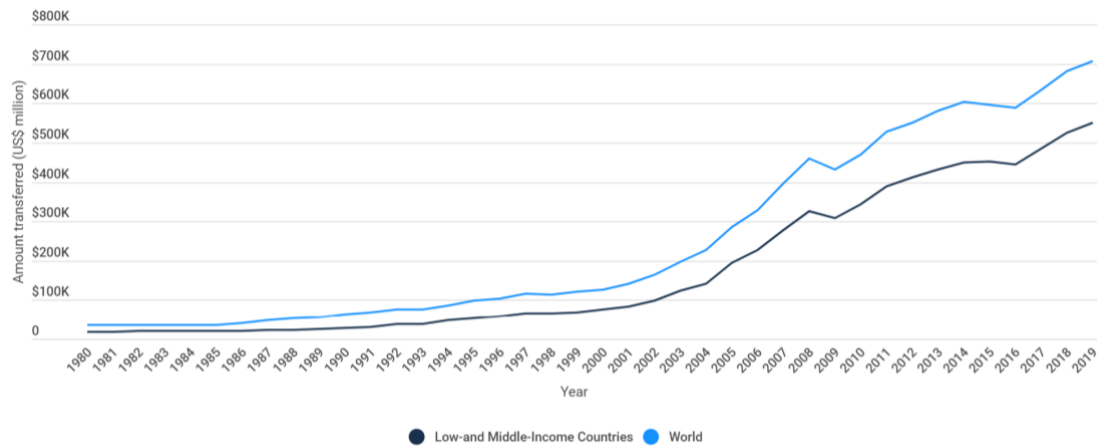
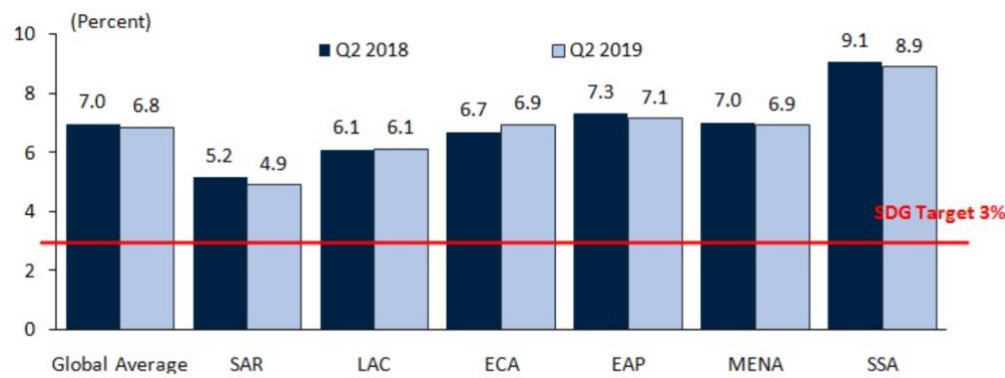


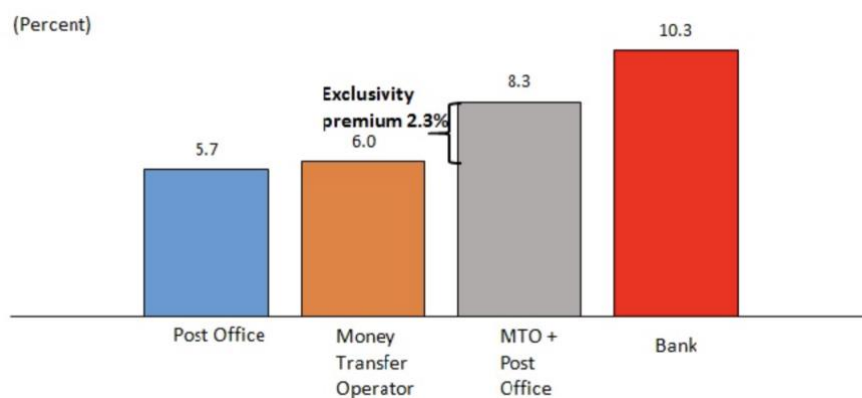
Figure 2. Global migrant remittance inflows (USD million) 1980-2019. (World bank)

Clearly, the remittance market is vast and growing, yet those solutions have been mainly provided by traditional banks with high fees, especially in low income countries such as Middle East and Sub-Saharan Africa, and slow transfer that requires a lot of back-office work and regulations, yet new players have emerged in the last years due to many factors such as new technologies, regulations, and new customer demands, who are competing with traditional banks by offering user-friendly, convenient and cheaper solutions.



Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SAR = South Asia; SSA = Sub-Saharan Africa.

Figure 3. How Much Does It Cost to Send 200 USD? (World Bank, 2019)



MTO = money transfer operator.

Figure 4. Average costs or remittances by type of provider. (World Bank, 2019)

2.2 Payment Services Directives

Technology is disrupting different aspects of our life and transforming many traditional services, but the banking industry has not changed much yet due to the enormous resources retail banks and big financial firms have and the market entry challenges for new players like capital, licenses, or other resources. But regulators have been keen on opening the financial sector to competition and innovation as part of the vision of a cashless European Economic Area by issuing many legislations, directives, and papers, most notably the Payment Services Directive PSD, Directive 2007/64/EC, replaced by Directive (EU) 2015/2366, referred to as PSD2, that opened up the payment services to allow easier market access for more Payment Initiation Services Providers PISP. “These rules seek to ensure that these players can compete on equal terms, leading to greater

efficiency, choice, and transparency of payment services” (The European Parliament and the Council of payment services in the internal market, 2015)

The directives also required the banks to offer access to their data centers to Account Information Services Providers AISP by providing an application programming interface (API) through secure channels. The Directive's purpose was to increase Pan-European competition and participation in the payments industry also from non-banks and harmonizing consumer protection and the rights and obligations for payment providers and users. Such directives made it easier for non-financial institutions and smaller FinTech companies to operate in the financial field and offer payment or information services.

“However, in order to remove legal barriers to market entry, it is necessary to establish a single license for all providers of payment services which are not connected to taking deposits or issuing electronic money” (The European Parliament and the Council of the European Union, 2007)

Directive 2007/64/EC enhanced the payment services market and established an environment for more innovation and security, which made it possible for more companies to enter the market and expanding the market significantly, which contributed to the increase in card payments, mobile payments, mobile transfer, and other forms of new FinTech solutions over the last few years and required a more progressive directive such as PSD2, according to legislators, which widened the scope of the first directive to cover broader legal aspects. (The European Parliament and the Council of payment services in the internal market, 2015)

With such growth in online payments, mobile payments, and other internet-based financial services, legislators were aware that an immense infrastructure, broader options, and more transparency are required without compromising the customers’ safety by requiring TPP a strong customer authentication when customers initiate payments or access account information.

2.3 Payment Initiation Service Providers

Since the issuance of Directive (EU) 2007/64, many new payment services have emerged, such as Payment Initiation Services which are services that act as a bridge between payer and payee to ensure to the payee the payment validation in order for the payee to release the goods, services, or other payment faster and at low costs even if the payer doesn't hold payment cards. Payment initiation service providers PISP are authorized to initiate payments into or out of a customer's account and can initiate a payment from the payer bank account upon account holder request in any currency and to any country. Online peer-to-peer remittance solutions utilizes these services to initiate the payment from the sender bank account in a fast and cheap transaction which lower the fees or the remittance.

According to The Financial Supervisory Authority (2019), a Payment Initiation Services is “a service to initiate a payment order at the request of the payment service user with respect to a payment account held at another payment service provider.”

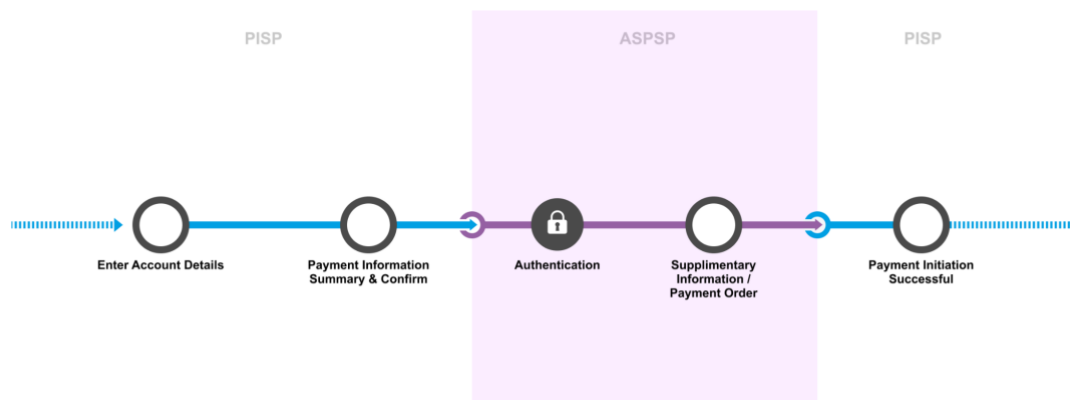


Figure 5. International Payments, User Journey. (openbanking.org.uk)

While Directive (EU) 2007/64 didn't cover these types of services and that those services are not required to comply with the directive, that raised legal issues such as consumer protection, security, and liability which needed Directive (EU) 2015/2366, PSD2, to cover these types of services.

Payment initiation service providers PISP does not hold the payment fund at any stage, and their sole role is to ensure that the payment has been initiated. In case PISP intends to provide payment services in relation to which it holds user funds, it should obtain full authorization for those services. And to ease new entries to the market, the directive did not require PISPs to impose their own funds to cover the payments but rather to hold either professional indemnity insurance or a comparable guarantee.

PSD2 also aimed to support new existing and new service providers, which opened the door for new remittance services. “This directive should aim to ensure continuity in the market, enabling existing and new service providers, regardless of the business model applied by them” and protected small and new companies against giant players such as big banks and financial institutions to guarantee competition, different option for customers, lower costs, and innovation “Member States, the Commission, the European Central Bank (ECB) and the European Supervisory Authority (European Banking Authority) should guarantee fair competition in that market avoiding unjustifiable discrimination against any existing player on the market. Any payment service provider, including the account servicing payment service provider of the payment service user, should be able to offer payment initiation services.” (The European Parliament and the Council of payment services in the internal market, 2015)

2.4 General Data Protection Regulation GDPR

Financial information is highly sensitive information. Thus, In order to encourage customer adoption to third-party service providers and lower the compliance barriers for new players in the financial sector, legislators were aware that privacy and data safety would be a significant factor in this development. Thus, Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) was issued and was applicable as of 25th May 2018 in all member states of the European Union.

“Those developments require a strong and more coherent data protection framework in the Union, backed by strong enforcement, given the importance of creating the trust that will allow the digital economy to develop across the internal market.” (The European Commission)

In alignment with the vision of a cashless European Economic Area and the PSD2 opening the financial market for third-party service providers and smaller players, GDPR's aim was to harmonize data privacy laws in the member states to ensure safe, clear, and direct rules that are easy for customers to know.

“Directive 95/46/EC of the European Parliament and of the Council seeks to harmonize the protection of fundamental rights and freedoms of natural persons in respect of processing activities and to ensure the free flow of personal data between the Member States.” (The European Parliament and the Council of the European Union, 2016)

On the other hand, GDPR served as a way to lower the entry barriers for new players since compliance with complex regulations, especially regulations regarding personal safety and security, requires considerable resources and risk of hefty fines, which small and new service providers cannot afford. So, GDPR made it clear and easy for both customers and new players to make sure that data is safe and avoid any complex or resource exhausting processes.

“In order to ensure a consistent and high level of protection of natural persons and to remove the obstacles to flows of personal data within the Union, the level of protection of the rights and freedoms of natural persons with regard to the processing of such data should be equivalent in all Member States.” (The European Parliament and the Council of the European Union, 2016)

The GDPR states that personal data must be “processed lawfully, fairly and in a transparent manner in relation to the data subject” and that all personal data shall be minimized and purpose limited “collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes.”

“adequate, relevant and limited to what is necessary for relation to the purposes for

which they are processed.” (The European Parliament and the Council of the European Union, 2016)

If the personal data that has been collected is inaccurate or no longer serves the purpose it was collected for then it needs to be removed without any delay “every reasonable step must be taken to ensure that personal data that are inaccurate, having regard to the purposes for which they are processed, are erased or rectified without delay.” Collected personal data should be “processed in a manner that ensures appropriate security of the personal data, including protection against unauthorized or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organizational measures.” (The European Parliament and the Council of the European Union, 2016)

2.5 Remittance solutions

In this part, a short introduction of the most common online remittance solutions that emerged in the last years is presented. There are many other similar solutions. The paper is not implying that the solutions mentioned below are at the top or the best solutions.

