



# Ties That Set You Free

Social Network-Based Innovations for C2C  
Marketplaces

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## **Abstract in English**

Generation Z growing up and gaining more important roles as a consumer group, the unfolding global economic crisis and the increasing need for sustainability create a vacuum that could be filled by the reformation of C2C re-commerce marketplaces. This study examines how trust can be translated to the language of technology, e-commerce and user experience to increase the efficiency and profitability of C2C marketplaces. Secondary research and a threefold primary research were conducted to analyse how social ties between buyers and sellers influence preferred pricing and payment methods, likelihood of purchase, perceived risks and negotiations. Social network theory, social exchange theory, the endowment effect, perceived risk theory and psychological aspects of social reputation and negotiations provide the theoretical base of the study. The market research supports that there is a market gap in Hungary for C2C marketplace innovations. The results of the primary research show that stronger social ties mean that buyers are more likely to accept the price set by the seller, while with strangers, they prefer participative pricing. In the case of first-degree connection, direct payment (e.g. through Revolut) is preferred, in contrast to the case of strangers, where paying through the platform is more appealing. Risks are perceived to be lower when there is any kind of prior social relationship between the parties, and the likelihood of purchase is higher. The study proposes that the pain of distrust towards C2C marketplaces should be defeated by the standardisation of purchasing processes and integrating social elements.

**Keywords:** Sharing Economy, Collaborative Consumption, C2C, Innovation, Trust, Social Relationships, Pricing, Payment, Perceived Risks

## **Resumo**

A “Gen Z” está a crescer e a ganhar importância como grupos de consumidores. Com a crise económica mundial e a necessidade crescente de sustentabilidade, criaram um vazio que poderá ser satisfeito com a reestruturação do mercado de “re-commerce” C2C. Este estudo examina a conversão de confiança para linguagem tecnológica, “e-commerce” e experiência do usuário, de forma a aumentar a eficiência e a rentabilidade destes mercados C2C. Foram examinados os laços sociais entre compradores e vendedores e como estes afetam os preços e métodos de pagamento preferidos, a probabilidade de compra, os riscos percebidos e as negociações. A teoria das redes sociais, a teoria das trocas sociais, o efeito de dotação, a teoria dos riscos percebidos e os aspetos psicológicos da reputação social e das negociações fornecem a base teórica do estudo. O estudo de mercado sustenta que existe uma falha no mercado húngaro relativo a inovações afetadas ao mercado C2C. Os resultados mostram que laços sociais fortes significam que os compradores são mais propensos a aceitar o preço fixado pelo vendedor, enquanto quando há um baixo nível de relacionamento social estes preferem ter um papel interveniente na definição dos preços. No caso de uma ligação de primeiro grau, é preferível o pagamento directo ao contrário do caso de estranhos, em que o pagamento através da plataforma é mais atractivo. Os riscos são considerados inferiores quando existe qualquer tipo de relação social prévia entre o comprador e o vendedor, e a probabilidade de compra é maior. O estudo propõe que os obstáculos da desconfiança em relação aos mercados C2C deve ser derrotada pela normalização dos processos de compra e pela integração de elementos sociais.

**Palavras-chave:** Partilha de Economia, Consumo Colaborativo, C2C, Inovação, Confiança, Relações Sociais, Preços, Pagamento, Riscos Percebidos

## **List of Abbreviations**

C2C – Consumer to Consumer

P2P – Peer to Peer

WTP – Willingness To Pay

WTA – Willingness To Accept

Gen Y – Generation Y

Gen Z – Generation Z

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## **1. Introduction**

### **1.1. Dealing with Friends**

Many studies have examined how the relationship between trading parties may influence a deal (Granovetter, 1973, 1983; Kavanaugh et al., 2003; Grayson, 2007; Li et al., 2018).

Granovetter (2005) describes that social networks enhance information flow and trust among its members and punish and reward different behaviours more efficiently compared to strangers interacting. These non-economic factors provide economic efficiency gains when economic transactions are carried out within social networks. This phenomenon is better known for its negative connotation, such as bribing and corruption, however, the cost-reducing effect of social networks in economic environments is oftentimes surprisingly strong. An existing social relationship between the actors of an economic situation means enhanced level of trust and loyalty (Granovetter, 2005; Li et al., 2018), being less driven by self-interest, higher importance given to equality and fairness and more willingness to compromise (Mandel, 2006). This is because people are more likely to let social norms of fairness and generosity influence their attitudes when they have a closer relationship with the other person (McLean Parks et al., 1996). A main cause behind the negative effects of prior relationships between the parties is the role conflict between being acquaintances and doing business with each other at the same time. This is because the economic nature of the transaction implies a need and wish for economic gains (Grayson, 2007; Li et al., 2018). The endowment effect describes, sellers want to sell their products for more than what they would pay for the same item if they did not have it (Thaler, 1980). At the same time, logically, buyers want to achieve a good value for money. This means a conflict of interests between the parties leads to distrust, dissatisfaction with the final deal or the failure of the transaction (Morewedge & Giblin, 2015). This phenomenon imposes a high risk when the parties know each other since they are keener to avoid a conflict than strangers (Pinkley 1990). Their motivation for this is twofold. On one hand, they want to keep the relationship because of feelings, and / or social and economic gains. On the other hand, it is also important for them because people usually want to look good in front of others and keep a good social reputation; in this case, they might be afraid of impairing their reputation as a reliable and generous person (Emler, 1990).

The reasons behind the positive and the negative effects both show, when friends or people from the same social network trade with each other, it is not a solely economic exchange, but a social one as well (Uzzi, 1996). According to the Social Exchange Theory, people seek to choose the relationship that would maximise their benefits after comparing costs and benefits and assessing their options (Homans, 1958). There is mutual agreement among researchers (Oh & Moon, 2016; Sutherland & Jarrahi, 2018; Botsman, 2013; Dillahunt et al., 2017) that the sharing economy has a strong social aspect. For this reason, the Social Exchange Theory is applicable and explains more about digital C2C transactions than purely economic exchange theories (Kim, Yoon, & Zo, 2015).

Trust is needed in the sharing economy, since it often requires meeting in person with strangers, providing them with personal information or sending them payments before receiving the product (or vice versa) (Botsman & Rogers, 2010; Dillahaunt et al., 2017; Oh & Moon, 2016). In traditional settings, being in the same social network provides parties with more trust when trading with each other compared to trading with strangers. A more recent study from Li et al. (2018) examines whether the same is true in social commerce (i.e. digital transactions aided by social media), and if friendship quality matters in such transactions. They find that the positive effects of friendships examined in their study (trust and loyalty) are stronger than the negative effects deriving from the role conflict between wanting to keep a good relationship but also to make a good deal, thus relationship quality positively affects purchase intentions in C2C social commerce.

## 1.2. Industry Analysis

However, it is still under-researched how social relationships between peers might influence deals in C2C online marketplaces, such as eBay or OLX, even though Ebay.com is the 36th most visited website in the world, with an average of 736,67 million total views monthly (Similarweb, 2022a), while OLX.pl has an average of 109 million monthly total views (Similarweb, 2022b). Ebay was the first online marketplace that enabled private persons to exchange goods online. It was founded in 1995 and quickly became a success story, reaching USD 10.42 billion revenues in 2021 (GlobalData, 2022). In the past decades retail e-commerce is flourishing, breaking records every year. For 2022, retail e-commerce sales worldwide are estimated to exceed USD 5 trillion (Cramer-Flood et al., 2022). Based on a 2022 survey, 35% of global digital purchases

happened through online marketplaces (Wunderman Thompson, 2022). The most visited e-commerce and shopping website in the world is Amazon.com, followed by Ebay. Except Walmart.com out of the most visited sites, all of them are offering C2C transaction options (Similarweb, 2022c). China is the world's most penetrated e-commerce market where 46.3% of retail sales happen through online channels (Lebow, 2022). Between Q1 of 2018 and Q2 of 2020, an average of 44.23% of online retail sales were C2C in China (iResearch, 2020). Another key player of the e-commerce scene is the US. By 2030, it is anticipated that the value of the online market for secondhand goods in the US would surpass that of the offline channel. The value of the internet resale market was USD 56.1 billion in 2020 and is anticipated to reach USD 195.7 billion in 2030 (Mercari, 2021a). In the US 66.9% of private resellers sell through online channels (Mercari, 2021b). E-commerce, resale, secondhand e-commerce and online C2C transactions are gaining space in Europe too. In selected European countries secondhand purchasers' average was 46% (Statista, 2022). In 2021, 20% used the Internet to sell good in the EU (Eurostat, 2022a). Most popular online stores for secondhand items in the UK are Ebay, FB Marketplace and Depop (Statista, 2021a) while in Germany, eBay Kleinanzeigen, eBay and Vinted (Statista, 2021b). Compared to January 2020, the number of listings in European horizontal C2C markets (which offer a broad range of categories) increased by more than 50% in the case of the French Leboncoin and the English Gumtree, 46% in the German eBay Kleinanzeigen (Goddevrind et al., 2021). McKinsey's 2021 survey on C2C e-commerce shows that more than 60% of respondents from the UK, Germany and the Netherlands reported, they bought at least one secondhand item online in the Fashion and Family category in the 6 months prior to the survey. In 2020, this category was expected to be worth EUR 6 billion, and an annual growth of 35% is forecasted until 2025. Similarly, in the US the most popular secondhand products bought and sold online in 2021 are clothing, books, electronics and furniture (Jungle Scout, 2021). According to Google Trends, the word "marketplace" has been on a dynamic increase since September 2018, and peaked in November 2021 (Google Trends, 2022a). *Marketplace* as a topic has also been becoming more and more popular, especially since January 2016. *Online marketplace* as a topic has been increasingly popular among Google-searches as well, mainly since March 2019 (Google Trends, 2022b). Similar trends apply to Hungary too: since January 2018, there was a dynamic increase in Google searches for the term "marketplace" (Google Trends, 2022c). The most related queries

for the term “used” in Hungarian include bicycle, iphone, furniture, lawn mower, Playstation, Xbox, TV, couch, and sofa set (Google Trends, 2022d). This shows a parallel to the international examples of online sold used items’ top product categories. Jófogás.hu was the most popular e-commerce website in Hungary in the Classifieds category with an average of 14,3 million monthly total views between July and September of 2022 (Similarweb, 2022d). However, based on Google searches, the interest for “Jófogás” has been decreasing since May 2016 (Google Trends, 2022e). In Hungary in 2021 the percentage of people participating in e-commerce was equal to the EU average at 66% and it experienced one of the top 4 biggest increases in this number compared to 2016 (Eurostat, 2022b). The share of individuals using the internet to sell goods or services was 27% (Eurostat, 2022c). The social network penetration in Hungary was 77.02% in 2021 and is expected to grow to 80% in 5 years (Statista, 2021c). This is relevant because “marketplace Facebook” is the topmost related query to the term “marketplace” in Hungary (Google Trends, 2022c). Between 2018 and 2021, the percentage of those who purchased online in the 3 months doubled from 28.8% to 57.6% (Hungarian Central Statistical Office, 2021).

According to Deloitte’s Global 2022 Gen Z and Millennial Survey, the Gen Z and the Millennial generations’ top concerns are cost of living and climate change (Deloitte, 2022). At the same time, according to BCG’s report (Estribeau et al., 2022), affordability and value, and sustainability are the key drivers of secondhand consumption. This shows that Gen Z and Millennial generations could be interested in secondhand consumption, since these generations’ top concerns align with the reasons why consumers are choosing pre-owned products over new ones. The apparel resale market is found to be led by Gen Z (both in buys and sales), closely followed by Millennials (Estribeau et al., 2022). Similarly, McKinsey’s 2021 study on C2C e-commerce suggests that in the Fashion and family product category Gen Z accounts for some 43% of market volume today and their share is expected to rise to 47% by 2025 (Goddevrind et al., 2021). In the EU in 2021, regarding education level, the percentage of online shoppers among those who participated in higher education is almost 90%, while among those with a lower level of education it is only 55%. Around 80% of employees and students are online shoppers, however, only 60% of retired and unemployed people ordered goods and services for private use through the internet in the 12 months prior to the survey (Eurostat, 2022b).

One of Facebook's largest groups is called *Weird (and Wonderful) Secondhand Finds That Just Need To Be Shared* with more than 2.7 million members from all around the world, which shows how the topic of secondhand can adapt to technological changes and keeps on trending. In Hungary there are several Facebook Groups dedicated to buying and selling secondhand items between private persons, such as *IKEA pre-owned furniture* (414.6 thousand members), *Cheap branded clothes* (124.2 thousand members), *Iphone buy-sell-exchange* (111.3 thousand members), *FREE classified ads, Buy and Sell* (127.7 thousand members), *Used household appliances for sale* (136.1 thousand members), *Furniture-for-sale* (97.4 thousand members). These are private groups where Facebook users are posting text, photo, or marketplace-based advertisements to sell their used products. These exchanges mainly happen through personal meetings and cash payments, hence are almost impossible to track, which increases personal and financial security risks. The fact that these Facebook groups are nevertheless popular prove that in Hungary there might be a market gap for platforms that offer more secure ways to buy and sell pre-owned products from and to other private persons. The potential for this market gap is further proven by the previously mentioned fact, that Google searches for the most visited e-commerce classified site are decreasing.

In 2022, the share of individuals whose main concern is inflation rose from 26% to 53% which is the 5th highest among 29 participating countries (Ipsos, 2022). In 2019 the share of participants from Hungary who had concerns about the effect of non-recyclable plastic waste on the environment was above the world average at 82% (Ipsos, 2019). In 2018, 93% of Hungarian participants believed that climate change is occurring worldwide (Ipsos, 2018). These show, the Hungarian population's concerns align with the main reasons behind people choosing secondhand items.

In Hungary the key concern towards online shopping is that individuals prefer to shop in person, like to see products and loyalty to shops or force of habit. However, between 2019 (Eurostat, 2020a) and 2021 (Izba Gospodarki Elektronicznej, 2022), the share of this concern among consumers dropped by 7 percentage points (to 21%). This means people are becoming more accommodating with technology and the key concept of online shopping. This is further supported by the fact that only 8% reported to be less likely to purchase goods and services online due to concerns about security issues (European Commission, 2020). Among those who choose not to purchase goods online, in 2019, payment security concerns were the main reason

for 14% (Eurostat, 2020b) and 12% had trust concerns about receiving or returning goods, complaint, or redress (Eurostat, 2020c). This shows, Hungarians are open to online shopping options, but the current alternatives are not entirely convincing customers to overcome their concerns.

### 1.3. Problem Statement

Based on the demographic data, young customers who participate(d) in higher education and are students or employed, could be highly interested in purchasing secondhand items online. Trends are similar to pioneer countries in re-commerce, thus although the available data of Hungarian C2C e-commerce and re-commerce is not always extensive, benchmarking can be used with strong confidence. Internet, social media and e-commerce penetration is high in the country, and people's considerations are aligned with the value proposition of buying secondhand. Financial concerns are likely to become increasingly relevant in the next period, since inflation is rising, utility bills and the price of food and fast-moving consumer goods are going up, and real disposable income is decreasing (Virovacz, 2022). The decreasing searches for the most popular classifieds website and the high membership count of unstructured buy-and-sell Facebook groups are suggesting a market gap for C2C re-commerce platforms. Facebook Marketplace has many weaknesses compared to C2C platforms, e.g. the location filter is not sophisticated enough, only some product categories have subcategories but even those are too broad, and ads are not generalised enough to provide uniform information on products. Neither Facebook Marketplace nor Jófogás provides safety to the users: they are just connecting buyers with sellers, whom then have to figure out how to exchange goods, which in most cases results in no track records of the transactions.

