

A STUDY INTO THE CONDITIONS FOR
REESTABLISHMENT AND PERCEPTIONS
OF PEER-TO-PEER LENDING IN UKRAINE

by

Artur Burak

A thesis submitted in partial fulfillment of the
requirements for the degree of

MA in Business and Financial Economics

Kyiv School of Economics

2023

Thesis Supervisor: _____ Prof. Oleh Nivievskiy _____

Approved by
Head of the KSE Defense Committee, Professor [Type surname, name]

Date _____

ACKNOWLEDGMENTS

The author wishes to extend gratitude to

1. Prof. Elena Besedina for primary supervision of the project at the Research Proposal and Term Paper stage,
2. Prof. Oleh Nivievskiy for assistance in the relatively obscure field to him and patience facing the author's poor time management,
3. Valentyn Litvinov for sharing the World Bank's High-Frequency Business Pulse Survey questionnaire that inspired the creation of the current study survey form
4. The anonymous people at the Finance.ua forum for leaving fossilized evidence of the burgeoning industry never to mature by the time of this Thesis' writing,
5. His mother, Olena, for assistance in locationally randomizing the survey response sample and making sure the study is completed in time, and
6. His boyfriend, Yurii, for being the best ever distraction from it and a motivator to complete this study.

TABLE OF CONTENTS

| | |
|--|----|
| LIST OF FIGURES..... | 3 |
| LIST OF TABLES..... | 4 |
| LIST OF ABBREVIATIONS..... | 5 |
| Chapter 1. Introduction..... | 1 |
| Chapter 2. Industry Overview and Related Studies..... | 4 |
| 2.1. A review of claimant enterprises to the P2P-lending business model..... | 4 |
| 2.2. Techno-economic aspects..... | 6 |
| 2.3. Risk mitigation..... | 8 |
| Chapter 3. Methodology..... | 10 |
| Chapter 4. Data..... | 16 |
| Chapter 5. Results..... | 21 |
| 5.1. General Survey Results..... | 21 |
| 5.2. Econometric Modeling Results..... | 23 |
| Chapter 6. Conclusions and Recommendations..... | 26 |
| REFERENCES..... | 31 |
| APPENDIX A..... | 1 |
| APPENDIX B..... | 4 |

LIST OF FIGURES

| <i>Number</i> | <i>Page</i> |
|---|-------------|
| Figure 1. The survey structure | 12 |
| Figure 2. Decision to advise the platform | 16 |
| Figure 3. The number of people to be advised | 16 |
| Figure 4. Age of the respondents | 16 |
| Figure 5. Where are the respondents located | 16 |
| Figure 6. Location size of respondents | 17 |
| Figure 7. Respondents' educational attainment | 17 |
| Figure 8. Ease of use index distribution | 18 |
| Figure 9. Correlation matrix of the dataset | 19 |

LIST OF TABLES

| <i>Number</i> | <i>Page</i> |
|---|-------------|
| Table 1. Summary characteristics of the model dataset variables | 19 |
| Table 2. Summary of the probit model fit | 23 |
| Table 3. Direct interpretation of the model findings | 24 |

LIST OF ABBREVIATIONS

NPL Non-performing loans

FB Facebook

PB PrivatBank

ppl. People

SOE State-Owned Enterprise

Adv. to acq. Advice to acquaintances

EoUI. Ease of use index

CHAPTER 1. INTRODUCTION

Peer-to-peer (person-to-person, between-person or P2P-) lending is a business model that developed from the microcrediting relations in the mid-to-late 2000's. Generally it is Tinder for money: through a technological intermediary an individual can find whom to borrow from or to lend funds to with the entity in between directly involving the sides with each other. Moreover, that entity does not have to issue deposits/credits, hold funds in reserve or to bear the loan risks since they have been relegated to the lenders themselves. Nowadays, with the development of more dynamic sectors of the economy, like cryptocurrencies, such risks have become wider accepted. But that does not leave the platforms without work: trust facilitation and loan agreement completion are their primary operative tasks.