2.5.1 Transferwise

Transferwise is an online money transfer service based in London founded in 2011. The vision of the company according to their website is to “make international money transfers cheap, fair, and simple.” In the Transferwise annual report 2019, the company stated that they have 6 million customers from 3 million in 2018, transferring GBP 4 billion per month compared to GBP 2 billion in 2018. The company profit increased by 53% in 2019, reaching GBP 179 million. This growth is mostly the outcome of launching a borderless account in 2017, according to the company, an account allowing customers to hold their money in more than 45 different currencies and giving them multiple local bank account numbers in countries including the UK, Europe, and the US. (Transferwise, 2020)

2.5.2 WorldRemit

According to the company's website, Worldremit offers "a faster and better way to send money online that is easy and convenient to use." The company offers various options such as cash pick-up, bank deposit, mobile money, or airtime top-up for phone subscription. According to the latest number on its website, the company serves 4 million customers using 90 different currencies across 150 countries worldwide. The company market valuation is currently at USD 1.5 Billion.

2.5.3. Remitly

Remitly is an online money transfer company based in the USA. The company revenue was USD 80 Million in 2018 and valued at USD 1.5 Billion in July 2020.

2.5.4 Western Union

Western Union is an American and one of the oldest money transfer companies which started as a telegram service back in the 19th century. Users were able to send and receive money via the Western Union website, and in 2007 the company provided a mobile app service for money transfer. The company revenue was USD 5.6 Billion in 2018 and the company processed about USD 70 billion in money transfer a year ("2018 Annual Report", Western Union). The company offers cash deposits and pick-up or bank account transfers, and according to the company's website, the process takes only minutes and has 525,000 agents in 200 countries and territories.

2.6 Prior Researches

Online peer-to-peer remittance solutions is an under studied topic in general, that might be due the newness of these solutions. This section includes some prior studies that might help understand the status of remittance market in Finland as well as the adoption of similar online financial solutions that emerged in the past years.

A quantitative case study, Remittance Market in Finland: Case Study of Personal Remittance Transmission done by Saikou SS Camara 2016, noted that the personal

remittance amount received to Finland was higher than the amount sent from Finland to other countries in the last decade prior to the research. The data collection was gathered in Greater Helsinki region from one hundred and fifty-six participants from different backgrounds who live in Finland and send money to ‘non-Finnish in developing country’ using a survey questionnaire.

The study suggests that 28% of the sample use Bank transfer as remittance solution, 44% use Money transfer Company, 12% Informal channels (someone traveling home), and 16% ‘through someone I know’.

The paper also suggested that users usually use a combination of remittance solutions depending on many factors at the time, such as the receiving country, which indicates that it was important for the sample to be from different backgrounds. “Some reasons for choice of remittance method could be based on legal, economic or even security grounds.” (Camara, S. 2016)

According to the paper the most important factor affecting the choice of the remittance method is the amount received by the beneficiary which is affected by the fees and exchange rate. Another reason was that the sender does not have to use identifications.

A Qualitative study of Possible Drivers and Barriers to Consumer Adoption of Open Banking Services by Nyström, M 2020, about consumer adoption of Open Banking services which is a broad topic that online peer-to-peer is considered part of, suggested that the major drivers for open Banking adoption were the Type of consumer, Use of several currencies, Easy/quick money transfers, Technically advanced / UX, while Lower prices than traditional banking services was the fourth most mentioned by participants. The findings indicated that “the perceived complexity, relative advantage and trialability are important for consumer adoption of open banking services” (Nyström, M 2020)

On the other hand, the most mentioned barriers by participants for the adoption of Open Banking were Lack of trust, Finnish traditional banks are highly digitalized, Lack of awareness, Lack of knowledge, IT Security / data sharing reliability.

The study used a qualitative method gathering data through semi-structured interviews with eight participants that were divided into adopters, non-adopters, and experts. The interviews then were written in transcripts and analyzed through thematic analysis.

The paper also indicated the limitations for the study such as the small size of sample due to Covid situation and the geographical limitation to Finland.

3. THEORETICAL FRAMEWORK

This section will present some theories about technology and innovation adoption and resistance that has been effective in understanding the human behavior towards new technologies, such as online Peer-to-peer remittances solutions, and what can affect users adoption or rejection.

3.1. Diffusion of Innovations

One of the most influential theories to understand how new ideas spread and change in customer behavior and to understand adoption is the Diffusion of Innovations by Everett M. Rogers. “One reason why there is so much interest in the diffusion of innovations is because getting a new idea adopted, even when it has obvious advantages, is often very difficult.” (Rogers, 2003)

Rogers considers diffusion as a social change, a process that alternates the structure and function of a social system, and defines Diffusion as “the process by which an innovation is communicated through certain channels over time among the members of a social system. It is this newness of the idea in the message content of the communication that gives diffusion its special character. The newness means that some degree of uncertainty is involved.” (Rogers, 2003)

Innovations are new ideas that need to be communicated through specific channels in order to be adopted, but according to Rogers, all innovations and new ideas have the element of uncertainty inherently and to overcome uncertainty, sharing information becomes necessary. “In fact, information represents one of the main means of reducing uncertainty” (Rogers and Kincaid, 1981, p.64)

From the definition of Diffusion above, the theory sets four main elements that affect the adoption rate, the innovation, the communication channels, time, and the social system.

As for the first element, Innovation, the key aspect is the newness of the idea, practice, or object as perceived by the individual “An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption.” and does not matter how long time has passed on the innovation, what matters is that it is new in the eyes of the individual perceiving it.

The newness element is not only not knowing about the innovation according to the theory but rather also not developing a decision or an attitude towards that innovation. If an individual knows about an innovation without taking a decision whether with or against adopting this innovation, it is still perceived as new to that individual. “The "newness" aspect of an innovation may be expressed in terms of knowledge, persuasion, or a decision to adopt.” (Rogers, 2003)

There are five characteristics of innovations according to the theory:

1- Relative advantage: the innovation is perceived better than the current idea or solution, whether it is measured in economic, social prestige, convenience, or other factors. In the case of Peer-to-peer remittance, low fees and better exchange rates could be one advantage.

2- Compatibility: to what degree the innovation is perceived as consistent with the social values, needs, experiences. An innovation that is not in alignment with the customers’ needs for innovation or previous ideas would not be adopted as rapidly as an innovation that meets the needs, for example.

3- Complexity: how difficult to understand and use the innovation is perceived by the individual, naturally the easier to understand, the more rapid the adoption.

4- Trialability: how possible is it to experiment with the innovation on a limited basis?

Divisible innovations will generally be adopted faster than nondivisible ones.

Innovations that can be easily tried out with low risks are generally adopted more rapidly than innovations that are not possible to experiment with. It is easy to try out the Peer-to-Peer remittance solutions since customers could try to send small amounts of money and experiment with the solutions.

5- Observability: are the results and outcomes of the innovation visible to others, or is it hard to notice the benefits, “The easier it is for individuals to see the results of an innovation, the more likely they are to adopt.” Regarding Peer-to-Peer remittance solutions, it is easy to spot the benefits. The economic benefits are visible almost immediately, and the convenience that users can send money on the go via mobile phone as well. While the expected outcome is also easily determined whether the money arrived or not to the receiver within the cost and time limits.

What makes an innovation a technological innovation? The theory defined technology as a design of instrumental action, in general, a new idea, object, or solution that reduces the uncertainty in the cause-effect relationships involved in achieving the desired outcome.

The second element in the diffusion of innovations theory is Communication channels, which was defined in the theory as the process of creating or sharing information between participants in order to reach mutual understanding. And diffusion is a particular type of communication that involves new ideas. As mentioned by Rogers, communication channel is a way that the messages go through from the first individual with the knowledge and other individuals who do not have the knowledge about the innovation. For example, mass media channels like TV, radio, and others, which are often the most efficient means to inform an audience about an innovation. In comparison, interpersonal channels can be more effective in getting an individual to adopt an innovation, especially if the interpersonal channel links are near-peers.

The third element in the diffusion of innovations theory is Time. According to Rogers, time is an essential factor of any communication process, and including time in the theory is one of its strengths. The time dimension is involved in diffusion “(1) in the innovation-decision process by which an individual passes from first knowledge of the innovation through its adoption or rejection, (2) in the innovativeness of an individual or other unit of adoption, and (3) in an innovation's rate of adoption in a system, usually measured as the number of members of the system that adopt the innovation in a given time period.” (Rogers, 2003)

The fourth element is the social system. The theory defined the social system as “a set of interrelated units that are engaged in joint problem solving to accomplish a common goal” (Rogers 2003). Since diffusion occurs within a social system, the social structure of the social system affects diffusion in many ways. According to Rogers, some of the topics to be considered that affect the diffusion of innovations are norms, the role of opinion leaders and change agents, type of the innovation decisions, and the consequences of innovation (Desirable or undesirable consequences, Direct or indirect consequences, Anticipated versus unanticipated consequences.)

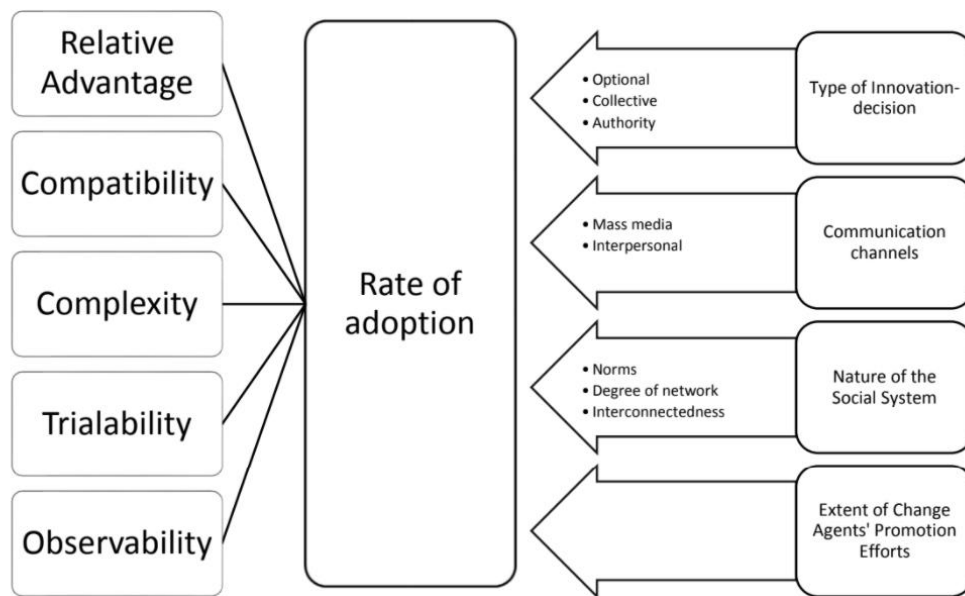


Figure 6. Attributes of Innovation Determining the rate of adoption as in Rogers, E. Diffusion of innovations (Rogers, E 2003)

Innovation decision process

The diffusion of innovations theory recognizes that decisions about innovations are not instantaneous acts but rather a process that occurs over time. The theory defined the innovation-decision process as “the process through which an individual (or another decision-making unit) passes from first knowledge of an innovation to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision.” (Rogers, 2003)

This process consists of a series of 5 stages of actions and choices that lead the decision-maker either to adopt into ongoing practice or to reject the new idea, mainly dealing with the inherent uncertainty of innovations. These five stages are:

- 1- Knowledge: is the first stage in the innovation decision process, when the individual or other decision-making unit is exposed to the innovation's existence and gaining some understanding of the function of the innovation. A debate exists whether the exposure occurs by accident through communication channels or through need and active seeking for knowledge.
- 2- Persuasion: in this stage, the individual is able to form a favorable or unfavorable attitude towards the innovation, and since one cannot make a decision about an unknown subject, this stage has to occur after gaining knowledge. The innovation attributes discussed earlier are very important at this stage to determine the behavior towards the innovation.
- 3- Decision: the third stage happens when the individual engages in activities that lead to either to adopt the innovation and make full use of it or to reject the innovation, which has two types (active rejection after considering the adoption or even trial, passive rejection as never considering the adoption). Most individuals tend to try out the innovation to deal with the inherent uncertainty, and in other cases, a peer trial like themselves can substitute.
- 4- Implementation: This stage is reached when the individual starts using the innovation. All the former stages are strictly mental exercises, while implementation requires a change in behavior. In general, this stage follows the decision stage directly, and some degree of uncertainty about the outcome of the implementation still exists. This stage is where the decision process ends in most cases, but for others, a fifth stage may occur.
- 5- Confirmation: The individual or other decision-making unit at this stage seeks reinforcement for the innovation decision already made, but he or she may reverse this decision if exposed to conflicting messages about the innovation. The confirmation stage continues after the decision to adopt or reject for an indefinite period in time.