It has been suggested before – however, only by a few – that C2C marketplaces could benefit from integrating social network elements and characteristics (Rong et al., 2021; Huang et al., 2017). This study aims at exploring how the behaviour and preferences of Hungarian consumers of C2C marketplaces would be influenced by an existing social relationship between them and their peers in C2C transactions. Discussions on the sharing economy, collaborative consumption and C2C transactions have sparked academic disagreement between researchers regarding the most efficient pricing methods (Aggarwal & Zhang 2006; McGraw et al., 2003; Halpern 1997; Mandel 2006), payment methods (Huang et al., 2020; Huang & Savary, 2022) and product

related risks (Rong et al., 2021; Li et al., 2018) of C2C marketplace exchanges. In order to establish a potential future feasibility study for C2C marketplace innovation with the inclusions of integrating social network features, the mentioned main characteristics of such transactions are researched in this paper. Based on the existing literature and the industry characteristics, the research questions of this paper are the following:

**RQ1:** Do personal relationships between parties influence deals on C2C online marketplaces?

**RQ2:** Does the level of relationship influence willingness to do transactions on C2C online marketplaces?

**RQ3:** Does the level of relationship influence the preferred pricing method on C2C online marketplaces?

**RQ4:** Does the preferred payment method in C2C deals change with the level of relationship between the parties?

**RQ5:** Does the level of relationship influence the amount of product related risks that are perceived to be acceptable by participants of the transaction?

## 2. Theoretical Framework

### 2.1. The Sharing Economy

Bartering, lending, sharing, all of these are concepts have been part of our everyday lives since the first forms of human communities. However, the rise of the sharing economy is not a return to old theories and practices, since the most important enablers of what is meant under the expression in the 21st century is the Internet and further constantly developing digital technologies (Sutherland & Jarrahi, 2018; Zervas, Proserpio, & Byers, 2014; Botsman & Rogers, 2010; Belk, 2014). The strong connection between the sharing economy and digital technologies is further supported by the fact that 91% of the publications on sharing economy reviewed by Sutherland & Jarrahi (2018) “*addresses the role of digital technology as an element of the SE [sharing economy]*”. The same study found that the dynamic increase of publications about sharing economy started around 2008. A couple of the most important reasons behind this is the 2008 economic crisis, when many people had to look for more affordable ways of consumption, and the rapidly spreading social network (Oh & Moon, 2016; Barnes & Mattsson, 2017; Botsman & Rogers, 2010). The literature on the sharing economy is not mature and organised enough to provide a clear definition, however, many scholars and researchers agree that social implications, trust, matching demand with the supply of un(der)used products and services, the role of a digital intermediary platform, and peer-to-peer transactions are all keystones of the concept and its interpretation today (Oh & Moon, 2016; Sutherland & Jarrahi, 2018; Botsman, 2013; Dillahunt et al., 2017).

One of the most widespread ways of collaborative consumption are C2C exchanges (Parguel et al., 2017). Based on Botsman & Rogers’ (2010) definition, redistribution markets are a form of collaborative consumption where the owner of a product transfers this ownership to another person, possibly in exchange for other goods or money. Most widely known examples for the sharing economy are Uber and Airbnb. Around 20%-20% percent of the studies revised by Sutherland & Jarrahi (2018) in the area of the sharing economy are about Uber and Airbnb. Other common examples include Lyft (similar to Uber), Netflix, Spotify and other streaming services. These most commonly mentioned examples do not belong to the category of redistribution markets, since transfer of ownership does not happen. Netflix and Spotify users do not have to interact with another person to use the app, while Uber and Lyft do not let users choose between whom to interact with, and for these reasons, in these cases it does not make

sense to research whether social relationships between participants of these transactions have an effect on the outcome of the transactions. This study aims at exploring potential influences of prior acquaintance between peers on C2C platforms where private persons are exchanging pre-owned items for money. Thus, the first and main hypothesis of the research is the following:

**H1:** Prior personal relationship between the peers influences deals on C2C online marketplaces.

In the following subchapters, the relevant literature on the role of different level social ties is explored in three defining factors of C2C digital transactions, such as the pricing method, the payment method and the perceived product-related risks.

## 2.2. Level of Acquaintance

Researchers of the topic (Granovetter, 1973, 1983; Kavanaugh et al., 2003; Grayson, 2007; Li et al., 2018) are differentiating between the level of the relationship between the peers. Kavanaugh et al. (2003) separates strong ties, weak ties, and potential ties, where the first means exclusive communities with strong trust between the parties, regular daily contact and high flow of information sharing, while in the second case, trust, interaction and information flows are on lower levels. Potential ties do not know each other. Granovetter (1973, 1983) similarly uses the expressions of weak and strong ties. Grayson (2007) creates three groups: close friends, acquaintances and strangers. Li et al. (2018) talk about good friends, simple friends and strangers. Similarly, but not identically, in this study the levels of relationship are taken into consideration. The influence of being friends or strangers is examined, however, the group in the middle, weak ties, are further specified into being acquaintances by having at least one mutual friend. This is because of the overwhelming spread of social media (in 2022, 63.1% of the global population uses social media (We Are Social, DataReportal and Hootsuite, 2022)) has highly affected how people think of and classify their social connections. On the most popular social media platforms (Instagram, Facebook, Twitter) users see how many mutual friends they have with another user, and for example LinkedIn is not only showing second-degree connections, but third as well. For this reason, second- (or third-) degree connections are easier to find, background-check and contact. At the same time, whether two people have strong or weak ties is

much less obvious, than the question of knowing each other or having a mutual friend. The perception of the former might differ between the two parties. Websites and apps where people can decide to “Friend” or “Connect” people they know, cannot really provide information on the strength of the relation between the two parties, since it is a question of emotions and perceptions, thus more subjective than the simple fact of knowing each other or not, or being second-degree connections through a mutual friend. This study examines three levels of connections: friends (“we’ve known each other for at least a year, and we talk at least quarterly”), second-degree connections (“we have at least one mutual friend who mentioned us to each other and we maybe met a few times”) and strangers.

As mentioned earlier, an existing relationship between the parties trading with each other might have positive and negative effects on the deal thus it is not obvious how prior relationships in a C2C online marketplace setup are going to influence transactions. Trust is even more required when purchasing secondhand items online, compared to for example, B2C online transactions or in-person C2C deals.

Barabási (2018) talks about the “small world” phenomenon which suggests that individuals are more likely to trust others who are connected to them through their social networks, as these connections can provide a sense of familiarity and shared values. He further argues that scale-free networks do not have an "average" number of connections. The number of connections per node can vary widely, with a few nodes having a much larger number of connections than the rest. Individuals and organisations can increase their chances of success by identifying and connecting with hubs within their networks, as these nodes are often central to the network's overall success. This is only achievable by providing the infrastructure for the information flow regarding connections in social networks. In this study, it is researched how providing information on the social relations between the buyers and the sellers might influence the likelihood of transactions. The related hypotheses are the following:

**H2a:** Buyers are more likely to do transactions on C2C platforms when they are provided with the information that they are first-degree connections with the seller, compared to when they are told that they are strangers.

**H2b:** Buyers are more likely to do transactions on C2C platforms when they are provided with the information that they are second-degree connections with the seller, compared to when they are told that they are strangers.

### 2.3. Influencing Factors of Online C2C Deals

#### 2.3.1. The pricing method

Participative pricing, as opposed to fixed pricing, means the buyers can influence the final price for a product (Chandran & Morwitz, 2005). Similarly to the concept of sharing economy, participative pricing has its roots in ancient history (e.g. bargaining for better deals at the fairs of Forum Romanum), however, it gained a whole new meaning with the emergence of the Internet. The technological advancements radically increased the range and volume of products available and the number of buyers and sellers who can interact with each other and decreased the time and money needed for such procedures. According to Kim et al. (2009), participative pricing mechanisms might be organised into three groups: negotiations (where the parties are bargaining over the price of the product), pay-what-you-want (where the buyer offers any price they want and the seller automatically has to accept it) and name-your-own-price (where, similarly to pay-what-you-want, the buyer offers a price but here, the seller can decide whether to accept it or not). Based on the study conducted by Chandran & Morwitz (2005), participative pricing (as opposed to fixed pricing) increases buyers' perception of control which increases their intention to purchase. Buyers experience a higher level of fairness and satisfaction (Haws and Bearden, 2006), and sellers are provided with information on consumers' willingness-to-pay (Spann et al., 2004). This way a number of deals that would otherwise fail due to different WTAs and WTPs might be realised. This is because by gaining knowledge on the other party's preferences, users get a chance to slightly adjust their preliminary ideas and compromise to have a successful deal. The study of Kim et al. (2009) hypothesised that fairness, altruism, satisfaction and loyalty increase the price buyers pay in pay-what-you-want models. Although their study does not talk about social relationship between the negotiating parties, what is interesting about these four factors is that in many studies about negotiations between different levels of acquaintances, fairness, altruism, satisfaction and loyalty are highlighted as characteristics and consequences of social ties (Trivers, 1971; Mandel, 2006; McLean Parks et al., 1996; Granovetter, 2005; Li et al., 2018). This would mean an indirect connection between the effectiveness of participative pricing

and the relationship between the negotiating parties. The study of DiMaggio & Louch (1998) and Granovetter (2005) support this idea in which they found that people tend to choose dealing with a friend because they believe friends will provide them with better prices and they also tend to be more satisfied with the deal.

Halpern (1994) provides insight on a direct connection between friendship and outcomes of price negotiations. She found friends are bargaining less intensely than strangers and are charging less for people they know. When purchasing from a friend, people feel like they received fairer information compared to a stranger and are more likely to let received information influence the price they pay for the product, even though there was no significant difference in the quality of information during the experiment. This leads to the conclusion that when bargaining with friends, people are likely to be influenced by non-economic and non-rational factors. (Halpern, 1994)

Sellers asking for a lower price and buyers paying a higher one when dealing with friends means, they are more willing to compromise and however these two studies (DiMaggio & Louch, 1998; Halpern, 1994) do not further explain why friendships have these effects on business negotiations, they do imply that among friends there is a higher level of trust and feeling of fairness. This is consistent with the reasoning provided in the previous subchapter about the positive effects of existing social relationship between peers, just as well as with the fact that people are more likely to let social norms of fairness and generosity influence their attitudes when they have a closer relationship with the other person (McLean Parks et al., 1996). Hence the hypotheses to be tested are:

**H3a:** When the buyer and the seller have some kind of a prior social relationship, the buyers are more likely to trust the seller's pricing, thus feel less need to negotiate.

**H3b:** Participative pricing results in final prices that are more equal compromises between the initial WTA and WTP when the negotiating parties do not have a social relationship.

### 2.3.2. The payment method

In C2C e-commerce, traditional payment methods include paying with a credit or debit card, through the platform, while P2P payment methods are executed through a third-party app (such as PayPal or Revolut) and peers are directly sending money to each other's accounts on these

apps. The main difference is that in the former case, peers have the marketplace platform between them as proxy, while in the latter they do not.

Paying for a product found online is influenced by trust in the seller, in the platform and in the Internet altogether (Huurne et al., 2017). The importance of trust is even more enhanced when private persons are exchanging their own products online, which derives from all components of these situations. First, when dealing with another person instead of a business, consumer protection is less assured, since both parties are actually the consumers of the marketplace, contrary to B2C deals, where the buyer is the consumer who is protected by rules and laws against the seller (Hausemer et al., 2017). Secondly, selling pre-owned products implies an uncertainty of the condition of the product (Fernando et al., 2018), and the endowment effect, i.e. the fact that the owner wants to sell it for more just because it's his / hers, also creates distrust (Morewedge & Giblin, 2015). Thirdly, the online nature of the transactions creates options for anonymity, which means less commitment is required, and it is easier to commit fraud (Ba et al., 2003). Users look for safety points, especially when it comes to finalising a deal by sending the payment. Opting for the platform itself as a source of protection, and thus choosing traditional payment methods, could be a solution, however, according to the study of Hausemer et al.(2017), there is a lack of uniform regulation in this area, which weakens the protection these sites can offer. At the same time, the study of Costello & Reczek (2020) confirms, that in C2C business models the feeling of community and the relevance of social factors extend to the point where users are more likely to sympathise with the other party in the transaction instead of the platform. This is because these platforms provide the opportunity for all users to become buyers and sellers hence both parties can see themselves in the other person's shoes. P2P payment methods are further strengthening the social context of the situation, since they indicate a personal communication between the parties. Huang & Savary (2022) found that P2P payment methods have so strong effect on deals that it does not require the peers to be acquaintances to increase the likelihood of them happening. In the previous subchapter it is described how friendship might attenuate the endowment effect. The hypothesis of this subchapter aim at exploring the potential connections between this phenomenon and P2P payment methods:

**H4:** The buyers on online C2C marketplaces are more likely to choose direct payment methods when they have a prior social relationship with the other party.

### 2.3.3. The product risks

Many sources of risks have been introduced that influence C2C deals, however, the most tangible one is yet to be described: the object of the transaction itself. Jacoby & Kaplan (1972) distinguish between performance, financial, social, psychological and physical risks. From a performance point-of-view, the pre-owned nature of the products bring in a new aspect: while in the original study performance risks were related to not being familiar with a brand, in this case, not being able to determine the actual condition of the product further increases this liability (Fernando et al., 2018). The financial aspect's increased relevance is twofold. First, the actual financial risk is higher in online (anonym) C2C transactions than in offline and/or B2C transactions, because this new way of purchasing still lacks common regulations (Hausemer et al., 2017) and the potential of scams is also higher (Ba et al., 2003). Secondly, the perceived risk is higher: there is a significant number of consumers who are distrustful of online shopping (partially due to the two previous reasons, but simply because of differing digital literacy as well). Social risks related to the process of C2C transactions were already partially discovered in the previous subchapters, while product-related social risks might simply derive from the fact that in the eyes of many people, owning secondhand products is still a sign of bad financial status (Lo et al., 2019). Psychological risks are somewhat related to social risks — consumers might be afraid of decreasing self-respect, however, fears of unsafety are important as well due to the potential personal meeting with strangers or having to invite them into their homes (Huang et al., 2019). Physical risks are also infer from questions related to personal safety (i.e. having to meet in person and provide personal data to the other party such as address and phone number), and the potential malfunction of pre-owned products or the personal hygiene concerns related to other secondhand products (Silva et al., 2021).

Most of these risks are mitigable by obtaining reliable and detailed information (e.g. on product condition, the identity of the other person, the steps of the process, etc.). Several studies found that people are more likely to ask for and trust information from people they know (DiMaggio & Louch, 1998; Halpern, 1994). Rong et al. (2021) researches whether social information disclosure of friends in common is influencing conversion rates on C2C e-commerce platforms. They base their research questions on the trust-privacy paradox (i.e. people need and want to gain truthful information but they do not want other people to know what they are selling or purchasing). They found that providing full information on friends in common (i.e. who those

friends in common are) positively influences conversion rate, while partial information disclosure evokes negative attitudes due to privacy concerns. Li et al. (2018) found that when talking about high risk products, people choose to deal with their strong ties, while in the cases of low risk products, social connections were not that important. Thus, it might be stated that information gained from and about friends might positively influence C2C marketplace transactions, however, the form of this information and the way in which it is provided is not negligible. Hence the hypothesis is the following:

**H5:** When there is a prior social relationship between the parties, the buyers perceive product risks to be lower which increases their likelihood of purchase.

### 3. Methodology

To examine the effects of different levels of relationships between peers on the preferred pricing and payment method and perceived product risks, secondary and primary research was conducted. The secondary research includes the literature review in the previous chapter, the industry analysis from the introduction and secondary data collection on the prices of different product categories on the largest Hungarian C2C marketplace, Jófogás. This latter was required as an input to create the tools used for the primary data collection.