P2P-lending services do not require strict regulation by the central banks since they do not bear systemic risk to the financial system. Said companies usually host the data, an offer link-up matching algorithm and accomplishes formalities pertinent to between-person borrowings. Usually this can be found in a mobile app or a standalone website, but the proliferation of messaging apps like Viber, Telegram, WhatsApp or FaceTime warrant a spread of the model into that space as well to be all the more accessible to the public.

Accessibility and lack of negative reputation are the key attractors to business-model: the gig economy, developed through the pandemic and wartime opportunities, also requires capital and is not serviced by the conventional banking industry - people may be honest in front of their counterparts, but the loan term may be too short or the collateral assets - too innumerable to warrant financing. Then, in the developing or stagnant economies, p2p-lending apps are crucial in informing the sources of spare funds and the mass of entrepreneurs seeking minimal barriers to venture entries.

Furthermore, banks and microcredit agencies appear to be loan sharks or faceless corporations that have little regard towards ethics, law or humanity, notorious for exorbitant interest rates reaching a thousand percent per annum. Thus, a physical human on the other side of the deal, with some compassion and flexibility, makes up a positive initial image of peer-to-peer lending that can distract customers from conventional financial services.

In addition to the aforementioned opportunities, restoration of the destroyed houses, shops and minor/shadow enterprises after the ravages of war needs to take place. In the meantime domestic banks tend to invest into short-term interbank loans and government bonds (ЕКОНОМІЧНА ПРАВДА, 2022) and foreign capital awaits for the hostilities to cease and to face institutional challenges of corruption instead. Hence more pressure mounts on people on the spot to support each other to rejuvenate the economy disrupted by the ongoing invasion. But in Ukraine the p2p-lending business model, relieving that pressure, evidently, has not seen much success yet.

This paper will be a study into the enablers for the reestablishment thereof: it will host an overview of the claimant enterprises, current risks, actionable strategies thereon and customer sentiments. It will also be host to econometric modeling into the population's propensity to advise to use a platform of this kind should it appear in Ukraine. An action plan will be laid out for any upcoming peer-to-peer lending project to become a long-term sustainable business venture.

What are the main results of this study? Peer-to-peer lending hides behind its name a graveyard of projects. They either are blends of more traditional approaches to investment or are a genuine business that have been too slow to resolve their own problems and ended up as a space of non-performing loans.

This means that a more comprehensive risk mitigation strategy should be performed and this involves a whole combination of actions tackling various actors and scenarios.

For example, what should be done to find out those wanting to take a loan, declare bankruptcy and run with the funds? Find them out beforehand with data analysis tools. What should be done to ensure the person does not falsify their credit history and collateral? Link-up with ДІЯ and the Ukrainian Bureau of Credit Histories. What should be done to avoid lenders from trapping themselves in high, but imperformable, interest rates? Maybe inform them about the rates anywhere else? Quite probably.

To understand the most about this field nowadays the researcher needed to conduct a survey. It had to measure financial needs and capabilities, the stances towards various means of credit and to obtain more information on their lending/borrowing histories with a prospect of them being matched with the other respondent, should they permit it.

Down the line laid confirmatory econometric analysis. The launch of the survey was successful, but that was not enough and ideals in this research had to be cut down into a parsimonious probit model that by proxy evaluates whether one would want to use the platform. Nonetheless, positive tentative conclusions can be made about the receptiveness to peer-to-peer lending and a prompt appearance of a startup of this kind can be well congratulated. But this does not take off the burden of risk mitigation from whoever tries to implement it in Ukraine in 2023.