The innovation-decision process has two possible outcomes, either adoption, which is making full use of the innovation, or rejection of the innovation. The decision might not

be permanent, and it is possible to be reversed after a while. For example, in a situation where a decision has been made to adopt the innovation, but then later the decision is reversed or Discontinuance. Or later adoption when the decision to adopt a formerly rejected innovation is made. These changes occur during the confirmation stage of the innovation-decision process.

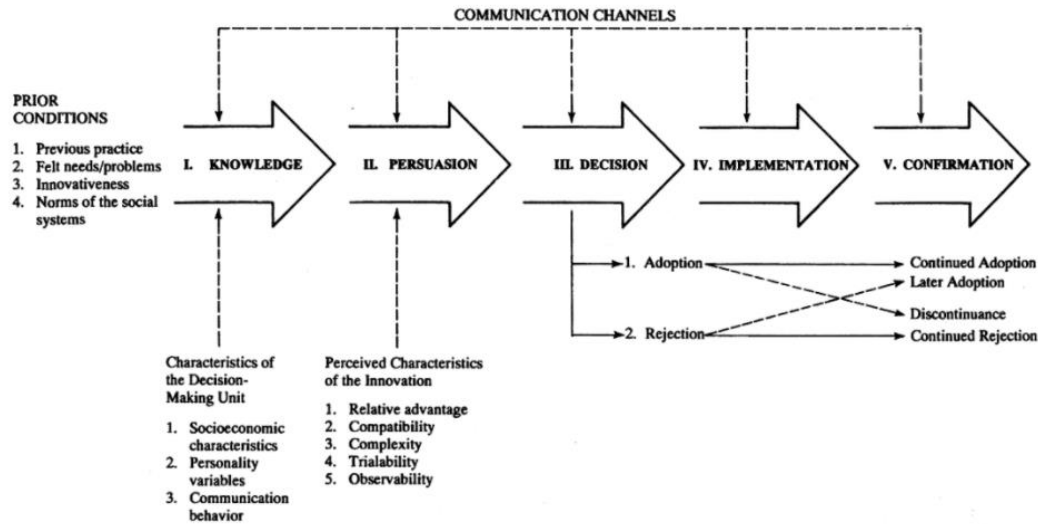


Figure 7. A Model of Five Stages in the Innovation-Decision Process (Rogers, E 2003)

3.2. Consumer Resistance to Innovations

A study by Ram and Seth (1989) aimed to explain why consumers would reject or resist a necessary and desirable innovation, as well as identifying the significant barriers that create this resistance. The authors presented two main reasons for innovation adoption resistance. First, fear of change, the innovation may create a significant shift in consumers' everyday life and routines. Second, conflict with consumers' prior belief structure. For example, users might believe that banks are much safer than other remittance solutions.

The study also presented some characteristics of innovation resistance:

First, the timing of adoption of innovation is affected by innovation resistance, while adopters are classified into categories: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards. Each of these categories has different levels of resistance to innovation. For example, innovators exhibit no resistance to innovation, while laggards have high resistance levels. (Ram and Seth, 1989)

Second, innovation resistance can also vary in degree. The study suggested three behaviors: 1) consumers may feel disinclined to adopt the innovation (passive resistance), 2) consider the innovation too risky, 3) consider the innovation unsuitable and launch an attack against it (active resistance). (Ram and Seth, 1989)

Third, innovation resistance exists across product classes due to the two main causes of resistance, the degree of change and the conflict with consumer beliefs.

The study grouped the adoption barriers that consumers face into two main categories: (1) functional barriers and (2) psychological barriers. The functional barriers relate to three areas: patterns for product usage, the value of the product, and risks associated with the use of the product. While the psychological barriers result from two areas: consumer traditions and norms, and the perceived product image. (Ram and Seth, 1989)

3.2.1 Functional Barriers

The theory assumes that the most common reason for customer or user resistance to the innovation is the usage barrier, since the innovation is new in essence, that requires the customer or user to change their existing routines when the innovation is not compatible with their workflow, practices, or habits. Due to that, innovations, in this case, would require more extended process development until they acquire the customer or user acceptance. (Ram and Seth, 1989)

Value barrier is the second functional barrier, according to theory. Performance-to-price should be big enough to give incentive to new customers and users to accept the innovation over the existing substitutes. (Ram and Seth, 1989)

Finally, the last factor is the risk barrier. Ram and Seth also pointed out that innovations represent uncertainty, as Rogger also mentioned in Diffusion of innovation. According to Ram and Seth, customers aware of the risks of unanticipated side effects of the innovation would postpone the adoption until they learn more about it. The theory presented four main types of inherent risk in innovations:

1. Physical risks: as defined, “Harm to person or property that may be inherent in the innovation.” For example, users might be afraid of losing their money when using a new remittance solution.

2. Economic risks: Customers or users will perceive higher economic risks with high-cost innovations, for example, technology devices such as computers or mobile phones, where some customers might postpone the purchase to a new and better performance-to-price model.

3. Functional risks: some customers might worry about the innovation functionality and ability to deliver the expected outcomes are not tested sufficiently and that it might not function as expected or be unreliable. This risk is minimized in remittance solutions due to tryout possibilities since the solutions are mostly free and possible to send small amounts of money.

4. Social risks: customers or users might resist an innovation out of fear of social ostracism or peer ridicule. For example, buying generic brand foods is mostly not acceptable by many. This risk could be minor in remittance solutions since it is a personal process in most cases, and the receiver doesn’t know what solution has been used to send the remittance.

3.2.2 Psychological Barriers

Ram and Seth presented two categories to the psychological barriers. Firstly, the tradition barrier, where customers or users will resist an innovation when it requires a shift from traditions and creates a cultural change. The bigger the shift or change, the higher the resistance.

Secondly, the image barrier, which is a perceptual problem that rises from stereotypes, where each product or service is associated with a certain identity (the product class, the industry, country of origin, etc.) if any of those associations are unfavorable or perceived negatively, the innovation will meet resistance. (Ram & Seth, 1989)

It is worthy to note that Ram and Seth also presented strategies to break these resistance barriers in order to increase the adoption rate or pace.

3.3. Unified Theory of Acceptance and Use of Technology (UTAUT, UTAUT2)

Another well-known theory about understanding the behavior and user acceptance of technology is the unified theory of acceptance and use of technology (UTAUT) by Venkatesh et al. The UTAUT aim is to explain user intentions to use an information system and subsequent usage behavior and is distilled through a review and consolidation of eight prominent theories or models that explain the behavior toward using information systems.

The model proposes four constructs (Venkatesh et al., 2003):

- 1) Performance expectancy: what benefits will the use of a technology provide to users in performing certain activities.
- 2) Effort expectancy: How much effort will it take to use a technology or how easy or hard to use a technology.
- 3) Social influence: how is the use of a technology perceived by society (family, friends, or others in the social circle.)
- 4) Facilitating conditions: refer to users' perceptions of the resources and support available to perform a behavior. (Venkatesh et al. 2003)

According to UTAUT, performance expectancy, effort expectancy, and social influence influence behavioral intention to use a technology, while behavioral intention and facilitating conditions determine the technology use.

Since UTAUT provides an excellent and detailed model for acceptance and use of technology in an organizational context, Venkatesh et al. extended the theory to the consumer adoption context by developing UTAUT2 in 2012, where they added three more factors that were important to understand the consumer behavior:

- 5) hedonic motivation: how much fun or pleasure does the use of a technology provide. According to the theory, this factor plays an essential role in technology use.
- 6) Price value: a critical difference between organizational and consumer context, and also in UTAT2, since the consumer has to bear the costs of using a technology, and that plays a significant impact on consumer behavior.
- 7) Experience and habit: it is easier for consumers to accept a technology if they had prior experience of the technology or similar technology, while habit is an essential factor in influencing technology use.

The UTAUT 2 model below (Fig. 8) now has seven constructs. The light lines represent the original UTAUT factors and thicker lines represents UTAUT2. The lines show the effect of different factors on behavioral intention and use behavior.

An important change to UTAUT to fit in the consumer context is adding moderating variables that the theory suggested will affect the added conditions. The moderating variables are age, gender, and experience, dropping voluntariness from the previous UTAUT. (Venkatesh V, Thong J and Xu X., 2012)

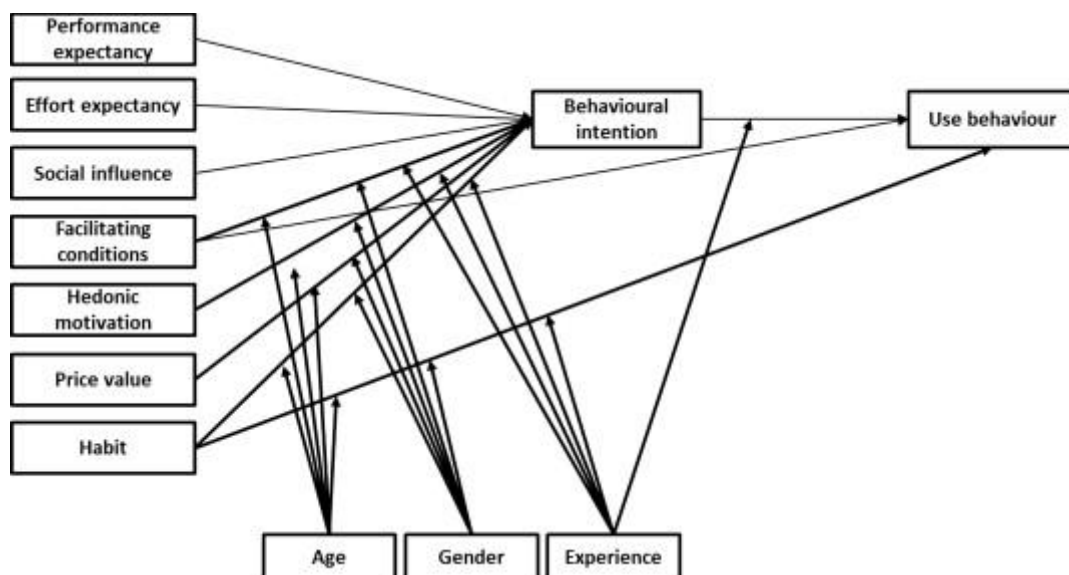


Figure 8. Technology Acceptance Model or Unified theory of acceptance and use of technology (UTAUT, UTAUT2). (Venkatesh et al. 2012)

4. RESEARCH METHOD

In this research, a questionnaire with twelve open questions have been conducted with ten respondents through email and online interview due to the COVID-19 situation, full interviews scripts can be found in the appendix, the participants were asked about the method of sending remittances they use, their experiences, the advantages and disadvantages of different solutions, and what attracts users to online remittances solutions or make them reject the adoption of these solutions. As well as the main perceived risks and what needs to be developed or offered in the future, (the questionnaire is available in Appendix 1.)

This chapter introduces the research method used in this study. The execution of this research is aiming to answer the main research questions as defined in the introduction:

RQ: What are the possible drivers and barriers to customer adoption of online Peer-to-Peer remittance solutions?

This paper also aims to answer two additional questions:

What are the advantages and disadvantages of using online peer-to-peer remittance solutions over traditional remittance methods such as bank transfer?

What are the perceived risks in using online peer-to-peer remittance solutions over traditional remittance methods?

This research uses a qualitative research method which found suitable to describe the customer behavior of adopting or rejecting online peer-to-peer remittance solutions. “Qualitative researchers are concerned in their research with attempting to accurately describe, decode, and interpret the meanings of phenomena occurring in their normal social contexts” (Fryer, 1991). The data is not presented in a numerical form but rather in textual form to dive in-depth into the participants' opinions. “Qualitative research is empirical research where data is not in numeric form. In social sciences, there has been debate on the merits of both of these research approaches. Qualitative research focuses

on exploring instances more in-depth and in smaller numbers.” (Blaxter, Hughes & Tight (2006)

Also, the qualitative method was chosen since it provides “a holistic view of the phenomena under investigation” (Bogdan & Taylor, 1975; Patton, 1980) as well as that it gives the “Ability to interact with the research subjects in their own language and on their own terms.” (Kirk & Miller, 1986)

4.1 Participants

The interview participants are professionals working in random fields and living in Finland between the age of 25 to 40 years old and send remittances abroad. Ten individuals have participated in this study from different cultural backgrounds or home countries to ensure more comprehensive representation. The participants who took part in the study were chosen from the author’s social environment, and the data collection was conducted in English.