The primary data collection builds up from three studies. In all of these three studies Hungary-based and/or Hungarian people were asked, aged between 18 and 30, since they would be the target group for the potential future product.

In the first survey, the pricing and the payment methods were examined. Participants were asked to take a look at a product page and were told information on their fictional relationship with the seller of that product (i.e. whether they are strangers, friends, i.e. first-degree connections or second-degree connections). Afterwards they were asked to decide whether they would like to negotiate a price with the seller (participative pricing method) or ask for a fixed price from the seller, furthermore they had to choose whether they would like to send the payment to the seller through e.g. Revolut (direct payment method) or through the platform (traditional payment method). Afterwards, participants were asked on the likelihood of actually going through with the purchase. Participants were randomly assigned to products from the three most popular product categories that are present on C2C marketplaces (i.e. clothes, furniture and consumer electronics), in three different value categories (under 10 euros, between 10 and 50 euros and over 50 euros, based on the secondary data collection from Jófogás). Showing different products to different people controlled for product related reasons why participants would choose certain options regarding pricing and payment methods. Participants were asked several times throughout the survey to imagine that they are currently looking for a product similar to the one shown to them on the product pages. Demographic questions were also asked.

Secondly, the product related risk perceptions were examined. Based on Jacoby & Kaplan (1972), participants were asked about their overall risk perception and the five aspects of it, such as financial, physical, psychological, social and performance risks. Similarly to the previous case, different value products from the three most popular product categories were randomly assigned to participants. The situation was shortly described as that they are currently in the

process of buying this product from another person online. Every participant had to provide their insights on three scenarios: one time they were told further information that they are dealing with a stranger, then a friend, and lastly, with someone they have mutual friends with. In each scenario they were also asked about the likelihood of purchase, and demographic data collection also took place. In both surveys there were two screening questions. Namely, whether the participant has bought anything online before and whether they are Hungarian and/or are living in Hungary, since the research aims at discovering consumer preferences and behaviours in the Hungarian market.

The third study was an experiment. First, two photos of two products were sent to each participant through the most popular messaging app in Hungary, Facebook Messenger (National Media and Infocommunications Authority (Hungary), 2022). The participants had to tell their initial WTAs about these products. Afterwards, they were sent two photos of two other products, and they had to send back their initial WTPs. Next, Messenger groups were created for pairs. Each participant was assigned to two pairs: once with someone they knew and once with someone they did not. They were told further information in these groups that they have to sell the products they “own” to the other person. They were asked to negotiate prices that are acceptable for both of them. They were also told that later on they can keep the products or decide to sell, exchange etc., to make sure that the experiment is as similar to real life as possible. All of the products’ value ranged between 2 euros and 12 euros. After providing the instructions, they were left in the group discussion with just the two of them, so the digital presence of a moderator did not influence the process and the outcome of the negotiation. By the end of the experiment, information was generated related to 24 products and 12 discussions. Information about the products include an initial WTA, initial WTP and a final selling price, while information regarding the discussions consists of the relationship between the two negotiating partners, whether the sales were successful, the total number of messages exchanged related to the product sales, and whether joking and other, unrelated personal topics were included in the discussions.

## 4. Results and data analysis

### 4.1. Pricing and Payment

#### 4.1.1. Descriptive analysis

The survey measuring preferred pricing and payment options was started by 148 participants and resulted in 56 complete and relevant results. All of the participants passed the screening questions. Three fourths of the participants belong to Generation Z. The rest of the participants belong to the Millennials. Around 70% of the participants are female, while the rest, male. Regarding online shopping behaviours, more than half of the participants shop online several times a month, while a more than the third are shopping online several times a day and 11% shop online every week. Almost half of the participants' highest level of education is Master's degree (ongoing or finished), 43% is currently enrolled or has finished a Bachelor's program. More than half of the participants are students, 31% are employed full-time, while 15% are employed part-time.

Each participant has been presented with three scenarios and they had to answer three questions regarding each of these. Questions were asked about preferred pricing and payment options, and the likelihood of purchase. Overall, 58.6% chose fixed pricing, i.e. that they would prefer if the seller set the price and there were no negotiations, while 41.4% chose participative pricing. Around 35% chose traditional payment option (meaning that they would prefer to pay the platform that will then send the amount to the seller), while around 65% would have preferred paying directly to the seller through direct money sending option.

#### 4.1.2. Multivariate techniques

In order to analyse whether the social relationship has an effect on the willingness to purchase, a Repeated Measures ANOVA analysis was conducted, because participants were asked about three instances: in the first instance they had mutual friends with the seller (i.e. they were second-degree connections), secondly, they knew the seller (i.e. they were first-degree connections) and lastly, they did not know the seller, nor had they mutual friends.

In the Test of Sphericity, the significance is higher than the critical 5%, hence the homogeneity of variances is not rejected. At the same time, all the Tests of Within-Subject Effects have a significance close to zero, which means the equality between the means of likelihood of purchase

can be rejected in all three types of social relationships. Hence the relationship between the seller and the buyer does have a significant effect on buyers' likelihood to purchase. The Pairwise Comparisons show that the differences of means are significant in all cases. The mean likelihood of purchase was the highest, when participants were told that they know the seller personally. Answers were provided on a 1-5 scale and the mean was 3.89, which is closest to the "Moderately likely" option. When participants were told that they do not know the seller, but they have mutual friends with her, the mean turned out to be 3.52, which is still closer to the "Moderately likely" option, while in the case of no relationship assumed between the parties, the mean was 2.91, which is the closest to the "Not likely nor unlikely" option.

To examine the relationship between the social connection and the preferred pricing and payment methods, Chi-square tests were used. When analysing first-degree connections and pricing methods, the Chi-square tests show that an existing first-degree connection between the parties is not independent from choosing participative pricing as preferred pricing method. The Phi value, that is significant, shows a moderate negative relationship, meaning that buyers in case of an assumed first-degree connection with the seller were less likely to choose participative pricing over traditional pricing. Testing the association between knowing the seller and preferred payment method, all the P-values show significant relation between the two variables. The Phi value shows a strong positive relationship between the buyers being told that they know the seller and choosing direct payment options (i.e. sending the payment directly through Revolut, PayPal or other direct options over the traditional payment method, when the platform handles the money transfer).

In the next two tests, being second-degree connections and preferred pricing and payment methods were tested. Based on the P-values, neither of these cases showed a significant relationship. This means that there is no significant association between having mutual friends with the seller and choosing participative pricing over fixed, nor with choosing direct or traditional payment method.

In the third instance both preferred pricing method and preferred payment method had a statistically significant association with the parties being strangers. Based on the Phi value, there is a moderate positive relationship between opting for participative pricing, hence participants were more likely to want to have a say in the price of the products. When examining preferred payment methods, a strong negative relation might be observed between being strangers and

choosing direct payment options, since the Phi value is -0.469, hence no social relationship meant a motivation for using traditional payment methods.

To examine which variables have an effect on the likelihood of purchase, a stepwise linear regression was conducted. A total number of seventeen independent variables were included: the level of social relationship between the parties, the chosen pricing and payment methods, the product category, the product value category, gender, age group, frequency of online shopping, education and occupation. All variables were removed from the model, except direct payment option and social relationship variables. The model is significant. The collinearity statistics show tolerance higher than 0.4 for each variable, and the Condition Indexes in the Collinearity Diagnostics table are also all below 15, hence there are no multicollinearity issues. Since all three variables are measured on the same scale, unstandardized betas can be compared to gain insights on the strongest influencer of likelihood of purchase. The buyers being told the information that they are first-degree connections with the seller had the strongest effect, followed by having mutual connections, and lastly, choosing direct payment. The R square of the model is only 0.17, which means that more than 80% are to be accounted for.

## 4.2. Perceived Product Risk

### 4.2.1. Descriptive analysis

The survey exploring the relations between perceived product risks and the social relationship between the parties was started by 110 people which resulted in 45 complete and relevant answers. One third of the participants identify with the male gender, the rest with the female, while 35% of them belong to Generation Y, the others to Generation Z. Almost half of the participants shop online a few times a month and 12% purchase something online every week. The highest education of 6% is high school, while for 40%, it is Bachelor's degree, and almost half of the participants has a Master's degree. Regarding occupation, 44% are students, 29% are part-time employees, and 27% are full-time employees.

Similarly to the previous survey, participants were asked about three scenarios. They were shown a product page of a pre-owned item, with the information that they were first-, then second-degree connections with the seller, and lastly, that they were strangers.

#### 4.2.2. Multivariate techniques

The analysis started by examining the effect of different types of product risks on the overall product risk and likelihood of purchase separately in the three different scenarios. When parties are first-degree connections, the mean of overall risk perception was 2.47 (on a 1-10 scale).

Linear regression was used, the R squared is 0.662 and the model is statistically significant. The only significant variable is perceived financial risk. There are no multicollinearity problems. To examine the effect of different types of perceived risks on the likelihood of purchase, another linear regression was run. The mean of the likelihood of purchase is 6.62. This model's R squared is 0.411 and model is significant. There are no multicollinearity problems and there is one variable that has a significant effect on the likelihood of purchase: performance risk. Expectedly, it has a negative effect on the likelihood of purchase.

The same analyses were conducted in the scenario of second-degree connections. The mean of the overall risk perceived is 3.13. The R squared is 0.698, the model is significant. There are no multicollinearity issues. Performance risk, psychological risk and financial risk had significant impact on overall risk. Based on the unstandardised betas, performance has the first, financial the second, and psychological risk perceptions the third strongest effect. Next, the effect of different kinds of risk perceptions were analysed on the likelihood of purchase. The R squared is lower. The only statistically significant variable is physical risks.

In case of strangers, the mean of the overall risk perception was 5.89. The R squared was 0.573 and the model is statistically significant. Only financial risk perceptions had a significant effect on the overall perceived risk. The impact of different kinds of risk perceptions on the likelihood of purchase were also examined but none of the individual risk types were found to be statistically significant.

Interaction variables of types of product risks were created with the different levels of relationships. By using the relationship variables as moderators and adding the interaction variables, altogether six additional linear regressions were conducted.

When including first-degree connection as moderator and the interaction terms between different types of risks and first-degree connection in a linear regression with the dependent variable being overall risk, the R squared is 0.741 and the model is significant. The significant coefficients include performance risks, psychological risks, financial risks (all of them with positive coefficients) and the interaction variables between first-degree connection and physical risk

(with an unstandardized beta of -0.456). This latter means that when the parties know each other, the physical risk perception reduces overall risk perception more strongly, than in the other two cases. When checking for their effect on the likelihood of purchase, the R squared is 0.462 and the model is significant, however the only significant variables are the performance, physical, and overall risk perceptions. The negative coefficients mean that they decrease the likelihood of purchase.

Next, second-degree connection was the moderator and the interaction variables accordingly were added to the model. When using overall risk as the dependent variable, the R squared is 0.742 and the model is significant. Financial and psychological risk perception variables are significant, along with the interaction variables of second-degree connection and financial risk perception and second-degree connection and performance risk perception. The interaction variable between financial risk and second-degree connection has a negative coefficient, meaning that compared to the other cases, being second-degree connections reduces overall risk perceptions more strongly. The other interaction variable has a positive coefficient, hence compared to the other two scenarios, performance risk perception has a more intense increasing effect on overall risk. It is important to note that these tests are unable to show compared to which other cases is there a significant difference. When using likelihood of purchase as a dependent variable, the R squared is 0.462 and the model is significant. The interaction variables are not significant, only the performance, physical and overall risks.

When the moderating variable is strangers, interaction variables are created accordingly and the dependent variable is the overall risk, the R squared is 0.719 and the model is significant. Financial and performance variables are significant. There is one significant interaction variable, which is between the stranger and the psychological risk variable. It has a positive coefficient, which means that psychological risk has a stronger effect on increasing overall risk perceptions. With the likelihood of purchase as dependent variable, the R squared is 0.498 and the model is significant. The significant coefficients are performance, physical and overall risk perceptions and the interaction variable between strangers and psychological risk perception. The coefficient is negative, which means that when the parties are strangers, psychological risk perceptions have a stronger negative effect on the likelihood of purchase, compared to when there is some kind of social relationship between them.

Seven Repeated Measures ANOVA tests were also conducted. When examining the overall risk between the scenarios, the results of the multivariate tests indicate that the type of relationship between the buyer and seller has a significant effect on the perceived overall risk. The test for sphericity demonstrates that the assumption of homogeneity of variance is not violated, as the P-value is above 5%. The Tests of Within-Subjects Effects show that there is a statistically significant difference between the means of the various types of relationships, as the P-value is below 5%. It is revealed that the difference in means of overall perceived risk is significant between the buyer and seller being first-degree connections or strangers, as well as between the buyer and seller having mutual connections or being strangers. The difference in means of overall perceived risk between the buyer and seller being first or second-degree connections is not statistically significant.

The results of the second analysis show significance and the acceptance of sphericity. The table of Test of Within-Subjects Effects show statistical significance. Based on the Pairwise Comparisons the difference of means of likelihoods between all three scenarios are significant, with first-degree connection scenario having the highest mean at 6.6, second-degree connection scenario the second highest, at 5.5, while being strangers has the lowest mean at 3.5, which already means that the buyers would not be likely to purchase the product.

Regarding financial risk perception, sphericity can be accepted, and the model is significant. There are significant differences between all scenarios. The lowest financial risk perception belongs to the scenario where the parties know each other (2.13), the second lowest to the one where they are second-degree connections (2.89), and the highest to the one where they are strangers (5.2).

In the case of performance risk, the P-value of the Test of Sphericity is below 5%, hence it cannot be accepted, however, the alternative tests in the Tests of Within-Subject Effects table show significance, thus the results can be interpreted similarly to the previous situation. The Pairwise Comparisons show significant differences between the means of each scenario. The mean of performance risk perception is the lowest when the parties are first-degree connections (2.27), second lowest when they have mutual connections (3.53) and the highest when they are strangers (4.96).

When examining physical risk perceptions, similarly to the previous case, sphericity is rejected, however, the alternative tests have a P-value below 5%. The Pairwise Comparisons show

significant differences between the means of each scenario. The lowest risk perception stands when the parties know each other (1.58), the second one is when they are second-degree connections (2.27) and the highest when they are strangers (3.33).

Regarding perceived psychological risk, sphericity can be accepted and the Test of Within-Subjects Effects, when sphericity is assumed, is below 5%. The Pairwise Comparisons show that the difference between the means of first and second-degree connections is not statistically significant, nor is the one between the means of second-degree connections and strangers. Hence here the only statistically significant difference is between the means of the psychological risk perception of buyers when they are in first-degree connection with the seller (1.8) and when they are strangers (2.8).

Lastly, regarding social risks, none of the Pairwise Comparisons are statistically significant, hence here a statistically significant difference between the means cannot be assumed.

### 4.3. Experiment Results

Twelve people participated in the experiment, eight women and four men. They are all aged between 22 and 28. Four of them are working students, five of them work full time and three of them are full time students. Half of them completed their bachelor studies, while the other half their master's. All of the products that were the objects of the negotiations had a cost value between 2 and 12 euros.

The WTA values had one outlier 55 000 HUF (135 euros), while the rest of them fell between 1500 HUF (4 euros) and 16 000 HUF (40 euros). The WTP values were between 500 HUF (1.2 euros) and 7000 HUF (17 euros). Without the outlier, the mean of the WTAs is 4687 HUF (11.7 euros), while the mean of the WTPs is 2004 HUF (5 euros). In order to check whether there is a significant difference between the means of WTAs and WTPs, a Paired Samples T-Test was used. The two-sided P-value is 0.003, which means that we can reject the null hypothesis that these means are equal.