CHAPTER 2. INDUSTRY OVERVIEW AND RELATED STUDIES

2.1. A review of claimant enterprises to the P2P-lending business model

Market research resulted in 8 ventures claiming to offer this fintech service. Only one of them was undeniably a p2p-lending platform, but it is not operating as of Summer 2023. Only one other enterprise works nowadays (Appendix A), though its p2p-ness is doubtful. Three more enterprises have some evidence suggestive of their previous existence (same Appendix). The rest of them went into obscurity in all but name. Most often said claimant is a project by a bank or a corporate investment fund to attract retail investors by seemingly connecting the borrowers to them and slightly higher interest rates. This does not constitute peer-to-peer lending since the intermediary directly cherry-picks the borrowers and at times - outright buys the loans from the lenders to secure returns for the investors and to have excess interest as profit.

FinHub, in contrast to the aforementioned approach, launched itself in April 2018 as a rightful contender for the first and only p2p-lending platform. All the evidence to its existence can be sourced from two places - the previously saved versions of the site on WebArchive and extensive anecdotal evidence of its users with proprietary analysis on finance.ua's dedicated forum to the business-model in question.

A few months after its inception, the site has generated borrower-lender traffic and clout. It predominantly hosted consumer loan offerings: people used the funds as some sort of excessive spending and returned them whenever the payday came around. The platform allowed for multiple people separately investing into one such loan offering.

It had a proprietary scoring algorithm, categorizing them 6-way (A-F), to assess the risk of loan non-performance. Initially the problem was lack of present scoring agencies' rating use, which biased the risks downward: at one time the highest-rated offer had a 20% default probability, leaving little-to-none of the agreed upon interest to the lender if it all panned out. And soon after it didn't: non-performing loans started clogging up

the platform within half a year of the service's operation. Without extensive and detailed data provision on both the loans and borrowers to the lenders, they complained, started losing funds to either deferred loan payments or lack thereof entirely.

Such instances were bucketed by duration: 1-week and 1-2-3-months with varying approaches to collection. To remedy the problem, FinHub contracted a collector agency, bringing inconsistent results throughout the platform's existence. Though, give them data and contacts, the lenders would've been happy to sue the borrowers in court themselves, but the intermediary refused that offer. Neither was the second-hand loan market allowed, leaving the lenders tangled in the NPLs.

The platform, beside the commission fees from both principal (10%) and interest (unknown), took collection fees to pay for said service, often leaving the lenders in the net losses. This disparate revenue structure neutered the incentive for the platform to ensure returns for its customers. Soon after, neither they, nor the borrowers, owners or management of the platform had interest therein: the latter saw change in the ranks that followed a series of service failures and allegations of credit postings for internal use (not proven to have taken place). Over 2021 the platform ceased its operations entirely and most of the funds were returned.

The story of FinHub is a cautionary tale of what to fear and avoid in establishing this business model: lack of transparency, information processing and distorted incentives allow for delinquency-intended borrowers to take money practically as a gift disenchanting the lenders and leaving a stale marsh instead of a long-living successful business. Further risks will be elaborated upon and strategies to mitigate them will be established along the way.

2.2. Techno-economic aspects

To become a provider of p2p-lending services, technical requirements and their economic implications need discussing. To establish this kind of enterprise one would tentatively need a medium of the platform's propagation, software within it to interact with and to physically coordinate the users, a database to store data put in by them, computing power to process inputs and to enact a matching algorithm, some sort of payment processing to collect revenue for access to the counterparts or fees for accomplishing a loan agreement and an interaction with electronic signatures and official documents to make agreements binding and enforceable.