The participants can be divided into three groups, one group of individuals who have adopted and are using an online peer-to-peer remittance solution, the second group is non-adopters who have knowledge or have tried online peer-to-peer solutions but have not adopted it and are using other methods to send remittances instead, or never used an online peer-to-peer remittance solution, and the last group is expert who has worked in peer-to-peer remittance company. Adopters and nonadopters groups were necessary to understand both drivers and barriers while expert group was beneficial to get inside information about possible drivers or advantages and barriers or risks that customers might not have visibility of.

Below are some details about the participants' demography and the countries they send remittance to usually:

Table 1. Details about Participants in the Data collection

Participant	Age	Gender	Receiving country	Profession
Adopter 1	40	Male	Morocco	Hospitality
Adopter 2	31	Male	UK, Jordan	Media
Adopter 3	34	Male	Syria, Sweden	Finance
Adopter 4	32	Male	Iraq, Syria, Turkey	Design
Adopter 5	37	Male	Russia	Business
Adopter 6	28	Female	Turkey	Media
Non-adopter 1	39	Male	UK, Pakistan	Medical
Non-adopter 2	42	Male	Palestine, Sweden	Social Services
Non-adopter 3	32	Female	Syria, Lebanon	Finance
Expert	35	Female	-	Marketing

4.2 Data collection

The data collection was conducted by a questionnaire containing twelve open-ended questions via email and online interviews with ten participants from different backgrounds who live and work in Finland. The questionnaire answers were received between the 1st of February and the 4th of April 2021. The questionnaire was conducted in English, all of the respondents speak English fluently.

The questionnaire was designed based on the literature and theoretical framework of the research. Some of the questions were asked to know which remittance solutions the respondent uses in order to separate the sample into adopters of online peer-to-peer solutions and non-adopters. At the same time, other questions are based on different parts of the literature and theories presented in the research. For example, questions 4 and 5 were asked to get information about the habit and adaptivity of the respondents, and question 6 is based on Diffusion of innovation, question 7 is about privacy and data protection related to the GDPR, question 8 is to understand the drivers of adoption

while question 9 is to understand the barriers. Furthermore, question 10 was asked to measure the perceived risks, and question 11 is based on UTAUT2 theory.

The last question was an open question that the respondents can write any other ideas or opinion to get more in-depth information, and any additional unique information and experience of each participant and give a chance to explain the perspective of each participant aside from the theoretical framework of the research.

“It is important that the interviewee understands the topics that are being discussed in the interview” (Bryman & Bell, 2011) thus a short introduction text was provided before the questions to make sure the respondents understood the topic of the research, one question about the technicality and back-office information about remittances was asked to measure the importance of the remittance process for customers.

4.3 Data analysis

Questions that were sent via email due to the COVID-19 situation to participants included a short introduction to make sure that the participants understand the research aim, and the same introduction was mentioned to the participants in the online interviews. Although emails might not provide in-depth answers as much as interviews yet it eliminates the influence of the interviewer on the participants' responses and gives the lead to the interviewees.

The answers then were analyzed using the qualitative thematic analysis method through multi-step approach: familiarizing with the data by reading the answers multiple times without analyzes to understand the content, then defining themes based on literature review and the theoretical part of the research as well as the frequency of the opinions and words used by participants, highlighting the different answers relating to different themes, and finally reporting the results.

5. RESULTS

The answers for the thesis questionnaire were analyzed using Microsoft Excel (an example of the thematic analysis can be found in Appendix 3) by defining themes that are both based on the literature and theoretical framework as well as in the responses of the participants. The participants have answered autonomously from their own experience either from working in the field of online peer-to-peer remittance, from their usage of the online peer-to-peer remittance solutions, or their perspective as non-adopters who have not used those solutions but have been using other types such as traditional bank transfer or informal channels.

In this chapter, the findings after the analysis of the participants' answers is presented (The full transcripts of the answers can be found in Appendix 2). In the table below, possible driver and barrier defined by the type of participant can be found, followed by evidence from the answers text as a citation to validate the findings.

Table 2. Thematic Data Analysis Results of Participants Answers

Possible Drivers/Barriers	Theme	Respondents type
Drivers/Advantages	Fast, time saving	N1, A1, A2, A3, E1, A4, A5, A6
	Convenient, easy to use	N1, N2, A1, A2, A4, A5, A6
	Diversity of solutions and sending options	E1, A1, A2, A3, N3
	Transparent, traceable	A1, E1, A6, N3
	Lower fees, exchange rates	N1, N2, A2, A3, A4, E1, A6
	International availability	A1, A4, N1
Barrier/Risks	Reliable and trusted	N1, N2, A1, A3, E1, A5, A6, N3
	Security and privacy	N1, N2, A1, A2, A3, A4, E1, A5, A6

	Awareness and knowledge	N1, N2, E1
	Lower fees, exchange rates	A1, A4, A5
	International availability	N1, N2, A2, A3, A5, N3

5.1 Drivers

The first possible primary driver mentioned in most of the participants' answers was that online peer-to-peer remittance solutions are **‘fast and time saving’** some of the narratives from the participants answers regarding this theme are:

”online peer-to-peer remittance solutions help in cases of urgency, and their spread in remote areas is also convenient.” (Adopter 1)

”I think it's really effective and it's really helpful and it saves a lot of time and yeah I think it's her it's a great solution for transferring money” (Adopter 2)

”(online peer-to-peer remittance solution) is also faster because they can get the money within an hour” (Adopter 4)

”I think online remittance solutions are a pretty helpful service for fast transfers. With the developed technologies payments, and transfers became faster and easier.” (Adopter 5)

”I think like right now like 2021 the option like sending money abroad being really easy and for example I use Transferwise and I like this option because it's very fast, like I send money to Turkey and it ships in 15 minutes and I need like just the IBAN and that's enough. So, in that sense I think time wise it's very efficient and takes like A few minutes so it's cost efficient and also saves time so that's why I enjoy that solutions.” (Adopter 6)

The second possible primary driver that was mentioned by most of the participants is **‘convenience and ease of use’**. Seven of the participants mentioned this aspect positively in their answers. Some of the participants answer when they are asked ‘What do you think are the main reasons users would choose online peer-to-peer remittance solutions?’ regarding ‘convenience and ease of use’:

"I think because they might find these solutions efficient, fast and easy." (Adopter 2)

"I think that people don't much want to input banking information, or wait for a long time. Basically, for nowadays online remittance system, we need only the name of the receiver person, and that is enough." (Adopter 5)

"I remember I used to send or get money through the bank transfer. I mean you send through bank and then you need to have a lot of information like IBAN and SWIFT even to make the application or fill the form takes a lot of time. sometimes I do wright wrong and the money doesn't even arrive. Yeah that was before and now I use Transferwise, I don't use anything else anymore." (Adopter 6)

Other narratives about the convenience and ease of use were also mentioned in other questions by the participants:

"the receiver don't have to have a bank account for some services like western union but if I use my bank transfer the receiver must have a bank account." (Adopter 4)

"if we compare the remittance by online banks, then we can say, here we have an advantage about timing, easiness, and comfort of the service. Sometimes we need very quickly transfer money abroad very quickly. In this case, we have online services have a huge advantage." (Adopter 5)

"The ease of use and accessibility at any time of the day. Cutting out the middle man saves time, effort and money." (Non-adopter 1)

The third primary possible driver was the economic aspect, **'lower fees, exchange rate'** A majority of seven participants mentioned that online peer-to-peer services offer lower fees or exchange rates compared to other methods such as traditional bank transfers. Some of the mentions are presented below:

"bank transfer if you're sending money and you want it to arrive in different currency the exchange rate is way higher in the banks than for example Transferwise or Western Union plus it takes way longer time to arrive." (Adopter 2)

" Banks work for Europe and certain countries but is expensive and you have no idea when the beneficiary will receive the funds. Both Transferwise and Azimo work really well, transparently, fast and offer guaranteed currency rates. " (Expert 1)

"I use Transferwise for available countries, because of low cost, speed, and privacy. I use bank transfer inside Europe for euro currency when it is free.....For me, it was clearly the low cost, better exchange rate and more privacy." (Adopter 3)

" if you send from a bank for example I use Handelsbanken it takes like three days or two days as far as I know versus you sending Transfersie it's like 15 minutes and also sending through banks they cut more money. " (Adopter 6)

Another possible driver was the **'Diversity of solutions and sending options'** that the customers can choose from, especially in different situations or when sending remittances to different countries. Diversity in the remittance market encourages competition to offer better solutions and reduce the concentration and domination of banks in the remittance market. While online peer-to-peer remittance solutions offer wider range of sending and pickup options such as cash deposit and cash pickup, bank transfer, or even cash delivery to the receiver in some solutions. Some of the narratives regarding this theme were:

"Really good that new solutions come up and in many ways these have forced banks to offer better services as well. The increasing competition does not only force banks to reinvent their offering but also offer more options to consumers using those services which in the end is the main benefit of the field's development. " (Expert 1)

"I think that peer-to-peer remittance solutions are a great innovation and they fill a gap in money transfer services. It is always great to have options and some competition among service providers. there should be different services because none of them works everywhere, all the time." (Adopter 3)

"The more sending options (like from application, card to card, to mobile), and receiving options (like door to door cash, quick cash pick-up, bank) offered ,the more alluring it is." (Adopter 1)

"I think it is good to have different services to compete and create better solutions to customers" (Non-adopter 3)

A related potential driver was mentioned by some participants depending on the receiving country or situation **‘international availability.’**

"online peer-to-peer remittance solutions help in cases of urgency, and their spread in remote areas is also convenient." (Adopter 1)

"I use Western Union mobile app because it is very convenient and available in many countries like my home country Syria. It is faster and no need for a bank account and available in many places and I can send from my mobile." (Adopter 4)

"Also in some situations, it is the only option." (Non-adopter 1)

Four of the participants also brought up that online peer-to-peer remittance solutions are **‘transparent and traceable’** especially compared to bank transfer or informal methods. Some of the narratives are:

"They are faster, cheaper, transparent as you know when and how much the receiver will get and they are also trackable." (Expert 1)

"Bank transfers were disappointing as there was no clarity on the real amount to be received, also it took much longer than expected, the fee also was a fixed price but surprising extra fees at the recipient bank were disappointing. This might be a country-related issue. Western Union transfers were more convenient and the follow up efficient, especially online." (Adopter 1)

"that's why I can trust these apps because they also notify you ok it's on the way and will arrive in like 15 minutes. and from my background in Turkey we never trust the banks because there always hidden costs and fees comes up and it is not transparent. for example, if you are not very aware of the economy or worked in related field you will end up paying more than you are supposed to, but I like feel that transferwise is very transparent you are notified and you know I always check with my family like in 15 minutes and ask did you get it and they say yes so it's very trust worthy" (Adopter 6)

" as I said I checked Transferwise once and just like checked the mobile app to try and send money but as I said it was not available in my home country but I remember it was easy to use at least for me and very transparent actually compared to banks, for example one time I needed to send one time payment to Uk and I tried to do it in my mobile bank app but it was very unclear how much is the cost or the exchange rate or how much time it will take, so when I tried Transferwise I remeber you can see the costs and the exchange rate well maybe not very accurate but at least you get an idea how much it will cost approximalty, I even called the bank to ask about sending money to UK and I dont remember that I got a good answer so you see it is already easier. also I think it mentioned in Transferwise how long it will take to arrive or so."
(Non-adopter 3)

Most of the participants have been using different remittance solutions for many years, and most of the adopters have been using online peer-to-peer remittance solutions for more than a year. Adopter 2 has been using different solutions but started using online peer-to-peer Trasnferwise once they knew about it:

"I have been using these solutions for about 5-6 years, I discovered Transferwise about a year ago and was using mostly WesternUnion before that, also sometimes bank transfer when I send my family to UK because I didn't know about those solutions but now I use Transferwise more."
(Adopter 2)

Most of the participants were tech-savvy, enthusiastic, or very interested in new online solutions and technologies. Nine out of the ten participants described themselves as either adaptive, very adaptive, or prefer online solutions, while only one non-adopter identified themselves as average adaptive when asked 'How adaptive are you towards new innovations? Do you use other online or mobile financial services?' the answer was:

"I use some online financial services." (Non-adopter 2)

5.2 Barriers

The first potential barrier that was mentioned by most of the participants is '**Security and Privacy**', which is perceived as a risk by nine of the participants. some of the concerns in the participants scripts are below:

"I think reliability, security, customer support options, and convenience are key challenges for these businesses." (Adopter 1)

"Security can be an issue for some." (Expert 1)

"Fraud is the major concern." (Non-adopter 1)

"maybe a risk of online hacking or scam for these companies might be a risk." (Adopter 2)

"privacy concerns. How do I know that this app is not collecting and sharing my data, or even accessing my banking data (like the case against Trustly)" (Adopter 3)

"Security risk. For example: hacking my app or account or stealing my password and send money from my account." (Non-adopter 2)

"some services ask about the money source and the relation with the receiver and so many questions and I think this could be too much sometimes" (Adopter 4)

When asked about the factors that could make the participants' remittance experience better, a non-adopter showed concerns with privacy and security

"A solution that I can trust more and feel more secure." (Non-adopter 2)

The second potential barrier that was mentioned by most of the participants was **'reliability and trust'**. In case a remittance went wrong or did not arrive, how reliable the solution is that the money will not be lost or how easy and fast the service provider can solve any issue that might occur while using the service. Some of the answers relating to this theme were:

"I think reliability, security, customer support options, and convenience are key challenges for these businesses 1) securing a safe transfer. 2) establishing connection with users through enhancing reliability and accessibility to customer support throughout the operation. risks include: Own payment information divulged to a third party, remittances not received and not returned" (Adopter 1)

"Customer service can sometimes be a challenge, to get a hold of someone to support you is not always easy as these services are heavily automated. When they work, they work like a dream but if things go wrong, it may not be that easy to get a hold of anyone. Bad experiences may push you to not continue with the service" (Expert 1)

"I think sometimes it's still more trusted for things to go through banks." (Adopter 2)

"I think there could be trust issues to the remittance company. Normally, people ask around, and if there is one good example of sending money abroad, then they use that same service. Regarding other risks, can't say much" (Adopter 5)

"Fraud is the major concern. Also issues with the services crashing/being unavailable for technical issues. Occasionally, access due to passwords/verification can be a challenge." (Non-adopter 1)

"These solutions are not as trusted as banks. People would ask themselves, how safe is it to send money over some app I just downloaded? Maybe people would feel better if they have 10000 EUR in their bank account rather than their Transferwise account." (Adopter 3)

"I tried one remittance application, and the money didn't arrive." (Non-adopter 2)

"when I'm talking to my friends in Finland about that they ask is it reliable because we have this common sense that banks are reliable, or like they ask what if my information are stolen you know or hacking, or what. if they take my money away, so I think all of these things are scary for people." (Adopter 6)

Another potential barrier was mentioned by many participants was **'International availability'**, the availability of these solutions to deliver money to the receiver country. Some of the answers regarding this theme were:

"I use Transferwise for available countries..for the money I send to relatives in the middle east, I use travelling persons if available for low cost, or Western Union because there is no other solution. For me, the only barrier is that Transferwise does not cover enough countries." (Adopter 3)

"Security is a major concern. Also, the accessibility/widespread use of the service. Cost. establishing a global network." (Non-adopter 1)

When asked about the disadvantages of online peer-to-peer remittance solutions:

"Not available in many places. For example, they are not available in my home country." (Non-adopter 2)

"I think there are still a lot of countries that I cannot send money to" (Adopter 2)

"I send with someone traveling to my home country which is easier in my case but of ofcourse sometimes risky. I heard about these online new companies and I checked Transferwise mobile app but didnt send money because they are not available in my home country," (Non-adopter 3)

Few participants also highlighted a potential barrier regarding **'awareness and knowledge'** such as the following scripts from the participants' answers:

"I don't have much information about these apps, I have used it once and it didn't work..... There are so many different solutions and mobile applications and there are not much information available about them so it's hard to know which is the best to use." (Non-adopter 2)

"(a major concern) populations that are non-tech friendly, e.g. the elderly, certain countries of the world.)" (Non-adopter 1)

"Security can be an issue for some. Also, if you are not used to using self-service mobile/online solutions there is a learning curve which can take some time depending on the user's skill level." (Expert 1)

Although they are adopters, some of the participants mentioned that they would like to use cheaper services or lower fees and better exchange rates. Since remittances are small amounts of recurrent transfers, this topic becomes critical, especially for receiving countries with high inflation or lower wages compared to the sender country (Finland in this research).

"In Finland.... I find transaction fees are pretty high, that is because of low competition and the absence of options." (Adopter 5)

"Barriers for adoption are related to reliability, conversion rates, and fees." (Adopter 1)

When asked about what could make your remittance experience better:

"maybe if they offer credit, or pay other expenses abroad for my mother for example. Also maybe lower fees and commission" (Adopter 4)

6. DISCUSSION

The main purpose of this study was to answer the research question:

RQ: What are the possible drivers and barriers to customer adoption of online Peer-to-Peer remittance solutions?

Additionally, the paper also aimed at exploring the advantages and disadvantages of using online peer-to-peer remittance solutions rather than traditional methods such as bank transfer or informal channels, as well as the perceived risks and expected value from the adoption of these new solutions.

According to the data collected and analyzed in this research, four major potential drivers and two minor potential drivers or advantages were identified. On the other hand, three potential major barriers and two minor barriers or risks were found to be affecting the adoption or preventing users from adopting the online peer-to-peer remittance solutions.

In this section, a discussion of those findings is provided.

6.1. Drivers

The first major potential driver that was mentioned by the majority of the participants was ‘Fast and time-saving’, which is a crucial factor in remittances due to the connection between the sender and the recipient, which is in most cases, family members or relatives. Especially in urgent circumstances, a fast transfer could be critical considering the economic importance of remittances for developed countries, for example. Also, due to the nature of remittances being recurrent, a fast transfer becomes more critical. This driver falls into relative advantage according to Rogers 2003, especially compared to bank transfer and informal channels, which take much longer time according to some participants.

Economical driver 'lower fees, exchange rates' also considered as a relative advantage according to Diffusion of innovation by Rogers 2003 and Price value in UTAUT2 . This factor also gains particular importance due to the nature of remittances being recurrent, and in small amounts, especially when the receiving country is a developing country, or the receiving country's exchange rate is low compared to the sending currency where even a small amount could make a difference for the receiver. When sending recurrent small amounts, the sender will have to face the fees and exchange rate often, and that could play a major role in choosing the remittance solution. As well as considering the volume of global remittances presented in the introduction, where it exceeded the official development assistance and has been more stable than private capital inflow in low to middle-income countries between 1990-2019 according to the World Bank, which is one of the aims of the world bank special, according to the World Bank, personal remittance value worldwide reached 639 Billion USD in 2018 and 654 Billion USD in 2019, while the cost of remittances is still very high at around 6% to 9%. This finding is also in alignment with Camara, S findings that one of the major factors of choosing remittance sending channel was the amount that the beneficiary received which is determined by both the remittance fees and exchange rate.

Another major driver was 'convenient, easy to use'. While this could be an inherent advantage in most online or mobile solutions, it is still especially convenient in remittance solutions being recurrent as well as the variety of options that online remittance solutions offer such as cash pick-up or even delivery to the receiver address, possibility to send without having a bank account and others, especially compared to the post office or informal methods. Regarding offering different options by online peer-to-peer remittance solutions, another driver was also mentioned 'variety of options', according to the participants' different situations requires a specific option of sending money, as mentioned for example, if the receiver does not have a bank account or if they want to receive the money in cash which is an option that is not offered by traditional banks.

In general, these findings are in alignment with prior research about remittances and consumer adoption of online financial solutions.

6.2. Barriers

According to this research, the potential barrier or risk that was mentioned the most by the participants is ‘Security and Privacy’, including personal data for both the sender and the received.

This barrier could be considered an innovation resistance factor that exists across the asset class, as mentioned in the consumer innovation resistance by Ram and Seth (1989). This factor is an inherent risk in all online solutions, primarily the money related solutions. Personal financial information is sensitive, and it could be even more critical in certain countries with different legislations and laws. Even though the remittance is a small amount of money, it could be a significant amount in the receiving country and thus could be subject to some risks. This barrier might have been minimized if the customers were made aware of the different regulations those services operate under, such as GDPR.

Remittances could be a significant stabilizer of some families' livelihood or life standards, and putting the remittance at risk means a major risk for the sender's family or receivers. An argument here could be that this concern by the participants is highlighted due to the newness of the online peer-to-peer remittance solutions compared to much more established institutions like banks, and the time factor is what gives credibility regarding security and privacy.

The other potential barrier that was mentioned by most of the participants is ‘reliability and trust’, this factor is in line with Ram and Seth functional risk and psychological barrier, since the online peer-to-peer remittance solutions are new compared to other solutions as discussed above, it will take time for customers to build trust while banks that are perceived more trusted according to some participants, have built trust over decades of operations. In order to ensure faster and cheaper remittance solutions, these companies are highly automated and technical issue might occur, as some participants highlighted concerns about customer service availability which is a significant element in building trust with the customers:

"Customer service can sometimes be a challenge, to get a hold of someone to support you is not always easy as these services are heavily automated. When they work, they work like a dream but if things go wrong, it may not be that easy to get a hold of anyone. Bad experiences may push you to not continue with the service." (Expert 1)

It could also be that these solutions do not have any physical branches where customers can go and meet a representative of the company or customer support compared to banks which usually have many branch offices.

Another potential barrier according to the participants is 'international availability' which could be considered as a compatibility element as mentioned in the diffusion of innovation by Rogers, or the facilitating conditions in UTAUT2, since it is not possible to use a remittance solution that does not provide service in the receiving country. While most adopters mentioned that if different solutions are available in the country they want to send the remittance to, they would use the online peer-to-peer solution.

'Awareness and knowledge' also presented as a barrier by the participants, the lack of information about the companies or the lack of knowledge about the online peer-to-peer remittance solutions. According to Diffusion of innovation, communication channels are essential in the adoption of new innovations. Knowledge is the first step in the adoption decision making, according to Rogers, where the consumer is exposed and made aware of the existence of the innovation as well as getting information about the potential gains or value that the innovation can add to the customer experience as well as acquiring information about the functionality of the solutions.

One of the participants also highlighted that knowledge could be a major barrier among the older population or non-technology savvy individuals that will require a learning curve in order to be able to use the solution. These factors are in line with the findings of Nyström, M 2020 about the consumer adoption of Open Banking.

6.3. Limitations and suggestions for future research

Limitations are common in research studies, and this research has some limitations due to some factors that could be highlighted below.

The COVID-19 pandemic had an impact on data collection. It was not possible to conduct the interviews face-to-face and capture the feelings and gestures of the participants in order to understand the depth and context of the answers fully. Besides, some of the interviews were done via email due to the situation and the limited time available. Also, many people have lost their jobs, especially immigrants and foreigners, and it was a challenge to find a high number of participants within the author's social circle.

The age range of the sample might not be wide enough to represent all ages or give a broader picture of the drivers and barriers, especially for the elderly generation over 45, which were not included in the sample due to the mentioned situation as well as the social circle limitations.

This research solely represents the drivers and barriers in the Finnish market as a sending country, as stated in the title and in the research, and different elements and factors might be found in other markets. Also, the participants had different backgrounds and home countries, so it was not possible to represent most of the countries with such a small sample since different receiving countries might affect the outcome of the drivers and barriers such as International availability, cost due to the exchange rate and financial situation of the country and others.

In order to generalize the finding, research with a larger sample and more saturation of both the sender and the receiver countries must be done. Also, face-to-face interviews would give much more in-depth information and context in the case of a qualitative method.

6.4 Suggestions for online peer-to-peer remittance providers

This paper might be helpful for online peer-to-peer remittance providers to understand customers adoption of these solutions and enhance the drivers while work towards solving the barrier in order to increase adoption or achieve faster adoption.

For example, communication channels could be enhanced, and more information could be provided to customers both about the remittance solution and the usage of the solution to reduce the knowledge and awareness barrier, also providing more information to customers about the legal framework and regulations that govern solutions could help in reducing the security and privacy concerns, such as GDPR and PSD2.

In order to attract more users, who send remittance to different location, more international availability is needed, either by establishing own agent or cooperation with local businesses in order to provide these services in wider locations.