The ideal compromises were assigned to each products' WTAs and WTPs, by taking their means. After the negotiations were concluded and final prices were added to the tables, the differences between the final prices and the ideal compromises were calculated. In order to standardise results, the absolute values of differences were divided by the ideal compromise prices, these were called the difference ratios. To compare difference ratios between negotiation

pairs who knew each other and those who did not, an Independent Samples T-Test was conducted. It is important to note, that when the difference between WTA and WTP values were tested, a Paired Samples T-Test was used, since each participant provided both values. When the different pairs are compared, the Independent Samples T-Test is used, since each pair was different. The mean of difference ratios in the case of pairs who knew each other is 0.23, while in the case of strangers, it is only 0.11. The test for equality of variances cannot be rejected. The two-sided P-value shows significance between the difference of the means of difference ratios of negotiating pairs who knew each other and those who did not.

A new variable was computed that holds information on whether the difference between the ideal price and the final price is positive or negative. If the final price is higher than the ideal one, it means that it is closer to the WTA, hence the negotiation favoured the seller. A Chi-square test was used to determine whether there is an association between the difference being positive and the negotiating pair knowing each other. The P-values show significance and the Phi-value indicates a strong positive association between the two examined variables.

#### 4.4. Hypotheses Testing

*H1: Prior personal relationship between the peers influences deals on C2C online marketplaces*

The analysis of all three studies prove this hypothesis to be true. The Repeated Measures ANOVA and the Linear Regression tests performed on the data collected from the first survey showed that the social relationship has a statistically significant influence on the likelihood of purchase. The Chi-square tests performed on the same data supported that there is a moderate relationship between the parties being first-degree connections or strangers and preferred pricing method, while there is a strong relationship between the parties being first-degree connections or strangers and preferred pricing method. From the Repeated Measures ANOVA tests conducted on the data collected from the second survey, it can be concluded that there is a significant difference between the means of overall risk perceptions and likelihood of purchase in the three different scenarios. The perceived risk of the transaction is lower in the case of being first or second-degree connections compared to being strangers, while the likelihood of purchase is significantly different between all three scenarios, with first-degree connections having the

highest mean, second-degree connection the second highest and strangers, the lowest. It is also important to note that the mean likelihood of purchase in the case of strangers is only at 3.5, which on a 1 to 10 scale means that on average, buyers would be less likely to proceed with the transaction than not.

***H2a:** Buyers are more likely to do transactions on C2C platforms when they are provided with the information that they are first-degree connections with the seller, compared to when they are told that they are strangers*

***H2b:** Buyers are more likely to do transactions on C2C platforms when they are provided with the information that they are second-degree connections with the seller, compared to when they are told that they are strangers*

These hypotheses are vindicated by the Repeated Measures ANOVA tests performed on the data collected in the surveys. The P-values showed a statistically significant difference between the means of likelihoods of purchase for the three different scenarios, with first-degree connection between the parties having the highest mean, followed by second-degree connection, and lastly, strangers. Based on the first survey's results, when there was a social relationship implied (either first or second-degree) between the parties, the mean turned out to be at "Moderately likely to purchase", while in the contrary case, the mean was at "Neither likely nor unlikely" to purchase. As mentioned regarding the previous hypothesis, the analysis performed on the data collected from the survey on product risks, the likelihood of purchase was significantly different between the three scenarios, with being first-degree connections having the highest mean, second-degree connection the second highest (both of these higher than the mean of the scale), and being strangers, the lowest.

***H3a:** When the buyer and the seller have some kind of a prior social relationship, the buyers are more likely to trust the seller's pricing, thus feel less need to negotiate*

The Phi values in the Chi-square tests showed a negative association between the parties being first-degree connections and the preference for participative pricing, whereas a positive one when the parties were said to be strangers. However, the hypothesis was only partially proven, since when the relationship between preferred pricing method and the parties having a second-degree connection was tested, the results turned out not to be significant.

In order to test whether buyers are more likely to trust sellers in financial questions when there is a social relationship between them, the results of the Repeated Measures ANOVA analysis conducted on the data collected from the survey regarding product risks should be considered. Since it brought a significant difference between the means of perceived financial risk in the three scenarios, it can be stated that when the parties have some kind of prior relationship, they perceive financial risks to be lower. Financial risks were described in the questions such as losing money on the transaction due to becoming a victim of fraud and not receiving the product after payment or paying too much for a product that in reality is not worth it. However, it should be added, that in the overall risk perception, perceived financial risk does play an important part in all cases, according to the results of the regressions analyses.

***H3b:** Participative pricing results in final prices that are more equal compromises between the initial WTA and WTP when the negotiating parties do not have a social relationship*

This hypothesis was tested through the experiment. Since those pairs' negotiations who did not know each other prior the experiment resulted in significantly lower difference ratios (i.e. the quotient of difference between ideal compromise price and the difference between the ideal and the final price), it can be stated that these bargainings brought more equal compromises between the initial WTA and WTP values. This result is consistent with the one from the first survey, in which buyers were more likely to opt for participative pricing in the scenario where they were strangers with the seller.

***H4:** The buyers on online C2C marketplaces are more likely to choose direct payment methods when they have a prior social relationship with the other party*

The hypothesis was partially vindicated by the Chi-square tests performed on the data obtained from the first survey. When testing first-degree relationships, a strong positive association was observed with direct, P2P payment methods, such as Revolut. At the same time, based on the Phi values of the Chi-square test performed on the buyer and seller being strangers and the preference for direct payment method, there was a strong negative association. However, the second-degree relationship did not have a statistically significant relation to the pricing method.

*H5: When there is a prior social relationship between the parties, the buyers perceive product risks to be lower which increases their likelihood of purchase*

As mentioned regarding previous hypotheses, Repeated Measures ANOVA tests were conducted to determine the significance of differences between means of perceived risks in different scenarios. There is a significant difference of means between each scenario in the cases of likelihood of purchase, financial risk perception, performance risk perception, physical risk perception. There is a statistically significant difference of means between at least one pair of scenarios in the case of psychological risk perception and the overall risk perception. The only risk type not showing any statistically significant difference of means between the three scenarios is social risk perception. Along these results, it might be concluded that altogether **H5** is vindicated as well.

## 5. Discussion and Implications

### 5.1. Summary of the Results

#### 5.1.1. Secondary research

There is a rising openness to purchase secondhand products online which is supported by the fact that in 2022, Mercado Libre had more than 90 million downloads, while Vinted had more than 30 million and OLX, Poshmark and Tokopedia were also downloaded 10-20 million times.

However, out of the most popular C2C shopping apps the majority is not available in Hungary (Appmagic, 2022). Regarding the target group of these apps it is important to note that in 2021, more than 80% of the users of Depop in the U.S. were under 30 (App Ape, 2022).

This upcoming group of consumers, Generation Z, is more and more open to secondhand options. The key reasons behind this are financial and sustainability considerations.

Financial considerations derive from the fact that these younger consumers usually have a tighter budget since they are either students or young professionals. At the same time, in the current economic situation in Europe, where food and energy prices are going up, many have to implement measures and changes in their day-to-day lives to save money.

The fact that sustainability as a topic is trending among these younger groups of users can be illustrated with the fact that on TikTok, which is mainly used by Gen Z and young Millennials, sustainability as a search word leads to videos with more than a hundred million views. By searching “save money” or “budget friendly” key expressions on the same app, videos with over 50 million views might be found. On Instagram, 14 million posts are tagged with the hashtag “sustainability”, while around a million posts are tagged with expressions related to saving money.

Garage sales and thrift stores are having their renaissance and despite their offline natures, are still highly advertised online, mainly through social media. Large brands, such as Asos, have their own secondhand and/or vintage stores (Asos Marketplace, 2022), while new applications are debuting that provide private persons with the possibility to sell their pre-owned products online (for example, Depop or Vinted (Depop, 2022, Vinted, 2022)). These generations of consumers, Gen Z and Millennials, are tech savvy, sometimes so much so that too many offline to-dos can deter them from continuing with the process, for example, having to take a phone call (Wriest, 2019). It should be highlighted that most C2C marketplaces have yet to fulfil their potential. Facebook Marketplace and other Hungarian sites such as Jófogás.hu, as well as larger

European platforms such as OLX, do not offer a user journey or user experience that could decrease the barriers to online secondhand shopping. Users perceive a high level of risk in terms of product quality and payment, and in many cases, these concerns are justified as the number of frauds in C2C re-commerce remains high. In Hungary, there are numerous non-official buy-and-sell Facebook groups with hundreds of thousands of members, where users advertise their belongings through text-form posts and sometimes a few photos (i.e. without using the Facebook Marketplace function to create ads). This suggests that the Marketplace function has not been effective in replacing these untraceable posts. However, if the Marketplace function was more widely used, it would likely not make a significant difference. Neither negotiations, payment, satisfaction measurement, nor customer service are integrated into the Marketplace in a generalised form. The same applies to most C2C sites. As a result, it is understandable that users view these deals as high-risk from the perspectives of performance, finance, and personal safety. These conniving factors provide the base for the questions, what innovations could enhance the current C2C shopping application market? The relevant literature already contains some suggestions about the potential ways of overcoming current barriers by exploiting the relevant elements of the social network theory. Barabási (2002) describes that people are more likely to trust and cooperate with individuals who are part of the same social network, or who have mutual connections, because they feel that they have something in common and that their goals are aligned. The social exchange theory suggests that trust is built through a process of reciprocal interactions between individuals. It is proposed that individuals are more likely to trust others who have demonstrated a willingness to act in their best interests and to return favours. Relations and associations between the status quo (i.e. the characteristics of collaborative consumption), the more material and economic aspects (such as the endowment effect or the perceived risk theory) and the more soft factors (e.g. the psychological implications of negotiations, social relationships, or the topic of social reputation) are being explored. All of these mentioned theoretical elements are glued together by the ultimate question of trust, which is also the root cause of the authoritative majority of barriers to C2C online shopping.

#### 5.1.2. Primary research

The results of the statistical analysis conducted in the first study indicated that the social relationship between the seller and the buyer has a significant effect on the buyer's willingness to

purchase and their preferred pricing and payment methods. Specifically, the mean likelihood of purchase was highest when participants were told that they knew the seller personally, followed by when they had mutual friends with the seller and were least likely to purchase when they did not know the seller and did not have any mutual friends.

The analysis also found that there was a significant negative association between having a first-degree connection with the seller and choosing participative pricing. This is consistent with the findings of Halpern (1994), that friends are bargaining less intensively. When being first-degree connections, buyers mainly opted for direct payment. There was no significant relationship found between having mutual friends with the seller and either preferred pricing or payment method. However, when the buyer and seller were strangers, there was a significant association between preferred pricing and payment method, with participants being more likely to opt for participative pricing and traditional payment methods.

The results of the second study are somewhat less exact, however, it is clear that risk perceptions are lower when there is an existing first-degree relationship between the parties, as well as having mutual friends compared to being strangers. The overall risk perception of a transaction is most influenced by performance, financial and physical risks. Some variables occurred to have more important role in different scenarios, e.g. physical risk perceptions were decreasing overall risk perception in case of first-degree relationship between the parties compared to the other scenarios, while psychological risk perceptions had a stronger positive effect on overall risks and negative effect on likelihood of purchase in case of the parties being strangers compared to the scenarios where they had some kind of a social relationship.

Based on the experiment, there is a significant difference between the means of the WTA and WTP values provided by the participants. The previously introduced phenomenon of the endowment effect might be behind this difference. Participants were told that they own the products and that they can actually keep them outside of the experiment as well. This ensured that the participants really looked at the products as their own, however, there were no factors other than ownership that could modify the price (e.g. nice memories with the product). The experiment provided insight on how negotiation processes take place between pairs who knew each other previously compared to those who did not. The main question was in which case the negotiations are going to be more effective in achieving the ideal compromise price between the initial WTA of the seller and the initial WTP of the buyer. The results suggest that negotiations

between strangers were more effective. This is consistent with the fact that was discovered during the analysis of the survey on pricing and payment methods, that implied that buyers are more likely to choose participative pricing when they do not know the seller. The reason behind this might be twofold: on one hand, users may feel awkward bargaining with their friends or acquaintances because it might be a sign of financial struggles, it could be bad for their social reputation and they might simply feel it is impolite or selfish. On the other hand, they might trust the other party more to price their product reasonably when they know the seller, hence the buyers feel less need to start negotiating the price. This latter supposition derives from the fact that in case of friends negotiating, the difference from the ideal price was usually towards the WTA over the WTP. When the significance of this phenomenon was tested, it turned out that there is a strong positive association between the categorical variables of the negotiating parties being friends and the difference between the final price and the ideal compromise price being positive. While as it was noted above, that the results suggesting that first-degree connections are negotiating less intensely is consistent with Halpern's (1994) findings, it is important to highlight, that while she found this means sellers are charging lower prices to buyers when there is a social relationship between the parties, this research concluded that the lower intensity of the negotiations lead to buyers accepting higher prices instead.

## 5.2. How are the Findings Related to the RQs and Hypotheses?

The research questions of this study aimed at grasping a potential way for innovation in the world of C2C shopping from a practical point of view. It might seem an abstract idea to try and explore the social aspects of online transactions, however, the key connection weaving through the topic is an abstract concept as well: trust. The answers to these research questions are to be found in the vindication of all hypotheses. As the secondary research implied and all three primary studies confirmed, personal relationships between parties do influence deals on C2C online marketplaces. Although it is important to note that the primary research only provided data from hypothetical transactions, more than two hundred people's opinion supports that they would behave differently in many aspects of C2C transactions based on their supposed social relationship with the seller of a product. These exact aspects are answering the following four research questions, since the willingness to do transactions, preferred pricing methods, preferred payment methods and risk perceptions were all differing between the three scenarios: when the

parties knew each other, hence they were first-degree connections, when they had mutual friends, hence they were second-degree connections and when they were strangers.

This study examines already researched topics in a more expanded and at the same time contrarily, in more specific ways. For example, in this research, pricing and payment preferences and risk perception were examined in a more holistic way compared to previous research. However, potential reasons were assigned to some already researched areas. For example, participative pricing in C2C marketplaces has been researched before, however, putting it in context for the hypothesis testing with trust and the motivations behind negotiations were not typical in the existing literature.

### 5.3. Managerial Implications

The results of this study show that social relationships could be exploited further in the area of C2C marketplaces. In order to overcome the underlying issue of most barriers to C2C shopping, the lack of trust, different solutions could be implemented from integrating social media functions to providing a wider range of payment options. Already existing elements, for example enabling the users to connect with each other on these platforms, to innovative concepts, such as a built-in, generalised negotiation tool could enhance the user experience and consequently the satisfaction, the willingness to purchase and retention rates could be increased. As the results show, participative pricing could mean a motivation for users who do not know each other to engage in transactions with each other anyways. Direct payment options could help decrease the distrust towards the platform and online payments. Further social elements, like the ability of creating groups and uploading content and interacting with each other exclusively with the people in these could alleviate different kinds of issues. First and foremost, it could mean a secure place for users, sharing their products with only those whom they choose to. For some this could serve as a protection against strangers and the potential danger of fake profiles and other frauds, while for others, on the contrary, it could create discretion and privacy from the people they know but they do not want to interact with.

These are just a few ideas, that all should be further examined to tell whether they could actually be successful innovations in the market of C2C shopping. However, this study proved that integrating new functions based on social networks does have potential to motivate consumers to engage in C2C transactions.