Propagation. A website or a mobile app is usually used in today's gig economy, to which the business model at hand caters. It is independent of the platform's advertisement medium. But, for one, switching between sites and leaving unrealized sign-ins is in low regard by the users. And, for two, development of a mobile application can cost between USD 10 tsd. and 0.5 mln (spd load, 2023) and will not be worth it without thousands of downloads taking place. Chatbots are a good option: messaging apps have faced a usership surge since the recent russo-Ukrainian war escalation. Telegram, as well as Viber, WhatsApp, FB Messenger, etc., allows for bots for people to interact with a program like chatting with a physical person. In this context, registration, offering presentation and creation, notification, communication and formal procedures can be handled within one chat. This method is cheap: a programmer and a few hours of work can be enough to create and seamlessly advertise one to nearly a third of the Ukrainian population, according to Kantar's October 2022 rating of site use (Детектор Медіа, 2022). But there are privacy concerns: anecdotal evidence is present of deleted chat data collected by the russian intelligence and security services and presented as evidence against the Ukrainian activists at interrogations in the occupied territories. This warrants depersonalization of the data inbound towards the bot or a workaround to the site for registration of new users, presentation of documents etc.

Database and software. Data security concerns require a separate database to store and process it. This also allows for multiplatforming: 6 separate messenger bots, a website and a mobile app at maximum can be synchronized. The base will store registration data of the users, their borrowing/lending offers, loan agreements, previous lending history, reviews and possibly - minor documents on credit score or collaterals. Data analysis can be performed there. Security and maintenance of the base will accrue much higher costs. According to Ante Javor, hosting a network with 1.5 million users that interact with each other on average almost 19 times will cost at most USD 10 tsd.

Matching algorithm. The taxonomy of peer-to-peer lending platforms laid out by Zhao et. al. (2017) needs consulting. The aspects in question are the trading rule and reward type. The authors offer auctions on the lowest interest rate or fundraising efforts. With the current variety of serviceable locations and purposes, there may not be enough lenders to compete in an auction for the borrower. In the latter instance the appearance of a single lender may not quickly fulfill the whole borrower's demand, causing the termination of the connection. Thus do I offer the platform to be a listing match board (my own new approach, the aforementioned Tinder for money) for the borrowers and lenders to themselves decide whether to invest into available calls or to place an own listing and wait for newcomers borrowers. As well, already listed offerings can be adjusted throughout the whole period of availability and split so as to at least partially satisfy the request through the deals. This model has been used in FinHub and there's little reason to change it.

Reward method is a simpler matter: commercial credit to the gig economy and startups will be serviced by the equity-based platform (i.e. profit-sharing). Immediately, to fill in the void in consumer credit and to overtake the banking sector, a lending-based platform should be established (interest rate can be set to zero for aid purposes). Further, a donation-based platform can be developed on its base, though then cooperation with mail or wire transfer providers needs establishment. The latter, more direct and usable, according to Forbes (2023), costs up to 0.14% per transaction.

Documents and signation of agreements. The former requires a secure way to store data about their existence (ДІЯ, the state's administrative web-handler, is an option, though private interaction with it is unknown) and the latter - a connection to the service that facilitates the ratification of the borrowing document through the electronic digital signature. That may incur a transfer of the interaction from the bot to a third-party site (e.g. Вчасно). This company requires a subscription above UAH 6000 per annum for the whole enterprise, supposedly including intermediation agreements.

In total, database handling would cost UAH 362.81 tsd. (as of 1 November 2023, exchange quote from NBU). Up to UAH 338.45 tsd. will be spent as wire transfer fees, UAH 6 tsd. - on document signature and UAH 1.519 mln. - on credit history verifications, assuming 100 tsd. people at maximum borrow through the platform. UAH 245.58 tsd. would also be allocated for the staff of programmers, data analysts and lawyers (USD 3tsd. for each category of no less than one employee). These expenses total UAH 2.47 mln. Those can be the maximum estimate of the expenses figure, but this also suggests that, despite easy costs of entry, some capital may be needed to develop the product further.

2.3. Risk mitigation

Suryono et. al. (2019) conducted a computerized systematic literature review on this topic. The following risks should have resources immediately directed to: information asymmetry (pertaining to credit history, stated and evident use match, and delinquency intention) and greed bandwagon, causing lack of trust, failed (unreturned) credits and fraud accusations. One more risk is relevant to and persistent in the post-colonial environments (e.g. Ukraine): use of force to take back or away the funds.