As reliability and trust was also a major barrier according to this research, remittance provider could establish trust to influence the adoption, even though time is a major factor in innovation adoption according to Rogers, and trust is built over time, remittance providers can influence that by offering better customer service or make it easier to access, according to some of the participants, customer service was one of the issues they faced with these solutions. Another suggestion in this context is maybe offering a physical location with a representative of the company where people can meet and ask questions or submit complains.

7. CONCLUSION

This research is the first of its kind to study online peer-to-peer remittance solutions adoption in Finland, that was conducted in order to generate a better understanding of the possible drivers, barriers, or risks that are perceived by the users to choose, adopt, or reject online peer-to-peer remittance solutions that are disrupting the remittance market backed by the new legislation such as PSD2, GDPR, and others which enhanced and opened up the financial market for emerging companies and innovations.

The qualitative research method presented in this paper found several themes of drivers and barriers or risks that are in line with the theoretical framework, especially with the attributes and elements in the Diffusion of Innovations theory, Rogers E. and parts of the main barriers in the Consumer Resistance to Innovations, Ram and Seth. As well as some of the factors in the Unified theory of acceptance and use of technology (UTAUT, UTAUT2), Venkatesh et al.

This research's data analysis found the following themes related to relative advantages in diffusion of innovation, and price value and expected effort in UTAUT2: Fast and time-saving, convenient and easy to use, lower fees and better exchange rates compared to bank remittances, diversity of options such as cash pick-up or cash delivery. As well as themes related to observability as these solutions are perceived as 'transparent' and the remittances are 'traceable'.

On the other hand, the research suggested the following themes related to the economic and physical risk barriers: reliability and trust, including low customer service accessibility, the security of the remittance, and privacy of the sender's and receiver's personal information. Furthermore, the theme related to the functional risk and facilitating conditions: international availability, and the theme that relates to Communication channels, and type of consumer: lack of knowledge, especially among the elderly populations or populations that are not tech-friendly, were also among the findings of this research.

This research might add value and possibly give online peer-to-peer remittance service providers or other remittance providers insights into the drivers and barriers for remittance solutions users for adopting a remittance solution. This study could also help or be used as a base for further research.

REFERENCES

- Al-Assaf, Ghazi and Al-Malki, Abdullah M., (2014), *Modelling the Macroeconomic Determinants of Workers' Remittances: The Case of Jordan*, International Journal of Economics and Financial Issues, Vol. 4, issue 3, p. 514-526.
- Blaxter, L., Hughes, C., Tight, M. 2006. *How to Research, Third Edition*. Berkshire: Open University Press.
- Bogdan, R., & Taylor, S.J. (1975), *Introduction to qualitative research methods*. New York: John Wiley.
- Bryman, A., Bell, E., 2011, *Business Research Methods*. Third edition. Oxford University Press.
- Camara, S. 2016. Remittance Market of Finland: *Case Study of Personal Remittance Transmission*. (Master's thesis) HAMK, Finland. Retrieved from: <http://urn.fi/URN:NBN:fi:amk-2016123121569>
- Financial Supervisory Authority FIN-FSA. 2019. *PSD2 changes payments*. <https://www.finanssivalvonta.fi/en/Consumer-protection/questions-and-answers/payment-services/psd2--second-payment-services-directive/> Accessed on: 30.10.2020.
- Financial Supervisory Authority FIN-FSA. 2019. *PSD2*. Available from: <https://www.finanssivalvonta.fi/en/regulation/regulatory-framework/psd2/>. Accessed on 15.10.2020
- Fryer, D. (1991), *Qualitative methods in occupational psychology: Reflections upon why they are so useful but so little used*. *The Occupational Psychologist*, 14 (Special issue on qualitative methods), 3-6.
- Kirk, J., & Miller, M.L. (1986), *Reliability and validity in qualitative research*. *Qualitative Research Methods Series*, 1. Beverly Hills, CA: Sage Publications.

Maimbo, S. M., and D. Ratha, eds. 2005, *Remittances: Development Impact and Future Prospects*. Washington DC: World Bank.

Nyström, M. 2020. *A Qualitative study of Possible Drivers and Barriers to Consumer Adoption of Open Banking Services* (Master's thesis). Arcada UAS, Finland. Can be found: <http://urn.fi/URN:NBN:fi:amk-2020052513292>

Ram, J. & Seth, N., 1989, *Consumer resistance to innovations: The marketing problem and its solutions*. Emory University, pp. 1-11.

Remitly website, 2020. Available at: <https://www.remitly.com>. Accessed: 9.11.2020

Rogers, E., 2003, *Diffusion of Innovations 5th edition*. New York: Free Press.

Rogers, E.M. and Kinkaid, D.L. 1981, *Communication Networks: Towards a New Paradigm for Research*. Free press, New York. (P 64)

Sahin, I., 2006, *Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory*. Iowa State University, pp. 1- 10.

The European Parliament and of the Council of 27 April 2016, *Directive 95/46/EC General Data Protection Regulation*.

The European Parliament and of the Council, *Revised rules for payment services in the EU* (2021). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:2404020302_1 (Accessed: November 2020).

The European Parliament and the Council of payment services in the internal market. *Directive (EU) 2015/2366 of 25 November 2015 on payment services in the internal market*. Official Journal of the European Union.

The European Parliament and the Council of the European Union. *DIRECTIVE 2007/64/EC of 13 November 2007. On payment services in the internal market*. Official Journal of the European Union.

The European Parliament and the Council of the European Union. *DIRECTIVE 2009/110/EC*. Official Journal of the European Union.

The European Parliament and the Council of the European Union. 2016. *Regulation (EU) 2016/679*.

TransferWise website, 2020. Available at: <https://TransferWise.com> Accessed: 9.11.2020

Venkatesh V, Thong J and Xu X (2012), *Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology*. MIS Quarterly 36(1): 157–178.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D., 2003. *User acceptance of information technology: Toward a unified view*. MIS quarterly, pp.425-478.

Western Union, *2018 Annual Report*. Can be found at:

https://s21.q4cdn.com/100551446/files/doc_financials/2019/Annual_Report/2018-Annual-Report-2019-Proxy.pdf. Accessed: 13.11.2020

World Bank KNOMAD staff estimates, World Development Indicators, and International Monetary Fund (IMF) *Balance of Payments Statistics*, Migration and Development Brief 33, 2020.

World Bank, Committee on Payment and Settlement Systems (2007) *General principles for international remittance services*.

World Bank, *Personal remittances received (current US\$)*. Available at:

<https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT>.(Accessed: November.2020).

WorldRemit website, 2020. Available at: <https://www.worldremit.com>. Accessed: 9.11.2020

APPENDICES

Appendix 1: Data collection questions

Introduction to questionnaire

In recent years, new remittance companies have emerged promising faster, cheaper, and more user-friendly solutions compared to traditional methods such as bank transfer, post office, or other traditional methods by using new technologies and reducing intermediates.

Remittance: a recurrent, person-to-person, small amount of money transfer from a foreign worker to home country.

Online peer-to-peer remittance solutions such as Transferwise, Trustly, Remitly, Western Union online solution.

Traditional remittance solutions such as Bank transfer, post office, informal methods (a person traveling to destination)

Research Questionnaire

1. What do you think about online peer-to-peer remittance solutions?
2. What do you know about remittances being done in different services?
3. What are you usually using to send remittances and why?
4. How long have you been using this solution?
5. How adaptive are you towards new innovations? Do you use other online or mobile financial services?
6. In your opinion, what are the advantages of online peer-to-peer remittance solutions for users? What do they offer differently?
7. Is privacy a main concern for you to use online solutions?
8. What do you think are the main reasons users would choose online peer-to-peer remittance solutions?
9. What are the disadvantages/challenges of online peer-to-peer remittance services? Or what would be considered as a barrier to adopt those solutions?
10. What are the factors that users might consider or perceive as risks for using online peer-to-peer remittance solutions?
11. What makes or could make your remittance experience better?
12. Anything else you would like to add?

Appendix 2: Research Data

Adopter 1

1. Online remittance solutions (ORS) are net based money transfer options to domestic and international destinations. I know that ORS businesses rely on remittance fees and play on conversion rates for their sales. They also rely on widespread adoption for success, but there is fierce competition in this regard. I think reliability, security, customer support options, and convenience are key challenges for these businesses.
2. I know that the OR services differ in accordance with the option they offer in both payment stage and withdrawal stage depending on the countries involved and the financial services within those countries. The core is simple money being transferred among financial businesses from a bank account, bank card to another recipient account or cash pick up. The service might include money transfer agencies at delivery
3. I used in the past wire transfers, I used Western Union services both at an agency and later online, and Ria transfer service. Bank transfers were disappointing as there was no clarity on the real amount to be received, also it took much longer than expected, the fee also was a fixed price but surprising extra fees at the recipient bank were disappointing. This might be a country related issue. Western Union transfers were more convenient and the follow up efficient, especially online but it turned out that if you exceed a certain amount per year, you need extra registrations and authorizations which turned out to be bureaucratic and missing on customer support. Ria was used for small amounts in the shop next door, easy and cash pick-ups quick. Conversion is less determinant when I use this service because the amounts are small. The agent helps with the payment, no registrations. Lately, I turned towards using my Moroccan bank application issuing a code for a transfer, the recipient won't need a bank account or a bank card to withdraw the amount, only a code at the ATMs. It is instant, and the fee also is encouraging. The remittance becomes basically local
4. I used these solutions through the years.
5. I am open to innovative solutions if they can secure instantaneity, better cost, withdrawal options at my transfer destination, customer support in case of issues,

safe and easy payment. The more sending options (like from application, card to card, to mobile), and receiving options (like door to door cash, quick cash pick-up, bank) offered ,the more alluring it is.

6. The benefit for users is basically having a convenient way of having things done, either for personal, family purposes or for business purposes. The need is big especially among expatriates who are also financially attached to their countries, and generally to investors in small firms abroad in need of remittances mostly at the project initiation stages. ORS help in cases of urgency, and their spread in remote areas is also convenient.
7. Privacy is definitely important. The transfers have to be constantly safe, and personal data protected. The transfer company should also be accredited by national/international authorities. Understandably, surveillance is high in this sector as transfers' purposes and frequencies are monitored, but protection is important at least in regard to using account information upon clear consent for marketing purposes and else.
8. Safety, convenience, instantaneity, cost, sending and receiving features, customer support options.
9. The challenges for ORSs are related to: 1) securing a safe transfer. 2) establishing connection with users through enhancing reliability and accessibility to customer support throughout the operation. 3) offering wider withdrawal options in target countries. Barriers for adoption are related to reliability, conversion rates, and fees. ORS should offer a larger selection of features to attract a larger user base.
10. Risks include: Own payment information divulged to a third party, remittances not received and not returned, conversion value sudden drop
11. Payment security certificates, authentication level, and customer support availability could make the experience better and add to the trust level.
12. ORS are proliferating because consumption patterns are changing towards self-service modes especially when online solutions offer security, effectiveness, convenience and instantaneity. ORS should consider options of making large amounts transfers available, work on fixed transfer costs and clearer conversion rates,

options of cancellation possibility after sending, promotional offers, and customer support.

Expert 1

1. Really good that new solutions come up and in many ways these have forced banks to offer better services as well. The increasing competition does not only force banks to reinvent their offering but also offer more options to consumers using those services which in the end is the main benefit of the field's development.
2. Not quite sure what the question is referring to. Remittances play a huge role in the economy of developing countries, even in disaster relief. Having services available which are transparent, low-cost, trust-worthy and easily accessible is key. Remittance services which are fully trackable, cheap, fast and usable without huge bureaucracy, take over market share fast.
3. I have only ever used three solutions, wire transfer through my bank (correspondent banking), TrasferWise and Azimo. Banks work for Europe and certain countries but is expensive and you have no idea when the beneficiary will receive the funds. Both Transferwise and Azimo work really well, transparently, fast and offer guaranteed currency rates. My experience is however limited as I don't send remittances on a weekly or even monthly basis.
4. Since about 2013.
5. Very adaptive, I am always up for trying new services, I mainly use online financial services, apps or otherwise.
6. They are faster, cheaper, transparent as you know when and how much the receiver will get and they are also trackable.
7. Not at all. Security is fairly good as long as you use well-known solutions, provided that they offer remittances to the country you are sending money to.
8. For the reasons in the answer to question 6.
9. Customer service can sometimes be a challenge, to get a hold of someone to support you is not always easy as these services are heavily automated. When they work, they work like a dream but if things go wrong, it may not be that easy to get a hold of

anyone. Bad experiences may push you to not continue with the service. In addition, sometimes the promised delivery times don't hold.