## 6. Conclusion

Big tech companies have achieved almost incomprehensible success in terms of fame and value in the past two, three decades. In the beginning, to the average users, social media sites and applications did not seem like something that generates revenue to its owner, however these days, many billions of dollars are expected annually. At the same time, eBay – that is still sometimes used as a prominent example of C2C sites – has shifted more towards B2C and new products instead of secondhand ones, its revenue is fluctuating and does not achieve the tenth of the one of Meta. Marketplace apps focused on C2C deals are often working as simple advertising sites. The sharing economy as a concept and businesses based on this idea (e.g. AirBnb, Uber) have been widely successful in the past years. However, even though C2C re-commerce could provide solutions for two issues that are becoming increasingly pressing problems – sustainability and financial concerns – C2C marketplace apps have not exploited their full potential yet. The question is how could C2C marketplaces attract more users, generate higher revenue and ultimately, become more successful? This study proposes a twofold solution. First, integrating social media functions into marketplaces and second, standardising purchasing processes. Most barriers towards online shopping and especially towards buying secondhand items from private persons online are deriving from the lack of trust. In most cases, this is the distrust towards the platform, the other party, technology or simply the Internet.

By integrating social features, such as the possibility for users to connect and see what degree connection do they have with another user, or the function to create groups and interact within those could mitigate these trust issues by establishing a “real world” leg of transactions through the social networks of users. This means that real world rewards and punishments become part of the picture hence the economic gains of fraud are decreased due to social nature of the transaction.

Through standardising the purchasing process, from the first contact between the parties, through the negotiation process until the exchange of goods, it becomes safer, clearer and more organised. Examples of this standardisation include determining when to enable parties to see each others’ personal information (e.g. address, phone number) to increase personal safety, providing options for participative pricing to reduce distrust towards stranger sellers’ prices, limiting the forms and number of messages to avoid unsolicited content, integrating the payment options (including direct options) so that users can choose based on the circumstances each time.

All of these elements would make the whole process trackable (unlike most current options for C2C deals) and could enhance user experience.

This research proved that social aspect does in fact play an important part in consumer behaviour and preferences when it comes to online deals between private persons. When buyers on a fictional platform were told that they know the seller, or they have connections in common with him or her, their likeliness of purchase was much higher compared to when they were told they are strangers. They would prefer accepting the prices set by the seller and paying him or her directly (e.g. through Revolut or PayPal) in the former cases, while in the latter, they would rather have a say in the price and pay through the platform. Risks are perceived to be significantly lower when there is a social connection between the seller and the buyer.

By translating psychologically important aspects of social relations to the language of technology, e-commerce and user experience design, and integrating already existing functions from other areas, such as social media elements and completely new solutions into the already explored best practices of C2C marketplaces, they could become one of the main drivers of sustainable private consumption.

This study can provide a base for further research in the area, with the final aim of reforming the market of C2C re-commerce in a way that would be able to serve the needs created by the triple constellation of Gen Z – the first generation that had smart phones under the age of 10 – growing up and becoming consumers, the unfolding global economic crisis and the increasing need for sustainable solutions (from both an environmental and economic point of view). As so many times throughout history, the heart of this reform is to find the best way to provide one of the most important things for people: trust.

## 7. Limitations and Future Research

The limitations of this paper start with the fact that C2C shopping in the digital environment is a fairly new phenomenon and is a rapidly changing and developing area. For this reason it is hard to find literature that is reliable and up-to-date at the same time. Much of the existing literature is focused on already established platforms, such as eBay or AirBnB, rather than on new emerging platforms. This causes an issue because although there are universal truths and worst and best practices that can be applied in a more future- and innovation-oriented approach as well, many key learnings of these studies are outdated, do not factor in technological advancements, and try to limit the endless options to develop by always circling back to the examples of the first success stories. Also, many of the concepts and expressions used in this area of research are still not well-established, for example, the abbreviations *P2P* and *C2C* are used substitutionally in some studies, while others are debating the differences between them.

Participants were asked to take part in the primary research for free. If this was not the case, the sample sizes could have been increased which might have influenced the results in other ways.

The research is appropriate as an exploratory study of a wider and deeper study on the same topic, with financial support and without page limitations. Geographical extension of the research would also be a way to continue with the research, just as well as defining and measuring further aspects of C2C marketplaces and their processes that might be influenced by social relationships, and how these elements could be exploited. The study suggests ideas in order to innovate the C2C shopping market, which could be materialised in the form of a new business idea or the enhancement of an existing one or further developed into a theoretical framework around C2C marketplaces.

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# Appendices

## Appendix I. Survey on Pricing and Payment Preferences (In all three cases the same questions were asked)

English ▾

Have you ever bought anything online before?

Yes

No

Are you Hungarian and / or living in Hungary?

Yes

No

How likely it is that if you were in this scenario, you would actually buy the product? (Keeping in mind that you are searching for a product similar to the one above)

Extremely unlikely

Moderately unlikely

Neither likely nor unlikely

Moderately likely

Extremely likely

There are two types of pricing options. A: you offer a price and you and the seller start negotiating, or B: the seller offers the price and you decide whether you accept it or not, but you cannot negotiate in this case. In case of this product, which one would you prefer?

A: I offer a price and we start negotiating with Julia

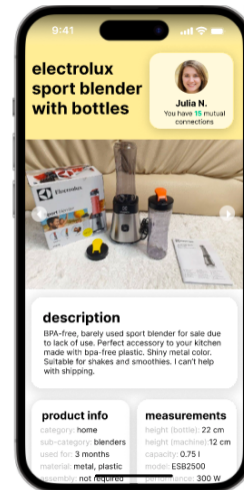
B: Julia offers a price which I can decide to accept or not

The price is final and both of you decide to continue with the process. Would you rather pay Julia through Revolut, PayPal or other direct options (A), or would you rather pay the platform, that will then send the money to Julia (B)?

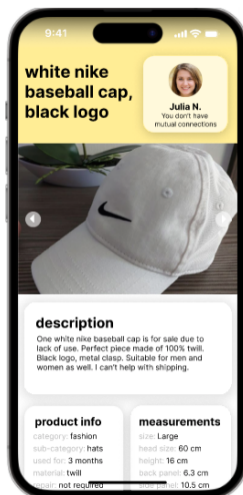
A: I would rather pay Julia through Revolut, PayPal or other direct option

B: I would rather pay the platform that will send the money to Julia

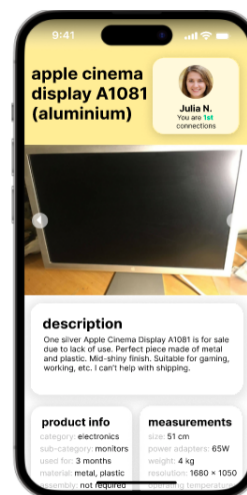
Please check out the following product page! You can take a look at the other photos and scroll down. Notice, that according to the provided information, Julia and you have **15 mutual friends!** If you were able to click on Julia's profile, you would see who those mutual friends are. (In some cases you might have to wait a few seconds for the product page to load!)



Please check out the following product page! You can take a look at the other photos and scroll down. Notice, that according to the provided information, Julia and you **do not know each other and you do not have any mutual connections either.** (In some cases you might have to wait a few seconds for the product page to load!)



Please check out the following product page! You can take a look at the other photos and scroll down. Notice, that according to the provided information, Julia and you are first connections, which means that you **know Julia.** (In some cases you might have to wait a few seconds for the product page to load!)



What is your gender?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

How often do you purchase online?

- Few times a year
- Few times a month
- Every week
- Every day

What is your age group?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64

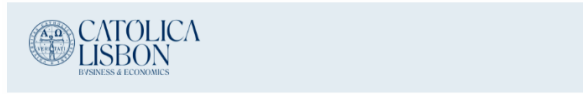
What is your highest level of education?

- Primary school
- High school
- Bachelor's degree (ongoing or finished)
- Master's degree (ongoing or finished)
- Higher
- Prefer not to say

What is your employment status?

- Full-time employee
- Part-time employee
- Seeking opportunities
- Self-employed
- Student
- Retired
- Prefer not to say

## Appendix II. Survey on Perceived Product Risks (In all three cases the same questions were asked)



Have you ever bought anything online before?

- Yes
- No

Are you Hungarian and / or living in Hungary?

- Yes
- No

In the previous page you saw a product page with the information that **Julia (the seller)** and you have **15 mutual friends**. Please answer the following questions along this information.

Low chances (low risk) 2 1 2 3 4 5 6 7 8 9 10 High chances (high risk)

What is the likelihood that there will be something wrong with the product or that it will not work properly?

What are the chances that this purchase is going to change how others think of you?

What are the chances that this purchase is not going to fit in well with your self-image and self-concepts?

What are the chances that this product may not be safe, i.e. may be or become harmful or injurious to your health?

What are the chances that you will loose money on this transaction (e.g. because you don't receive the product at all or you pay more than its value)?

Overall, how risky would this purchase be?

How likely it is that if you were in this scenario, you would actually buy the product? (Keeping in mind that you are searching for a product similar to the one above)

5 1 2 3 4 5 6 7 8 9 10

Likelihood of purchase

(The same demographic questions were asked as in the previous survey)

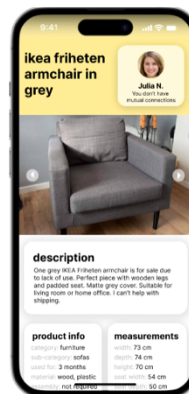
Please check out the following product page! You can take a look at the other photos and scroll down. Notice, that according to the provided information, Julia and you have **15 mutual friends!** If you were able to click on Julia's profile, you would see who those mutual friends are. (In some cases you might have to wait a few seconds for the product page to load!)



Please check out the following product page! You can take a look at the other photos and scroll down. Notice, that according to the provided information, Julia and you are first connections, which means that **you know Julia**. (In some cases you might have to wait a few seconds for the product page to load!)



Please check out the following product page! You can take a look at the other photos and scroll down. Notice, that according to the provided information, Julia and you **do not know each other and you do not have any mutual connections either**. (In some cases you might have to wait a few seconds for the product page to load!)



Appendix III. Statistical Analysis of the Survey regarding Pricing and Payment Preferences

Appendix III.A. Repeated Measures ANOVA

**Descriptive Statistics**

	Mean	Std. Deviation	N
1st degree	3.87	1.047	54
2nd degree	3.50	.947	54
Strangers	2.91	.996	54

**Mauchly's Test of Sphericity<sup>a</sup>**

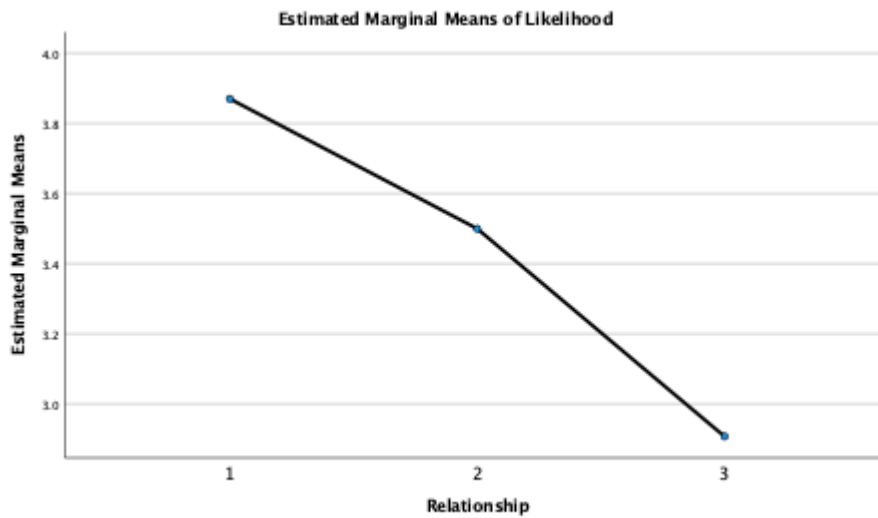
Measure: Likelihood

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon <sup>b</sup> Greenhouse-Geisser
Relationship	.952	2.537	2	.281	.955

**Pairwise Comparisons**

Measure: Likelihood

(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval Lower Bound
1	2	.370 <sup>*</sup>	.150	.017	.069
	3	.963 <sup>*</sup>	.159	<.001	.645
2	1	-.370 <sup>*</sup>	.150	.017	-.672
	3	.593 <sup>*</sup>	.131	<.001	.330
3	1	-.963 <sup>*</sup>	.159	<.001	-1.281
	2	-.593 <sup>*</sup>	.131	<.001	-.855



## Appendix III.B. Chi-square tests

### Crosstabs

#### Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
1st degree * Participative pricing	168	99.4%	1	0.6%	169	100.0%

#### 1st degree \* Participative pricing Crosstabulation

		Participative pricing		Total
		Fixed pricing	Participative pricing	
1st degree 0	Count	54	58	112
	Expected Count	65.3	46.7	112.0
1st degree	Count	44	12	56
	Expected Count	32.7	23.3	56.0
Total	Count	98	70	168
	Expected Count	98.0	70.0	168.0

#### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	14.155 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	12.934	1	<.001		
Likelihood Ratio	14.894	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	14.071	1	<.001		
N of Valid Cases	168				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.33.

b. Computed only for a 2x2 table

#### Symmetric Measures

	Value	Approximate Significance
Nominal by Nominal Phi	-.290	<.001
Cramer's V	.290	<.001
N of Valid Cases	168	

### Crosstabs

#### Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
1st degree * Direct payment	168	99.4%	1	0.6%	169	100.0%

#### 1st degree \* Direct payment Crosstabulation

		Direct payment		Total
		Traditional payment	Direct payment	
1st degree 0	Count	54	58	112
	Expected Count	38.7	73.3	112.0
1st degree	Count	4	52	56
	Expected Count	19.3	36.7	56.0
Total	Count	58	110	168
	Expected Count	58.0	110.0	168.0

#### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	27.860 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	26.072	1	<.001		
Likelihood Ratio	32.593	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	27.694	1	<.001		
N of Valid Cases	168				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.33.

b. Computed only for a 2x2 table

#### Symmetric Measures

	Value	Approximate Significance
Nominal by Nominal Phi	.407	<.001
Cramer's V	.407	<.001
N of Valid Cases	168	

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
2nd degree * Participative pricing	168	99.4%	1	0.6%	169	100.0%

2nd degree \* Participative pricing Crosstabulation

2nd degree	0	Count	Participative pricing		Total
			Fixed pricing	Participative pricing	
		Count	70	42	112
		Expected Count	65.3	46.7	112.0
2nd degree	1	Count	28	28	56
		Expected Count	32.7	23.3	56.0
Total		Count	98	70	168
		Expected Count	98.0	70.0	168.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.400 <sup>a</sup>	1	.121		
Continuity Correction <sup>b</sup>	1.913	1	.167		
Likelihood Ratio	2.386	1	.122		
Fisher's Exact Test				.137	.084
Linear-by-Linear Association	2.386	1	.122		
N of Valid Cases	168				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.33.  
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.120	.121
	Cramer's V	.120	.121
N of Valid Cases		168	

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Stranger * Participative pricing	168	99.4%	1	0.6%	169	100.0%

Stranger \* Participative pricing Crosstabulation

Stranger	.00	Count	Participative pricing		Total
			Fixed pricing	Participative pricing	
		Count	72	40	112
		Expected Count	65.3	46.7	112.0
1.00	1	Count	26	30	56
		Expected Count	32.7	23.3	56.0
Total		Count	98	70	168
		Expected Count	98.0	70.0	168.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.898 <sup>a</sup>	1	.027		
Continuity Correction <sup>b</sup>	4.191	1	.041		
Likelihood Ratio	4.869	1	.027		
Fisher's Exact Test				.032	.021
Linear-by-Linear Association	4.869	1	.027		
N of Valid Cases	168				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.33.  
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.171	.027
	Cramer's V	.171	.027
N of Valid Cases		168	

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
2nd degree * Direct payment	168	99.4%	1	0.6%	169	100.0%

2nd degree \* Direct payment Crosstabulation

2nd degree	0	Count	Direct payment		Total
			Traditional payment	Direct payment	
		Count	41	71	112
		Expected Count	38.7	73.3	112.0
2nd degree	1	Count	17	39	56
		Expected Count	19.3	36.7	56.0
Total		Count	58	110	168
		Expected Count	58.0	110.0	168.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.645 <sup>a</sup>	1	.422		
Continuity Correction <sup>b</sup>	.398	1	.528		
Likelihood Ratio	.652	1	.419		
Fisher's Exact Test				.492	.265
Linear-by-Linear Association	.641	1	.423		
N of Valid Cases	168				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.33.  
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.062	.422
	Cramer's V	.062	.422
N of Valid Cases		168	

Crosstabs

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Stranger * Direct payment	168	99.4%	1	0.6%	169	100.0%

Stranger \* Direct payment Crosstabulation

Stranger	.00	Count	Direct payment		Total
			Traditional payment	Direct payment	
		Count	21	91	112
		Expected Count	38.7	73.3	112.0
1.00	1	Count	37	19	56
		Expected Count	19.3	36.7	56.0
Total		Count	58	110	168
		Expected Count	58.0	110.0	168.0

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	36.984 <sup>a</sup>	1	<.001		
Continuity Correction <sup>b</sup>	34.920	1	<.001		
Likelihood Ratio	36.695	1	<.001		
Fisher's Exact Test				<.001	<.001
Linear-by-Linear Association	36.764	1	<.001		
N of Valid Cases	168				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.33.  
b. Computed only for a 2x2 table

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	-.469	<.001
	Cramer's V	.469	<.001
N of Valid Cases		168	

Appendix III.C. Linear Regression (stepwise)

**Model Summary<sup>d</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.327 <sup>a</sup>	.107	.101	1.004	
2	.376 <sup>b</sup>	.141	.131	.988	
3	.412 <sup>c</sup>	.170	.155	.974	2.266

- a. Predictors: (Constant), Direct payment
- b. Predictors: (Constant), Direct payment, 1st degree
- c. Predictors: (Constant), Direct payment, 1st degree, 2nd degree
- d. Dependent Variable: Likelihood of purchase

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.983	1	19.983	19.813	<.001 <sup>b</sup>
	Residual	167.422	166	1.009		
	Total	187.405	167			
2	Regression	26.467	2	13.234	13.568	<.001 <sup>c</sup>
	Residual	160.937	165	.975		
	Total	187.405	167			
3	Regression	31.873	3	10.624	11.203	<.001 <sup>d</sup>
	Residual	155.532	164	.948		
	Total	187.405	167			

- a. Dependent Variable: Likelihood of purchase
- b. Predictors: (Constant), Direct payment
- c. Predictors: (Constant), Direct payment, 1st degree
- d. Predictors: (Constant), Direct payment, 1st degree, 2nd degree

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.966	.132		22.489	<.001		
	Direct payment	.725	.163	.327	4.451	<.001	1.000	1.000
2	(Constant)	2.934	.130		22.526	<.001		
	Direct payment	.541	.175	.244	3.084	.002	.834	1.199
	1st degree	.456	.177	.204	2.578	.011	.834	1.199
3	(Constant)	2.777	.144		19.247	<.001		
	Direct payment	.394	.184	.177	2.144	.033	.740	1.351
	1st degree	.750	.214	.335	3.513	<.001	.557	1.795
	2nd degree	.466	.195	.208	2.387	.018	.665	1.503

- a. Dependent Variable: Likelihood of purchase

Appendix IV. Statistical Analysis of the results of the Survey regarding Product Risk Perceptions

Appendix IV.A. Linear regressions without moderator and interaction variables

First-degree connection - Overall risk perception

**Descriptive Statistics**

	Mean	Std. Deviation	N
Overall risk	2.47	2.292	45
Performance	2.27	2.115	45
Social	1.60	1.338	45
Psychological	1.80	2.007	45
Physical	1.58	1.644	45
Financial	2.13	2.074	45

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.813 <sup>a</sup>	.662	.618	1.416	2.540

a. Predictors: (Constant), Financial, Social, Psychological, Performance, Physical

b. Dependent Variable: Overall risk

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	152.993	5	30.599	15.259	<.001 <sup>b</sup>
	Residual	78.207	39	2.005		
	Total	231.200	44			

a. Dependent Variable: Overall risk

b. Predictors: (Constant), Financial, Social, Psychological, Performance, Physical

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.244	.391		.625	.536		
	Performance	.098	.141	.090	.695	.491	.516	1.938
	Social	.369	.199	.215	1.848	.072	.639	1.564
	Psychological	.010	.128	.009	.077	.939	.690	1.450
	Physical	-.388	.199	-.278	-1.944	.059	.424	2.359
	Financial	.940	.166	.850	5.650	<.001	.383	2.611

a. Dependent Variable: Overall risk

First-degree connection - Likelihood of purchase

**Descriptive Statistics**

	Mean	Std. Deviation	N
Likelihood of purchase	6.62	2.716	45
Performance	2.27	2.115	45
Social	1.60	1.338	45
Psychological	1.80	2.007	45
Physical	1.58	1.644	45
Financial	2.13	2.074	45
Overall risk	2.47	2.292	45

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.641 <sup>a</sup>	.411	.318	2.243	1.984

a. Predictors: (Constant), Overall risk, Psychological, Social, Performance, Physical, Financial

b. Dependent Variable: Likelihood of purchase

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	133.407	6	22.235	4.420	.002 <sup>b</sup>
	Residual	191.171	38	5.031		
	Total	324.578	44			

a. Dependent Variable: Likelihood of purchase

b. Predictors: (Constant), Overall risk, Psychological, Social, Performance, Physical, Financial

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.299	.622		13.347	<.001		
	Performance	-.564	.224	-.439	-2.519	.016	.510	1.962
	Social	.226	.330	.111	.686	.497	.588	1.701
	Psychological	.117	.203	.087	.578	.567	.689	1.451
	Physical	-.137	.331	-.083	-.414	.681	.386	2.588
	Financial	.026	.355	.020	.074	.941	.211	4.749
	Overall risk	-.329	.254	-.277	-1.296	.203	.338	2.956

a. Dependent Variable: Likelihood of purchase

Second-degree connection - Overall risk perceptions

**Descriptive Statistics**

	Mean	Std. Deviation	N
Overall	3.13	1.632	45
Performance	3.53	1.455	45
Social	2.00	1.679	45
Psychological	2.38	2.124	45
Physical	2.27	1.643	45
Financial	2.89	1.668	45

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.835 <sup>a</sup>	.698	.659	.953	1.578

a. Predictors: (Constant), Financial, Psychological, Performance, Physical, Social

b. Dependent Variable: Overall

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	81.755	5	16.351	17.991	<.001 <sup>b</sup>
	Residual	35.445	39	.909		
	Total	117.200	44			

a. Dependent Variable: Overall

b. Predictors: (Constant), Financial, Psychological, Performance, Physical, Social

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.479	.497		-.965	.341		
	Performance	.506	.113	.451	4.467	<.001	.759	1.317
	Social	-.018	.114	-.019	-.160	.874	.569	1.758
	Psychological	.262	.077	.341	3.395	.002	.769	1.301
	Physical	.074	.109	.075	.686	.497	.649	1.540
	Financial	.370	.104	.378	3.558	<.001	.687	1.455

a. Dependent Variable: Overall

Second-degree connection - Likelihood of purchase

**Descriptive Statistics**

	Mean	Std. Deviation	N
Likelihood	5.51	2.418	45
Performance	3.53	1.455	45
Social	2.00	1.679	45
Psychological	2.38	2.124	45
Physical	2.27	1.643	45
Financial	2.89	1.668	45
Overall	3.13	1.632	45

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.646 <sup>a</sup>	.418	.326	1.985	2.264

a. Predictors: (Constant), Overall, Social, Physical, Psychological, Financial, Performance

b. Dependent Variable: Likelihood

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	107.479	6	17.913	4.545	.001 <sup>b</sup>
	Residual	149.765	38	3.941		
	Total	257.244	44			

a. Dependent Variable: Likelihood

b. Predictors: (Constant), Overall, Social, Physical, Psychological, Financial, Performance

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.671	1.046		8.288	<.001		
	Performance	-.105	.290	-.063	-.362	.719	.502	1.991
	Social	-.122	.236	-.085	-.517	.608	.569	1.759
	Psychological	.261	.183	.229	1.426	.162	.593	1.686
	Physical	-.586	.227	-.398	-2.579	.014	.642	1.558
	Financial	-.047	.249	-.033	-.191	.850	.519	1.928
	Overall	-.542	.333	-.366	-1.626	.112	.302	3.307

a. Dependent Variable: Likelihood

Strangers - Overall risk perceptions

**Descriptive Statistics**

	Mean	Std. Deviation	N
Overall	5.89	1.787	45
Performance	4.96	1.821	45
Social	2.04	1.833	45
Psychological	2.80	2.242	45
Physical	3.33	2.185	45
Financial	5.20	1.546	45

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.757 <sup>a</sup>	.573	.519	1.239	1.599

a. Predictors: (Constant), Financial, Social, Physical, Performance, Psychological

b. Dependent Variable: Overall

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	80.537	5	16.107	10.486	<.001 <sup>b</sup>
	Residual	59.907	39	1.536		
	Total	140.444	44			

a. Dependent Variable: Overall

b. Predictors: (Constant), Financial, Social, Physical, Performance, Psychological

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.233	.714		1.727	.092		
	Performance	-.018	.132	-.018	-.136	.893	.605	1.653
	Social	.019	.136	.019	.138	.891	.561	1.784
	Psychological	.135	.112	.170	1.213	.233	.558	1.791
	Physical	.047	.093	.057	.508	.614	.854	1.171
	Financial	.802	.162	.694	4.937	<.001	.553	1.808

a. Dependent Variable: Overall

Strangers - Likelihood of purchase

**Descriptive Statistics**

	Mean	Std. Deviation	N
Likelihood	3.51	2.007	45
Performance	4.96	1.821	45
Social	2.04	1.833	45
Psychological	2.80	2.242	45
Physical	3.33	2.185	45
Financial	5.20	1.546	45
Overall	5.89	1.787	45

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.538 <sup>a</sup>	.289	.177	1.821	1.713

a. Predictors: (Constant), Overall, Social, Physical, Performance, Psychological, Financial

b. Dependent Variable: Likelihood

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	51.301	6	8.550	2.580	.034 <sup>b</sup>
	Residual	125.944	38	3.314		
	Total	177.244	44			

a. Dependent Variable: Likelihood

b. Predictors: (Constant), Overall, Social, Physical, Performance, Psychological, Financial

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	6.670	1.089		6.127	<.001		
	Performance	-.360	.194	-.326	-1.856	.071	.605	1.654
	Social	.234	.200	.214	1.170	.249	.560	1.785
	Psychological	-.269	.167	-.300	-1.612	.115	.538	1.859
	Physical	-.114	.136	-.125	-.840	.406	.849	1.178
	Financial	.153	.304	.118	.503	.618	.340	2.937
	Overall	-.257	.235	-.229	-1.094	.281	.427	2.344

a. Dependent Variable: Likelihood

Appendix IV.B. Linear regressions with moderator and interaction variables

Moderator: 1st degree connections, Dependent variable: Overall Risk Perception

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.861 <sup>a</sup>	.741	.717	1.287	1.940

a. Predictors: (Constant), first\_financial, Social, Performance, Psychological, Physical, first\_social, Financial, first\_psychological, first\_physical, 1st degree, first\_performance

b. Dependent Variable: Overall

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	581.402	11	52.855	31.918	<.001 <sup>b</sup>
	Residual	203.680	123	1.656		
	Total	785.081	134			

a. Dependent Variable: Overall

b. Predictors: (Constant), first\_financial, Social, Performance, Psychological, Physical, first\_social, Financial, first\_psychological, first\_physical, 1st degree, first\_performance

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.047	.416		-.112	.911		
	Performance	.266	.098	.233	2.720	.007	.288	3.467
	Social	-.003	.099	-.002	-.035	.972	.477	2.097
	Psychological	.217	.076	.193	2.850	.005	.460	2.175
	Physical	.068	.080	.056	.860	.391	.505	1.979
	Financial	.663	.092	.601	7.171	<.001	.300	3.335
	1st degree	.291	.547	.057	.532	.596	.185	5.416
	first_performance	-.169	.161	-.113	-1.048	.297	.182	5.488
	first_social	.372	.206	.166	1.802	.074	.250	4.004
	first_psychological	-.207	.139	-.123	-1.490	.139	.312	3.209
	first_physical	-.456	.198	-.227	-2.305	.023	.218	4.580
	first_financial	.277	.177	.179	1.565	.120	.162	6.176

a. Dependent Variable: Overall

Moderator: 1st degree connections, Dependent variable: Likelihood of Purchase

**Model Summary<sup>d</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.614 <sup>a</sup>	.377	.372	2.146	
2	.666 <sup>b</sup>	.444	.436	2.034	
3	.679 <sup>c</sup>	.462	.449	2.010	2.006

- a. Predictors: (Constant), Overall
- b. Predictors: (Constant), Overall, Performance
- c. Predictors: (Constant), Overall, Performance, Physical
- d. Dependent Variable: Likelihood

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	370.133	1	370.133	80.354	<.001 <sup>b</sup>
	Residual	612.637	133	4.606		
	Total	982.770	134			
2	Regression	436.504	2	218.252	52.738	<.001 <sup>c</sup>
	Residual	546.266	132	4.138		
	Total	982.770	134			
3	Regression	453.596	3	151.199	37.430	<.001 <sup>d</sup>
	Residual	529.174	131	4.039		
	Total	982.770	134			

- a. Dependent Variable: Likelihood
- b. Predictors: (Constant), Overall
- c. Predictors: (Constant), Overall, Performance
- d. Predictors: (Constant), Overall, Performance, Physical

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.844	.347		22.629	<.001		
	Overall	-.687	.077	-.614	-8.964	<.001	1.000	1.000
2	(Constant)	8.440	.361		23.399	<.001		
	Overall	-.418	.099	-.373	-4.225	<.001	.539	1.855
	Performance	-.453	.113	-.354	-4.005	<.001	.539	1.855
3	(Constant)	8.566	.362		23.691	<.001		
	Overall	-.362	.101	-.324	-3.575	<.001	.501	1.996
	Performance	-.406	.114	-.317	-3.558	<.001	.517	1.933
	Physical	-.212	.103	-.154	-2.057	.042	.734	1.362

- a. Dependent Variable: Likelihood

Moderator: 2nd degree connections, Dependent variable: Overall Risk Perception

**Model Summary<sup>g</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.820 <sup>a</sup>	.673	.670	1.390	
2	.834 <sup>b</sup>	.695	.691	1.347	
3	.847 <sup>c</sup>	.717	.711	1.302	
4	.856 <sup>d</sup>	.733	.725	1.269	
5	.863 <sup>e</sup>	.745	.735	1.246	
6	.861 <sup>f</sup>	.742	.734	1.249	2.087

- a. Predictors: (Constant), Financial
- b. Predictors: (Constant), Financial, Psychological
- c. Predictors: (Constant), Financial, Psychological, Performance
- d. Predictors: (Constant), Financial, Psychological, Performance, second\_financial
- e. Predictors: (Constant), Financial, Psychological, Performance, second\_financial, second\_performance
- f. Predictors: (Constant), Financial, Psychological, second\_financial, second\_performance
- g. Dependent Variable: Overall