10. Security can be an issue for some. Also if you are not used to using self-service mobile/online solutions there is a learning curve which can take some time depending on the user's skill level.
11. Better service for the remittance and also improving customer service availability.
12. The remittance market is undergoing huge development and new services constantly seem to enter. This is great for the development of the field. This has definitive benefits also for the individual user.

Non-adopter 1

1. They are a useful method of transferring money, which like many online solutions are quicker, more accessible and often more economical.
2. I am familiar with a few online remittance services and have used the 'traditional' transfer services in the past. I am also aware of individuals using a personal acquaintance travelling abroad as a means of transferring money.
3. Bank transfer usually. It is extremely efficient. PayPal also as it was one used most widely.
4. A number of years.
5. Prefer to use online services where possible. Trade in cryptocurrency online.
6. The use of use and accessibility at any time of the day. Cutting out the middle man saves time, effort and money. Also integration with other services provides further benefit and control of one's finances.
7. Must be private, secure and fraud safe.
8. Ease of use. More economical. Also in some situations, it is the only option.
9. Security is a major concern. Also the accessibility/widespread use of the service. Cost. Establishing a global network. Also populations that are non-tech friendly e.g. the elderly, certain countries of the world.
10. Fraud is the major concern. Also issues with the services crashing/being unavailable for technical issues. Occasionally, access due to passwords/verification can be a challenge.

11. Currently, the online services meet my needs.

12. No

Adopter 2

- 1- I think it's really effective and it's really helpful and it saves a lot of time and yeah I think it's her it's a great solution for transferring money
- 2- so I think there is no one great service, each service has its unique features. for example I do also use bank transfers and post office as well as informal methods like a person travelling to deliver money but bank transfer if you're sending money and you want it to arrive in different currency the exchange rate is way higher in the banks than for example Transferwise or Western Union plus it takes way longer time to arrive but I think sometimes it's still more trusted for things to go through banks. I prefer to use Western Union when I send to Jordan because Transferwise is not available and bank exchange rate is higher and my brother can get the money in cash and with more privacy.
- 3- I mostly use Transferwise when available and very rarely I transfer using bank transfer, also Western Union when Transferwise is not available or I want the receiver to get them in cash.
- 4- I have been using these solutions for about 5-6 years, I discovered Transferwise about a year ago and was using mostly WU before that, also sometimes bank transfer when I send my family to UK because I didn't know about those solutions but now I use Transferwise more.
- 5- I am adaptive, always excited about solutions that make life easier but sometimes I ignore the privacy part. I know nothing about the privacy in some solutions but I still go for it but not sure if that's a good thing
- 6- These new solutions are way faster, much better exchange rate, convenient that I can send from my home or phone that's very nice and also more private because I don't need to go and meet a person and show my ID and fill papers. Also user friendly, really easy to use.
- 7- yes privacy is a concern because I feel that I don't really give it so much attention

- 8- I think because they might find these solutions efficient, fast and easy. Also they are cheaper than other ways of sending money especially with the exchange rate as mentioned
- 9- I don't think I can find any disadvantage, maybe privacy but I don't know much about how private or not those solutions are so I cannot say. I think they are really more efficient than the bank transfer.
- 10- I think the risk is mainly privacy and trust, because it is easier to trust to send money with a company that has been operating for many years while most of these solutions are new, but Western Union and Transferwise are well established and many people I know use them so I trust them so far. But maybe a risk of online hacking or scam for these companies might be a risk. Maybe also tax evasion risk.
- 11- I think there are still a lot of countries that I cannot send money to, and each country has different rules that some countries ask so many details and so on. Sometimes the person is not able to get the money before providing so much details.
- 12- I am not sure how the future would look like for money transfer, will banks still be usable for remittances or will the whole financial system change to other methods or so on but these solutions are kind of changing the international money transfer.

Adopter 3

- 1- I think that peer-to-peer remittance solutions are a great innovation and they fill a gap in money transfer services.
- 2- It is always great to have options and some competition among service providers. there should be different services because none of them works everywhere, all the time.
- 3- I use Transferwise for available countries, because of low cost, speed, and privacy. I use bank transfer inside Europe for euro currency when it is free. for the money I send to relatives in the middle east, I use travelling persons if available for low cost, or Western Union because there is no other solution.
- 4- Transferwise, I have been using for 3 years.
- 5- I am adaptive when I need to. I used PayPal, google pay, trustly, and my own bank (OP) app.

- 6- For me, it was clearly the low cost, better exchange rate and more privacy.
- 7- It is a concern, but not the main one. If my own bank would transfer with the same cost and exchange rates as Transferwise, I would have used it.
- 8- I think it would be one (or both) of the two main reasons: the total lower cost of the transfer, and the privacy of the transfer, so that not every data collection agency knows where you send every sent.
- 9- Some people may not trust technology with their money. For me, the only barrier is that Transferwise does not cover enough countries.
- 10- These solutions are not as trusted as banks. People would ask themselves, how safe is it to send money over some app I just downloaded? Maybe people would feel better if they have 10000 EUR in their bank account rather than their Transferwise account. And privacy concerns. How do I know that this app is not collecting and sharing my data, or even accessing my banking data (like the case against trustly) I don't see any other perceived risks.
- 11- Access to more countries, and the ability to pay bills easily with the service (e.g. using bills barcodes).
- 12- Transferwise opens a bank account for you and sends you a debit card that you can use anywhere. maybe peer-to-peer remittance is a step towards a non-centralized worldwide, easy and simple banking and financial services.

Non-adopter 2

1. I don't have much information about these apps, I have used it once and it didn't work.
2. I don't know much, maybe online peer-to-peer solutions are cheaper.
3. Western Union in cash. Because I feel it's safer and more private. To make sure the other person receive them also in cash. Other solutions are not available in some countries.
4. 9 years.
5. I use some online financial services.
6. It might be faster because they use new technology, Environment friendly, less paperwork. It's the future and I would like to use. Easier and more convenient to use. cause you can send money from everywhere.

7. Yes privacy is important to me and I feel that face to face transaction are more private. Because I don't trust the terms and conditions from all apps. Because most app sell data to third party.
8. If its regulated in the EU then privacy and security are good. They might be faster and low transfer fees. Convenience and availability
9. Security and privacy. Not available in many places. For example: they are not available in my home country. Because of the mass amount of application and there are not much information available so it's hard to know which is the best to use.
10. Security risk. For example: hacking my app or account or stealing my password and send money from my account. For example: I used it once and the money didn't arrive.
11. A solution that I can trust more and feel more secure. More efficient and lower fees. Get more information about the company.
12. No.

Adopter 4

- 1- these services are good and fast, you don't need to have an account you can send by then name and phone number and the receiver can get the money by giving the key at least in Western Union. So I guess it is the easiest and fastest way.
- 2- as mentioned the receiver don't have to have a bank account for some services like Western Union but if I use my bank transfer the receiver must have a bank account. It is also faster they can get the money within an hour.
- 3- I use Western Union mobile app because it is very convenient and available in many countries like my home country Syria. It is faster and no need for a bank account and available in many places and I can send from my mobile.
- 4- I have been using it for 2-3 years
- 5- Yea im very interested in new innovations to make things easier and faster, I use mobilepay in Finland and Pivo also online banking
- 6- the advantages are more accessible since no need for a bank account, faster and available as mentioned

- 7- Yes also security, I need to be sure that the money will arrive and in case of any problems the money will not be lost. So yes it is important to trust the company. I feel secure and I trust Western Union online solution
- 8- could be that it is more private because you they don't have to provide a bank account.
- 9- maybe that they don't offer credit. I cant think about other disadvantages
- 10- some services ask about the money source and the relation with the receiver and so many questions and I think this could be too much sometimes
- 11- maybe if they offer credit, or pay other expenses abroad for my mother for example.
Also maybe lower fees and commission
- 12- not really

Adopter 5

- 1. I think online remittance solutions are a pretty helpful service for fast transfers. With the developed technologies payments, and transfers became faster and easier.
- 2. Can't say much here.
- 3. In Finland, I use the MoneyGram service. Well, Western Union could also be an option, but we don't have a branch office in my home country. The service is easy. Customers make a request online and in 24 hours they can pay in any R-Kisoki center. In 5-10 minutes, money "pick up" service will be available on the other side. I do everything in cash, I prefer that way. Banking transfers take longer, up to 3-4 working days and can cause various troubles and questions. Customers pay the strict transaction fees and the deal is done.
- 4. Since I am in Finland.
- 5. I am adaptive to different technical Neuhaus. I use other online financial systems such as Skrill and Paypal. Skrill is a relatively new option for sending and receiving money. But non-European countries experience troubles with withdrawal procedures, that is because not many local banks work with the skrill system. I keep an eye on new possible platforms.
- 6. Here is important to mention in a strict comparison. if we compare the remittance by online banks, then we can say, here we have an advantage about timing, easiness,

and comfort of the service. Sometimes we need very quickly transfer money abroad very quickly. In this case, we have online services have a huge advantage.

7. Privacy is one of the key categories, but for me more important are a transaction fee and delivery time.
8. I think that people don't much want to input banking information, or wait for a long time. Basically, for nowadays online remittance system, we need only the name of the receiver person, and that is enough.
9. In Finland options to send money are not that many. The sector is regulated by banks. The number of transactions per month is also limited, which is a disadvantage. Sometimes, customers are required to tell additional information regarding the source of funds, which can cause a delay. There is no competition between online remittance services in Finland. I find transaction fees are pretty high, that is because of low competition and the absence of options.
10. I think, there could be trust issues to the remittance company. Normally, people ask around, and if there is one good example of sending money abroad, then they use that same service. Regarding other risks, can't say much.
11. I think lower transaction fees and cooperation with other financial services will cause competition and lower prices. Maybe further development of application versions or other options.
12. Nothing much. Just want to mention the importance of having as many services as possible in the market. In terms of convenience, everything is great, in terms of transactions fees, they seem high.

Adopter 6

- 1- Yeah, I think like right now like 2021 the option like sending money abroad being really easy and for example I use Transferwise and I like this option because it's very fast, like I send money to Turkey and it ships in 15 minutes and I need like just the IBAN and that's enough. So, in that sense I think time wise it's very efficient and takes like a few minutes, so it's cost efficient and also saves time so that's why I enjoy that solutions.

- 2- Yeah, I mean like first of all if you send from a bank for example I use Handelsbanken it takes like three days or two days as far as I know versus you sending Transfersie it's like 15 minutes and also sending through banks they cut more money.

Interviewer: you mean commissions and fees.

Interviewee: yes exactly.

Interviewer: and do you know the difference between those solutions how they do it back office, like the difference in technology or systems and so on?

Interviewee: no, I'm not sure, I just know they are faster and cheaper.

- 3- I think like as I remember I used to send or get money through the bank transfer. I mean you send through bank and then you need to have a lot of information like IBAN and SWIFT even to make the application or fill the form takes a lot of time. sometimes I do wrong, and the money doesn't even arrive. Yeah that was before and now I use Transferwise, I don't use anything else anymore.

Interviewer: how did you find about Transferwise? or how was the transition?

Interviewee: I'm not sure, maybe some of my friends used it or maybe I searched online I'm not sure, but now I started to tell about those like Transferwise to a lot of my friends and now many of many of my friends use it because they find it practical and handy.

- 4- at least 3 years.

- 5- Yea I mean, I'm not very nerdy like I don't watch all innovations, but I do keep myself up to date. but I think what works usually is mouth to mouth information, like I don't read so much tech news but usually my friends talk about that and I work in a software company so you know lots of innovations and so on I need to be up to date.

- 6- Yeah, I think I'm going to repeat myself again, I think like as I said it is really cost and time efficient. you know for example in Finland we have Mobilepay and its super-efficient it comes in seconds and can use it in shops, you know now everything is time related especially in my case sometimes I need to transfer the money to Turkey as fast as I can to my family that's why I can trust these apps because they also notify you ok it's on the way and will arrive in like 15 minutes. and from my background in Turkey, we never trust the banks because there always hidden costs

and fees comes up and it is not transparent. for example, if you are not very aware of the economy or worked in related field you will end up paying more than you are supposed to, but I like feel that Transferwise is very transparent you are notified and you know I always check with my family like in 15 minutes and ask did you get it and they say yes so it's very trust worthy.