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	528.136	1	528.136	273.373	<.001 <sup>b</sup>
	Residual	256.946	133	1.932		
	Total	785.081	134			
2	Regression	545.736	2	272.868	150.488	<.001 <sup>c</sup>
	Residual	239.345	132	1.813		
	Total	785.081	134			
3	Regression	563.023	3	187.674	110.715	<.001 <sup>d</sup>
	Residual	222.059	131	1.695		
	Total	785.081	134			
4	Regression	575.692	4	143.923	89.355	<.001 <sup>e</sup>
	Residual	209.390	130	1.611		
	Total	785.081	134			
5	Regression	584.924	5	116.985	75.396	<.001 <sup>f</sup>
	Residual	200.158	129	1.552		
	Total	785.081	134			
6	Regression	582.293	4	145.573	93.322	<.001 <sup>g</sup>
	Residual	202.788	130	1.560		
	Total	785.081	134			

- a. Dependent Variable: Overall
- b. Predictors: (Constant), Financial
- c. Predictors: (Constant), Financial, Psychological
- d. Predictors: (Constant), Financial, Psychological, Performance
- e. Predictors: (Constant), Financial, Psychological, Performance, second\_financial
- f. Predictors: (Constant), Financial, Psychological, Performance, second\_financial, second\_performance
- g. Predictors: (Constant), Financial, Psychological, second\_financial, second\_performance

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.750	.221		3.389	<.001		
	Financial	.904	.055	.820	16.534	<.001	1.000	1.000
2	(Constant)	.481	.231		2.083	.039		
	Financial	.864	.054	.784	15.876	<.001	.946	1.057
	Psychological	.173	.056	.154	3.116	.002	.946	1.057
3	(Constant)	.173	.243		.711	.479		
	Financial	.704	.073	.639	9.697	<.001	.497	2.013
	Psychological	.174	.054	.155	3.235	.002	.946	1.057
	Performance	.238	.074	.207	3.193	.002	.512	1.954
4	(Constant)	.299	.242		1.238	.218		
	Financial	.721	.071	.654	10.146	<.001	.493	2.027
	Psychological	.174	.052	.155	3.325	.001	.946	1.057
	Performance	.236	.073	.206	3.259	.001	.512	1.955
	second_financial	-.186	.066	-.128	-2.805	.006	.987	1.013
5	(Constant)	.239	.238		1.001	.319		
	Financial	.855	.089	.776	9.630	<.001	.304	3.285
	Psychological	.157	.052	.139	3.021	.003	.928	1.077
	Performance	.113	.087	.099	1.302	.195	.341	2.932
	second_financial	-.500	.144	-.344	-3.464	<.001	.200	5.002
	second_performance	.329	.135	.254	2.439	.016	.183	5.472
6	(Constant)	.318	.231		1.379	.170		
	Financial	.947	.054	.860	17.661	<.001	.839	1.193
	Psychological	.151	.052	.134	2.916	.004	.935	1.070
	second_financial	-.597	.124	-.411	-4.825	<.001	.273	3.660
	second_performance	.430	.110	.332	3.898	<.001	.274	3.648

- a. Dependent Variable: Overall

Moderator: 2nd degree connections, Dependent variable: Likelihood of Purchase

**Model Summary<sup>d</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.614 <sup>a</sup>	.377	.372	2.146	
2	.666 <sup>b</sup>	.444	.436	2.034	
3	.679 <sup>c</sup>	.462	.449	2.010	2.006

- a. Predictors: (Constant), Overall
- b. Predictors: (Constant), Overall, Performance
- c. Predictors: (Constant), Overall, Performance, Physical
- d. Dependent Variable: Likelihood

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	370.133	1	370.133	80.354	<.001 <sup>b</sup>
	Residual	612.637	133	4.606		
	Total	982.770	134			
2	Regression	436.504	2	218.252	52.738	<.001 <sup>c</sup>
	Residual	546.266	132	4.138		
	Total	982.770	134			
3	Regression	453.596	3	151.199	37.430	<.001 <sup>d</sup>
	Residual	529.174	131	4.039		
	Total	982.770	134			

- a. Dependent Variable: Likelihood
- b. Predictors: (Constant), Overall
- c. Predictors: (Constant), Overall, Performance
- d. Predictors: (Constant), Overall, Performance, Physical

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.844	.347		22.629	<.001		
	Overall	-.687	.077	-.614	-8.964	<.001	1.000	1.000
2	(Constant)	8.440	.361		23.399	<.001		
	Overall	-.418	.099	-.373	-4.225	<.001	.539	1.855
	Performance	-.453	.113	-.354	-4.005	<.001	.539	1.855
3	(Constant)	8.566	.362		23.691	<.001		
	Overall	-.362	.101	-.324	-3.575	<.001	.501	1.996
	Performance	-.406	.114	-.317	-3.558	<.001	.517	1.933
	Physical	-.212	.103	-.154	-2.057	.042	.734	1.362

- a. Dependent Variable: Likelihood

Moderator: Strangers, Dependent variable: Overall Risk Perception

### Model Summary<sup>d</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.820 <sup>a</sup>	.673	.670	1.390	
2	.836 <sup>b</sup>	.699	.694	1.338	
3	.848 <sup>c</sup>	.719	.712	1.298	2.182

a. Predictors: (Constant), Financial

b. Predictors: (Constant), Financial, strangers\_psychological

c. Predictors: (Constant), Financial, strangers\_psychological, Performance

d. Dependent Variable: Overall

### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	528.136	1	528.136	273.373	<.001 <sup>b</sup>
	Residual	256.946	133	1.932		
	Total	785.081	134			
2	Regression	548.664	2	274.332	153.169	<.001 <sup>c</sup>
	Residual	236.418	132	1.791		
	Total	785.081	134			
3	Regression	564.251	3	188.084	111.574	<.001 <sup>d</sup>
	Residual	220.830	131	1.686		
	Total	785.081	134			

a. Dependent Variable: Overall

b. Predictors: (Constant), Financial

c. Predictors: (Constant), Financial, strangers\_psychological

d. Predictors: (Constant), Financial, strangers\_psychological, Performance

### Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.750	.221		3.389	<.001		
	Financial	.904	.055	.820	16.534	<.001	1.000	1.000
2	(Constant)	.850	.215		3.949	<.001		
	Financial	.809	.060	.734	13.558	<.001	.779	1.285
	strangers_psychological	.240	.071	.183	3.385	<.001	.779	1.285
3	(Constant)	.554	.230		2.404	.018		
	Financial	.661	.076	.599	8.730	<.001	.455	2.196
	strangers_psychological	.231	.069	.176	3.354	.001	.777	1.287
	Performance	.226	.074	.197	3.041	.003	.511	1.958

a. Dependent Variable: Overall

Moderator: Strangers, Dependent variable: Likelihood of Purchase

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.706 <sup>a</sup>	.498	.444	2.019	1.959

a. Predictors: (Constant), strangers\_overall, Social, Physical, Psychological, Performance, Financial, strangers\_social, Overall, strangers\_psychological, strangers\_physical, Strangers, strangers\_performance, strangers\_financial

b. Dependent Variable: Likelihood

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	489.626	13	37.664	9.241	<.001 <sup>b</sup>
	Residual	493.145	121	4.076		
	Total	982.770	134			

a. Dependent Variable: Likelihood

b. Predictors: (Constant), strangers\_overall, Social, Physical, Psychological, Performance, Financial, strangers\_social, Overall, strangers\_psychological, strangers\_physical, Strangers, strangers\_performance, strangers\_financial

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	8.547	.476		17.970	<.001		
	Performance	-.388	.151	-.303	-2.574	.011	.300	3.332
	Social	-.006	.174	-.004	-.034	.973	.378	2.642
	Psychological	.204	.122	.162	1.668	.098	.440	2.273
	Physical	-.409	.177	-.297	-2.312	.022	.251	3.990
	Financial	.013	.185	.011	.071	.944	.184	5.450
	Overall	-.363	.172	-.325	-2.113	.037	.175	5.700
	Strangers	-1.877	1.297	-.328	-1.447	.150	.081	12.390
	strangers_performance	.028	.262	.026	.106	.916	.067	14.915
	strangers_social	.240	.282	.127	.851	.396	.188	5.326
	strangers_psychological	-.473	.222	-.322	-2.132	.035	.182	5.510
	strangers_physical	.295	.233	.219	1.266	.208	.138	7.232
	strangers_financial	.140	.385	.135	.364	.717	.030	33.310
	strangers_overall	.106	.312	.116	.339	.735	.035	28.284

a. Dependent Variable: Likelihood

## Appendix IV.C. Repeated Measures ANOVA tests

### Overall risk perceptions

#### Within-Subjects Factors

Measure: Overall\_risk\_perception

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

#### Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	2.47	2.292	45
2nd degree	3.13	1.632	45
Strangers	5.89	1.787	45

#### Mauchly's Test of Sphericity<sup>a</sup>

Measure: Overall\_risk\_perception

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon <sup>b</sup>	Lower-bound
Relationship	.879	5.526	2	.063	.892	.928	.500

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

a. Design: Intercept  
Within Subjects Design: Relationship

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

#### Tests of Within-Subjects Effects

Measure: Overall\_risk\_perception

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	296.237	2	148.119	49.169	<.001
	Greenhouse-Geisser	296.237	1.785	165.980	49.169	<.001
	Huynh-Feldt	296.237	1.855	159.685	49.169	<.001
	Lower-bound	296.237	1.000	296.237	49.169	<.001
Error(Relationship)	Sphericity Assumed	265.096	88	3.012		
	Greenhouse-Geisser	265.096	78.530	3.376		
	Huynh-Feldt	265.096	81.626	3.248		
	Lower-bound	265.096	44.000	6.025		

#### Pairwise Comparisons

Measure: Overall\_risk\_perception

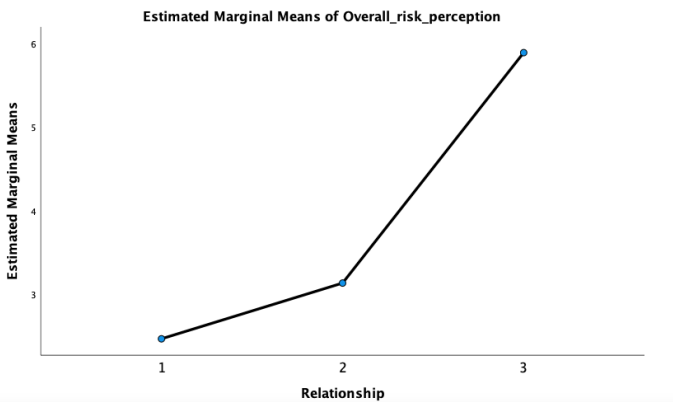
(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
1	2	-.667	.360	.070	-1.391	.058
	3	-3.422*	.420	<.001	-4.268	-2.576
2	1	.667	.360	.070	-.058	1.391
	3	-2.756*	.310	<.001	-3.380	-2.131
3	1	3.422*	.420	<.001	2.576	4.268
	2	2.756*	.310	<.001	2.131	3.380

Based on estimated marginal means

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

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

#### Profile Plots



# Likelihood of purchase

## Within-Subjects Factors

Measure: Likelihood\_of\_purchase

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

## Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	6.62	2.716	45
2nd degree	5.51	2.418	45
Strangers	3.51	2.007	45

## Mauchly's Test of Sphericity<sup>a</sup>

Measure: Likelihood\_of\_purchase

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon <sup>b</sup>		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Relationship	.881	5.450	2	.066	.894	.929	.500

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

a. Design: Intercept  
Within Subjects Design: Relationship

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

## Tests of Within-Subjects Effects

Measure: Likelihood\_of\_purchase

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	223.704	2	111.852	35.369	<.001
	Greenhouse-Geisser	223.704	1.787	125.166	35.369	<.001
	Huynh-Feldt	223.704	1.858	120.408	35.369	<.001
	Lower-bound	223.704	1.000	223.704	35.369	<.001
Error(Relationship)	Sphericity Assumed	278.296	88	3.162		
	Greenhouse-Geisser	278.296	78.639	3.539		
	Huynh-Feldt	278.296	81.747	3.404		
	Lower-bound	278.296	44.000	6.325		

## Pairwise Comparisons

Measure: Likelihood\_of\_purchase

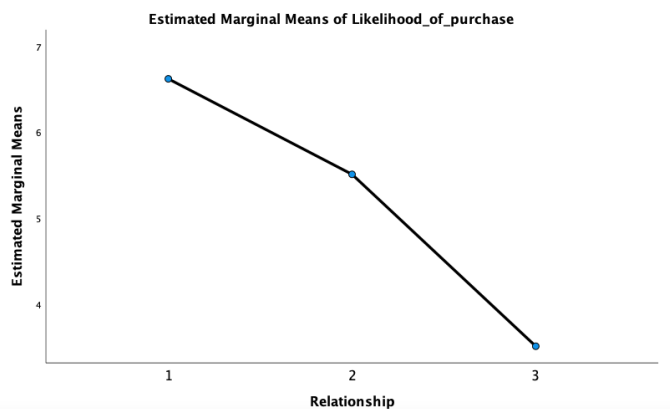
(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
1	2	1.111*	.307	<.001	.493	1.730
	3	3.111*	.420	<.001	2.266	3.957
2	1	-1.111*	.307	<.001	-1.730	-.493
	3	2.000*	.389	<.001	1.216	2.784
3	1	-3.111*	.420	<.001	-3.957	-2.266
	2	-2.000*	.389	<.001	-2.784	-1.216

Based on estimated marginal means

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

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

## Profile Plots



# Financial risk perceptions

### Within-Subjects Factors

Measure: financial\_risk

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

### Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	2.13	2.074	45
2nd degree	2.89	1.668	45
Strangers	5.20	1.546	45

### Mauchly's Test of Sphericity<sup>a</sup>

Measure: financial\_risk

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon <sup>b</sup> Huynh-Feldt	Lower-bound
Relationship	.909	4.096	2	.129	.917	.955	.500

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

a. Design: Intercept  
Within Subjects Design: Relationship

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

### Tests of Within-Subjects Effects

Measure: financial\_risk

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	229.748	2	114.874	52.040	<.001
	Greenhouse-Geisser	229.748	1.833	125.311	52.040	<.001
	Huynh-Feldt	229.748	1.909	120.338	52.040	<.001
	Lower-bound	229.748	1.000	229.748	52.040	<.001
Error(Relationship)	Sphericity Assumed	194.252	88	2.207		
	Greenhouse-Geisser	194.252	80.670	2.408		
	Huynh-Feldt	194.252	84.004	2.312		
	Lower-bound	194.252	44.000	4.415		

### Pairwise Comparisons

Measure: financial\_risk

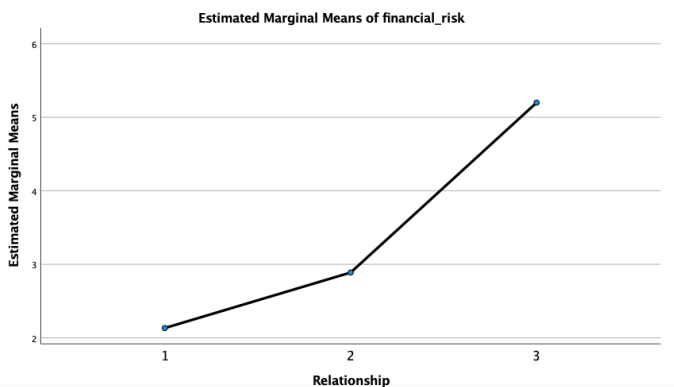
(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
1	2	-.756*	.288	.012	-1.336	-.175
	3	-3.067*	.357	<.001	-3.787	-2.347
2	1	.756*	.288	.012	.175	1.336
	3	-2.311*	.289	<.001	-2.894	-1.728
3	1	3.067*	.357	<.001	2.347	3.787
	2	2.311*	.289	<.001	1.728	2.894

Based on estimated marginal means

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

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Profile Plots



Performance risk perceptions

### Within-Subjects Factors

Measure: Performance

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

### Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	2.27	2.115	45
2nd degree	3.53	1.455	45
Strangers	4.96	1.821	45

### Mauchly's Test of Sphericity<sup>a</sup>

Measure: Performance

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon <sup>b</sup>		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Relationship	.763	11.654	2	.003	.808	.834	.500

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

a. Design: Intercept  
Within Subjects Design: Relationship

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

### Tests of Within-Subjects Effects

Measure: Performance

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	162.859	2	81.430	38.428	<.001
	Greenhouse-Geisser	162.859	1.616	100.761	38.428	<.001
	Huynh-Feldt	162.859	1.669	97.586	38.428	<.001
	Lower-bound	162.859	1.000	162.859	38.428	<.001
Error(Relationship)	Sphericity Assumed	186.474	88	2.119		
	Greenhouse-Geisser	186.474	71.117	2.622		
	Huynh-Feldt	186.474	73.431	2.539		
	Lower-bound	186.474	44.000	4.238		

### Pairwise Comparisons

Measure: Performance

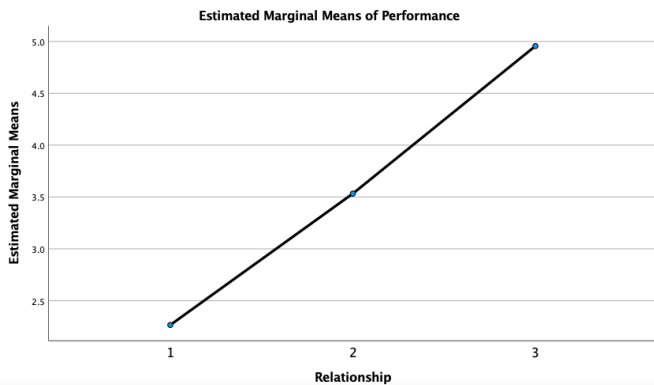
(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
1	2	-1.267*	.253	<.001	-1.777	-.757
	3	-2.689*	.373	<.001	-3.441	-1.937
2	1	1.267*	.253	<.001	.757	1.777
	3	-1.422*	.282	<.001	-1.990	-.855
3	1	2.689*	.373	<.001	1.937	3.441
	2	1.422*	.282	<.001	.855	1.990

Based on estimated marginal means

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

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Profile Plots



Physical risk perceptions

### Within-Subjects Factors

Measure: Physical

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

### Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	1.58	1.644	45
2nd degree	2.27	1.643	45
Strangers	3.33	2.185	45

### Mauchly's Test of Sphericity<sup>a</sup>

Measure: Physical

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon <sup>b</sup> Huynh-Feldt	Lower-bound
Relationship	.691	15.923	2	<.001	.764	.786	.500

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

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

### Tests of Within-Subjects Effects

Measure: Physical

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	70.415	2	35.207	15.787	<.001
	Greenhouse-Geisser	70.415	1.527	46.103	15.787	<.001
	Huynh-Feldt	70.415	1.571	44.818	15.787	<.001
	Lower-bound	70.415	1.000	70.415	15.787	<.001
Error(Relationship)	Sphericity Assumed	196.252	88	2.230		
	Greenhouse-Geisser	196.252	67.202	2.920		
	Huynh-Feldt	196.252	69.129	2.839		
	Lower-bound	196.252	44.000	4.460		

### Pairwise Comparisons

Measure: Physical

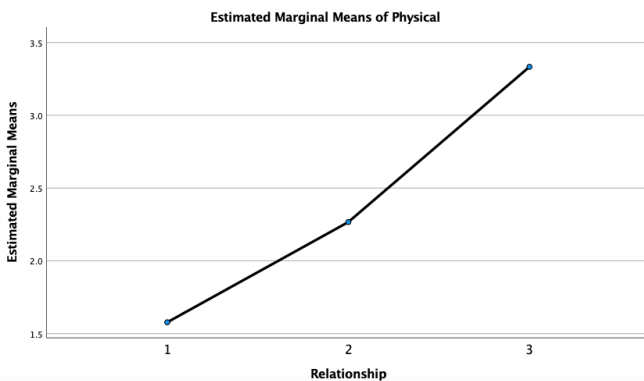
(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
1	2	-.689*	.237	.006	-1.167	-.210
	3	-1.756*	.388	<.001	-2.538	-.973
2	1	.689*	.237	.006	.210	1.167
	3	-1.067*	.301	<.001	-1.672	-.461
3	1	1.756*	.388	<.001	.973	2.538
	2	1.067*	.301	<.001	.461	1.672

Based on estimated marginal means

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

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Profile Plots



Psychological risk perceptions

### Within-Subjects Factors

Measure: Psychological

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

### Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	1.80	2.007	45
2nd degree	2.38	2.124	45
Strangers	2.80	2.242	45

### Mauchly's Test of Sphericity<sup>a</sup>

Measure: Psychological

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon <sup>b</sup>	Lower-bound
Relationship	.978	.939	2	.625	.979	1.000	.500

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

a. Design: Intercept  
Within Subjects Design: Relationship

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

### Tests of Within-Subjects Effects

Measure: Psychological

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	22.681	2	11.341	5.848	.004
	Greenhouse-Geisser	22.681	1.958	11.586	5.848	.004
	Huynh-Feldt	22.681	2.000	11.341	5.848	.004
	Lower-bound	22.681	1.000	22.681	5.848	.020
Error(Relationship)	Sphericity Assumed	170.652	88	1.939		
	Greenhouse-Geisser	170.652	86.139	1.981		
	Huynh-Feldt	170.652	88.000	1.939		
	Lower-bound	170.652	44.000	3.878		

### Pairwise Comparisons

Measure: Psychological

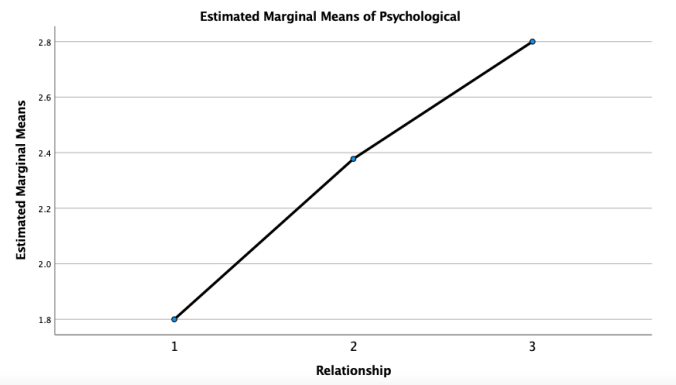
(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
1	2	-.578	.307	.067	-1.197	.042
	3	-1.000*	.272	<.001	-1.547	-.453
2	1	.578	.307	.067	-.042	1.197
	3	-.422	.301	.167	-1.028	.184
3	1	1.000*	.272	<.001	.453	1.547
	2	.422	.301	.167	-.184	1.028

Based on estimated marginal means

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

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Profile Plots



Social risk perceptions

### Within-Subjects Factors

Measure: Social

Relationship	Dependent Variable
1	@1stdegree
2	@2nddegree
3	Strangers

### Descriptive Statistics

	Mean	Std. Deviation	N
1st degree	1.60	1.338	45
2nd degree	2.00	1.679	45
Strangers	2.04	1.833	45

### Mauchly's Test of Sphericity<sup>a</sup>

Measure: Social

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Greenhouse-Geisser	Epsilon <sup>b</sup> Huynh-Feldt	Lower-bound
Relationship	.951	2.177	2	.337	.953	.995	.500

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

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

### Tests of Within-Subjects Effects

Measure: Social

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Relationship	Sphericity Assumed	5.393	2	2.696	1.436	.243
	Greenhouse-Geisser	5.393	1.906	2.829	1.436	.244
	Huynh-Feldt	5.393	1.990	2.710	1.436	.244
	Lower-bound	5.393	1.000	5.393	1.436	.237
Error(Relationship)	Sphericity Assumed	165.274	88	1.878		
	Greenhouse-Geisser	165.274	83.860	1.971		
	Huynh-Feldt	165.274	87.559	1.888		
	Lower-bound	165.274	44.000	3.756		

### Pairwise Comparisons

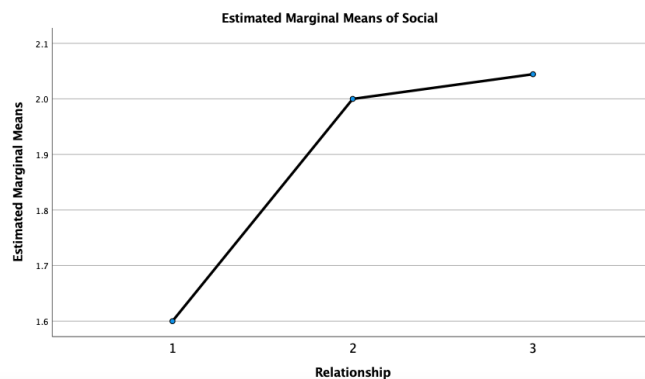
Measure: Social

(I) Relationship	(J) Relationship	Mean Difference (I-J)	Std. Error	Sig. <sup>a</sup>	95% Confidence Interval for Difference <sup>a</sup>	
					Lower Bound	Upper Bound
1	2	-.400	.270	.146	-.945	.145
	3	-.444	.274	.112	-.998	.109
2	1	.400	.270	.146	-.145	.945
	3	-.044	.319	.890	-.688	.599
3	1	.444	.274	.112	-.109	.998
	2	.044	.319	.890	-.599	.688

Based on estimated marginal means

- a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Profile Plots



## Appendix V. Statistical Analysis of the results of the Experiment

### Appendix V.A. Descriptive Statistics

#### Descriptives

##### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Initial WTA	23	1500	16000	4684.78	3932.482
Initial WTP	23	500	7000	2004.35	1398.206
Valid N (listwise)	23				

### Appendix V.B. Paired Samples T-Test

#### Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 WTA	11.3295011	23	9.89286399	2.06280474
WTP	5.34298191	23	3.95529206	.824735407

#### Paired Samples Correlations

	N	Correlation	Significance One-Sided p	Two-Sided p
Pair 1 WTA & WTP	23	.517	.006	.011

#### Paired Samples Test

	Mean	Std. Deviation	Std. Error Mean	Paired Differences		t	df	Significance	
				95% Confidence Interval of the Difference Lower	Upper			One-Sided p	Two-Sided p
Pair 1 WTA - WTP	5.98651920	8.54594952	1.78195366	2.29097351	9.68206490	3.360	22	.001	.003

#### Paired Samples Effect Sizes

	Standardizera	Point Estimate	95% Confidence Interval	
			Lower	Upper
Pair 1 WTA - WTP	Cohen's d	8.54594952	.701	1.152
	Hedges' correction	8.69515192	.688	1.132

a. The denominator used in estimating the effect sizes.  
Cohen's d uses the sample standard deviation of the mean difference.  
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

## Appendix V.C. Independent Samples T-Test

### T-Test

[DataSet11]

#### Group Statistics

	Friends	N	Mean	Std. Deviation	Std. Error Mean
Difference_ratio	1.00	11	.2254	.15540	.04685
	.00	12	.1116	.05857	.01691

#### Independent Samples Test

		Levene's Test for Equality of Variances				t-test for Equality of Means				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Difference_ratio	Equal variances assumed	3.478	.076	2.364	21	.014	.028	.11380	.04813	.01370	.21389
	Equal variances not assumed			2.284	12.580	.020	.040	.11380	.04981	.00582	.22177

#### Independent Samples Effect Sizes

		Standardizera	Point Estimate	95% Confidence Interval	
				Lower	Upper
Difference_ratio	Cohen's d	.11531	.987	.106	1.847
	Hedges' correction	.11964	.951	.102	1.780
	Glass's delta	.05857	1.943	.775	3.066

a. The denominator used in estimating the effect sizes.  
Cohen's d uses the pooled standard deviation.  
Hedges' correction uses the pooled standard deviation, plus a correction factor.  
Glass's delta uses the sample standard deviation of the control group.

## Appendix V.D. Chi-square Test

### Crosstabs

#### Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Friends * Positive_difference	23	85.2%	4	14.8%	27	100.0%

#### Friends \* Positive\_difference Crosstabulation

Count		Positive_difference		Total
		.00	1.00	
Friends	.00	8	4	12
	1.00	1	10	11
Total		9	14	23

#### Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.987 <sup>a</sup>	1	.005		
Continuity Correction <sup>b</sup>	5.753	1	.016		
Likelihood Ratio	8.811	1	.003		
Fisher's Exact Test				.009	.007
Linear-by-Linear Association	7.640	1	.006		
N of Valid Cases	23				













a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 4.30.







b. Computed only for a 2x2 table







#### Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.589	.005
	Cramer's V	.589	.005
N of Valid Cases		23	

## Appendix VI. List of Products for the Experiment

No	Product	Product category	Description	Friends / Strangers	Initial WTA	Initial WTP	Average	Difference from average	Final price
1		Home	Bronze colored metal ashtray	Strangers	10000	800	5400	400	5000
2		Home	Transparent green colored glass vase	Friends	55000	6000	30500	-	-
3		Home	Steffl brand bavarian beer mug	Strangers	4000	800	2400	400	2800
4		Home	Transparent blue colored glass ashtray	Strangers	2500	2000	2250	50	2200
5		Home	White metal candle holder	Friends	1500	1000	1250	250	1500
6		Home	Two blue ceramic candle holders	Strangers	2300	1000	1650	350	2000
No	Product	Product category	Description	Friends / Strangers	Initial WTA	Initial WTP	Average	Difference from average	Final price
7		Home	Brown tea pot and cup	Friends	4500	3000	3750	450	4200
8		Home	Gardening gloves	Friends	1800	1000	1400	300	1700
9		Home	Golden metal key chain	Strangers	6500	2500	4500	500	4000
10		Home	Vinyl CD cutting board	Friends	4000	1500	2750	250	3000
11		Home	Two glass mugs	Strangers	1500	1200	1350	150	1200
12		Home	Five small glasses	Friends	2500	1500	2000	400	2400

No	Product	Product category	Description	Friends / Strangers	Initial WTA	Initial WTP	Average	Difference from average	Final price
13		Home	Kürtőskalács baking dish	Friends	4000	1500	2750	610	2140
14		Home	Collection of shells	Friends	5000	3700	4350	450	4800
15		Home	Two glass containers	Strangers	16000	500	8250	1250	7000
16		Home	Mug with cover and spoon	Friends	4150	2000	3075	725	3800
17		Home	Four green ceramic shot glasses	Strangers	2000	2500	2250	250	2000
18		Home	St Georgen bavarian beer mug	Friends	14000	3000	8500	3500	12000

No	Product	Product category	Description	Friends / Strangers	Initial WTA	Initial WTP	Average	Difference from average	Final price
19		Clothing	Burgundy knitted hat	Friends	3500	1500	2500	1500	4000
20		Clothing	Orange knitted hat	Strangers	8500	2000	5250	750	6000
21		Home	Hip flask with dogs on it	Strangers	2000	7000	4500	500	4000
22		Home	White ceramic ashtray	Strangers	2000	1200	1600	200	1800
23		Clothing	Brown knitted hat	Strangers	1500	1500	1500	0	1500
24		Clothing	Yellow knitted hat	Friends	4000	3400	3700	300	4000