7- I mean I don't know, I'm not super concerned about it in day-to-day life, but of course I don't want to give away everything but I'm not super paranoid about that. I gave already to Facebook, Whatsapp or whatever so my data is there anyway.

8- yea I think it could be because of the costs and the time, like again. and also, maybe how easy it is. but again, if you talk about our age like young people and know how to use technology so in that sense, I think would be also hard for people who are not technology persons or to trust these platforms, so I think there is also that side. but I think our age people know how efficient it is this kind of applications versus banks.

9- yea as I mentioned maybe the age, but also, I think it is quite new innovations os people need time to adapt to these platforms, might be that being open to these new ideas might be a challenge like even when I'm talking to my friends in Finland about that they ask is it reliable because we have this common sense that banks are reliable, or like they ask what if my information are stolen you know or hacking, or what. if they take my money away, so I think all of these things are scary for people.

interviewer: yes, for example when you tell your friends about these solutions what other negative or concerns they show?

Interviewee: yea actually my age they are like yea let me check and they are usually positive about the solution, there was one of my friends who is in general concerned about privacy so she was hesitant but I realized for example when my family wants to send me I recommend Transferwise to them and they are like 'ah I don't know it is a bit weird I don't want to do this' because they just don't want to try new things you know. you know when people know one solution, they don't want to change because they say 'this system is working for me why should I change'

10- interviewer: for example, you mentioned the Privacy risk, that information might be stolen or hacked, any other things that you or users might perceive as risks?

interviewee: yea I think the privacy and reliability, I think those are the most concerns I cannot think about anything else.

11- interviewer: as you mentioned you are happy with this solution but what could make it better or what is missing that you would like to have in these solutions?

interviewee: mm maybe you know, maybe I'm wrong I didn't check but maybe a mobile application that can send money as fast as like mobile pay for example, you know you press one click and the money is sent. I mean a mobile app would be great.

Interviewer: there is actually a mobile app for Transferwise.

Interviewee: ah really, that is great sorry I didn't check well then.

But yes, then it would better if it is even faster, like ok 15 is fast but still why not faster. Maybe if more people use this option when they send me money instead of bank transfer so maybe make it more reachable to people like marketing wise and more communication with the public.

12- Not really, I mean I don't have experiences with many solutions, but I send money a lot mostly to Turkey and Transferwise is available there.

Non-adopter 3

1- mm I think it is good to have different services to compete and create better solutions to customers, but not sure how good those new solutions are yet because I haven't send money through them but I checked one mobile app

2- interviewee: mm do you mean how the customers send money?

Interviewer: Yes user experience or back office methods like technologies they use or business model or so? mm I know that banks are trusted for sending money but sometimes it is slow and expensive depending on the country you are sending to because there might be many intermediary banks that take extra fee, also I send with someone traveling to my home country which is easier in my case but of course sometimes risky. I heard about these online new companies and I checked Transferwise mobile app but didn't send money because they are not available in my home country, but I think they use some new technology or method to offer

something different, the interface was easy and clear and there were many details available at least more than my bank app.

- 3- I usually send with someone traveling to my home country because very few ways are available and even if they are available the exchange rate is really low but this might be a special case
- 4- about few years
- 5- ah yea I am very adaptive and I really like technology and online stuff I think it is the future but I think there is a huge difference or a gap between countries in this context so I can't use all the new technologies all the time for example to send money home but in Finland I always use mobile solutions like ApplePay, Pivo and others, have not used cash in years
- 6- mmm as I said I checked Transferwise once and just like checked the mobile app to try and send money but as I said it was not available in my home country but I remember it was easy to use at least for me and very transparent actually compared to banks, for example one time I needed to send one time payment to UK and I tried to do it in my mobile bank app but it was very unclear how much is the cost or the exchange rate or how much time it will take, so when I tried Transferwise I remember you can see the costs and the exchange rate well maybe not very accurate but at least you get an idea how much it will cost approximately, I even called the bank to ask about sending money to UK and I don't remember that I got a good answer so you see it is already easier. also I think it mentioned in Transferwise how long it will take to arrive or so. on the other hand if we compare to sending money with someone it is much more convenient because I can send anytime and not wait until someone is traveling to my home country and like meet them and give the money and so on you know, but unfortunately those solutions are not available for me
- 7- Actually it is but not much, because we are pushed to use technology and sometimes it is not an option for example now during covid we have to use Zoom or Teams or not to use cash in the store to avoid contact, so at some point it is not a choice and still many services get hacked and information stolen so nothing to do about it sort to say.

- 8- well I can assume after as i said I only checked Transferwise app and to compare it with my experience with the bank that you can see the costs and the time and I think it is cheaper and faster, well they also promised that on their app description and website but you know in general I think it is clear and easy to use I mean it was much easier than my bank mobile app. and if I compare it to the method I use mostly I mean with someone traveling home of course it is way way better, I mean again I can send from my couch and not wait until there is someone traveling home you know and of course it is safer.
- 9- well from my experience I didnt use it because it is not available as mentioned, so maybe more locations would get them more users, or maybe people don't want to try new things and they are happy with the bank transfer or other types I dont know it depends, for example if im older generation maybe I dont like to send money with an application that I just found online so maybe they dont trust them or they dont know how to use these apps or so.
- 10- hmm well as i said some people might be afraid of using some app they just downloaded and there is no office of physical location for the company in their country, for example if something goes wrong with my trasnfer I go to the bank office in Helsinki and copmplain but not sure how this will be with those apps. also if something goes wrong you can only call and I don't know where these companies are located or registered or under what laws they operate so it is risky if something goes wrong. but again, in my case also there are many risks with sending money with someone I might not even know well so it depend on the need and means avaiialbe.

interviewer: yes of course there is some risk appetite but if you have all the methods available to you what would you see as a risk in online peer-to-peer remittance that you might consider other solution?

interviwee: mm if I can send money to my home country with any solution I would say banks and Transferwise would be my options, the only risk that maybe and i say maybe is that transferwise is very new and might not be as trusted as banks but that's if we have the same fees, time and exchange rate but you know you cannot get everything otherwise all other solutions will close hahah.

- 11- well I would be happy if there are more ways to send money to my home country and at this point I don't mind higher fees or how much time it will take or so but the exchange rate is important for me
- 12- hmm not really, I don't have so many experiences with remittance because as I said not many are available for me but yes would be greater if more are available.

Appendix 3: Examples of the Data Analysis

	6. In your opinion, what are the advantages of online peer-to-peer remittance solutions for users? What do they offer differently?	Fast, Time saving	Convenient, easy to use	Reliable and trusted	security and privacy	Diversity of solutions	awareness and knowledge	Transparent and traceable	Lower fees , exchange rate	International availability
A5	Here is important to mention in a strict comparison. if we compare the remittance by online banks, then we can say, here we have an advantage about timing, easiness, and comfort of the service. Sometimes we need very quickly transfer money abroad very quickly. In this case, we have online services have a huge advantage.	+	+							
A1	The benefit for users is basically having a convenient way of having things done, either for personal, family purposes or for business purposes. The need is big especially among expatriates who are also financially attached to their countries, and generally to investors in small firms abroad in need of remittances mostly at the project initiation stages. ORS help in cases of urgency, and their spread in remote areas is also convenient.	+	+							+
E1	They are faster, cheaper, transparent as you know when and how much the receiver will get and they are also trackable.	+						+	+	
N1	The ease of use and accessibility at any time of the day. Cutting out the middle man saves time, effort and money. Also integration with other services provides further benefit and control of one's finances.	+	+						+	
A2	These new solutions are way faster, much better exchange rate, convenient that I can send from my home or phone that's very nice and also more private because I don't need to go and meet a person and show my ID and fill papers. Also user friendly, really easy to use.	+	+		+				+	
A3	For me, it was clearly the low cost, better exchange rate and more privacy.				+				+	
N2	It might be faster because they use new technology. - Environment friendly, less paperwork. - It's the future and I would like to use. - Easier and more convenient to use. cause you can send money from everywhere	+	+							
A4	the advantages are more accessible since no need for a bank account, faster and available as mentioned	+	+							+
A6	yeah, I think I'm going to repeat myself again, I think like as I said it is really cost and time efficient. you know for example in Finland we have Mobilepay and its super-efficient it comes in seconds and can use it in shops, you know now everything is time related especially in my case sometimes I need to transfer the money to Turkey as fast as I can to my family that's why I can trust these apps because they also notify you ok it's on the way and will arrive in like 15 minutes. and from my background in Turkey we never trust the banks because there always hidden costs and fees comes up and it is not transparent. for example, if you are not very aware of the economy or worked in related field you will end up paying more than you are supposed to, but I like feel that transferwise is very transparent you are notified and you know I always check with my family like in 15 minutes and ask did you get it and they say yes so it's very trust worthy.	+						+		

N3	mmm as I said I checked Transferwise once and just like checked the mobile app to try and send money but as I said it was not available in my home country but I remember it was easy to use at least for me and very transparent actually compared to banks, for example one time I needed to send one time payment to Uk and I tried to do it in my mobile bank app but it was very unclear how much is the cost or the exchange rate or how much time it will take, so when I tried Transferwise I remeber you can see the costs and the exchange rate well maybe not very accurate but at least you get an idea how much it will cost approximalty, I even called the bank to ask about sending money to UK and I dont remember that I got a good answer so you see it is already easier. also I think it mentioned in Transferwise how long it will take to arrive or so. on the other hand if we compare to sending money with someone it is much more convinient because I can send anytime and not wait until someone is traveling to my home country and like meet them and give the money and so on you know, but unfortunatley those solutions are not available for me									
			+						+	

		Fast, Time saving	Convenient, easy to use	Reliable and trusted	security and privacy	Diversity of solutions	awareness and knowledge	Transparent and traceable	Lower fees, exchange rate	International avaiability
	10. What are the factors that users might consider or perceive as risks for using online peer-to-peer remittance solutions?									
A5	I think, there could be trust issues to the remittance company. Normally, people ask around, and if there is one good example of sending money abroad, then they use that same service. Regarding other risks, can't say much.			-						
A1	Risks include: Own payment information divulged to a third party, remittances not received and not returned, conversion value sudden drop			-	-					
E1	Security can be an issue for some. Also if you are not used to using self-service mobile/online solutions there is a learning curve which can take some time depending on the user's skill level.				-		-			
N1	Fraud is the major concern. Also issues with the services crashing/being unavailable for technical issues. Occasionally, access due to passwords/verification can be a challenge.			-	-					
A2	I think the risk is mainly privacy and trust, because it is easier to trust to send money with a company that has been operating for many years while most of these solutions are new, but westernunion and transferwise are well established and many people I know use them so I trust them so far. But maybe a risk of online hacking or scam for these companies might be a risk. Maybe also tax evasion risk.			-	-					
A3	These solutions are not as trusted as banks. People would ask themselves, how safe is it to send money over some app I just downloaded? Maybe people would feel better if they have 10000 EUR in their bank account rather than their transferwise account. And privacy concerns. How do I know that this app is not collecting and sharing my data, or even accessing my banking data (like the case against trustly) I don't see any other perceived risks.			-	-					
N2	Security risk. For example: hacking my app or account or stealing my password and send money from my account. Also I tried one remittance application and the money didn't arrive.			-	-					
A4	some services ask about the money source and the relation with the receiver and so many questions and I think this could be too much sometimes.				-					
A6	interviewer: for example, you mentioned the Privacy risk, that information might be stolen or hacked, any other things that you or users might perceive as risks? interviewee: yea I think the privacy and reliability, I think those are the most concerns I cannot think about anything else.			-	-					

N3	<p>hmm well as i said some people might be afraid of using some app they just downloaded and there is no office of physical location for the company in their country, for example if something goes wrong with my trasnfer I go to the bank office in Helsinki and copmplain but not sure how this will be with those apps. also if something goes wrong you can only call and I don't know where these companies are located or registered or under what laws they operate so it is risky if something goes wrong. but again, in my case also there are many risks with sending money with someone I might not even know well so it depend on the need and means avaiable.</p> <p>interviewer: yes of course there is some risk appetite but if you have all the methods available to you what would you see as a risk in online peer-to-peer remittance that you might consider other solution?</p> <p>intervieeee: mm if I can send money to my home country with any solution I would say banks and Transferwise would be my options, the only risk that maybe and i say meybe is that transferwise is very new and might not be as trusted as banks but that's if we have the same fees, time and exchange rate but you know you cannot get everything otherwise all other solutions will close hahah</p>									
----	---	--	--	--	--	--	--	--	--	--