To mitigate information asymmetry in credit history presentation a partnership with a credit scoring company can be established from the start-up phase. Querying it can cross-reference historic data. The easiest may be Kyivstar's evidently free telecommunications' screening API. Another one is the Ukrainian Bureau of Credit

Histories. They charge up to UAH 15.19 per report, according to their website. In-house methods can involve data analysis tools like quantitative and text mining risk predicting algorithms. FinHub largely failed to predict the non-performance of the initial loans, thus greater emphasis on it is operationally required to approximate the risk premiums as soon as possible since launch. In the environment of little-to-none risk bearing for the intermediary, information is the nearly a prominent way to reduce the investor's risk.

Stated and evident use match can be ensured with intermediate reporting of the progress on the loan. This can be done through arranging a video call as it is done with verifying households on dom.ria.com.ua. It would be enough for the platform to programmatically arrange one and provide feedback on both sides that all went according to plan.

Delinquency intention, aside from data analysis methods, can be mitigated through extensive, informative and interactive tutorials. Those can be about the essence of lending, the reasons why one lends or borrows and the possible risks involved as well a solution. To foster trust and to develop long-term relationships, both with the customer and the platform, they can be offered to start small and incrementally increase the loan amount in circulation.

To avert greed bandwagon, interest rates from other banks, lombards, microfinance organizations for various purposes can be displayed as well as a loan calculator - to ascertain the possible cash flows for any duration and interest rate.

In case of violence or theft, legal aid can be presented.

Finally, connection to ДІЯ can help in verifying the documents. Being hosted on this service, they can be accessed by the platform to prove validity without the need to download them and relegating the risk to the government of Ukraine.

CHAPTER 3. METHODOLOGY

Initially, this part of the study hosted a beachhead market analysis. This was going to be done to produce a revenue estimate that would have supported the expenses for technical realization of the start-up business and relevant risk mitigation. However, for multiple reasons, this did not eventuate and pragmatic solutions were to be found. Thus, this study turned itself from feasibility into sentiment analysis and the following two chapters will be dedicated to the empirical evidence collected thus far.

To measure the current stances towards various lending options, including the peer-to-peer approach, a survey needed conducting since no such information was to be found. It had multiple aims to accomplish and to find out, formulated in the following questions:

1. How do demographic variables affect everything stated below (age, sex, familial status, codependencies, region, settlement size, education and/or employment)?
2. What are the financial capabilities and needs of the respondents (income, savings, propensity to save income up, desired loan amount or acceptable deposit outlay)?
3. Do they intend to enter credit relationships? And on which side?
4. If yes, what those credits/deposits would entail (purpose, collateral, term, interest rate)? How much lending would be enough to turn it into a standalone business?
5. If they wanted to borrow or lend funds and they had a history of credit relationships beforehand, how did it evolve? (What was the last counterpart? How long ago did it happen? How many times did they borrow/lend? Lender/borrower multiplicity, loan amount and interest rate, payment deferrals or defaults, attempts to return the funds by force or outright theft.)

6. How will the respondents' perception of interest rates change, if they were presented various quotes on market options? (And on which aims will they be ready to postpone or outright cancel interest payments?)
7. What do the respondents think about commercial banks (as lenders or borrowers), microcredit organizations, lombards, individuals (be it relatives, friends, acquaintances or near total strangers)? Do they know about credit unions?
8. What share of commercial banks', payday loan companies' and lombards' clients can be intercepted by the prospective between-person lending start-up? (based on whom they previously borrowed from / lent to and whom do they now prefer to engage in this manner)
9. What share of absent clients (people leaning on informal lending due to cumbersomeness of formalities or ineligibility for bank loans) can be tapped as a customer base?
10. How often do they see advertisements about financial products? How often do they act up on it?
11. On what conditions and with which incentives will the respondents engage the between-person lending platform should it appear in Ukraine?
12. How will the information about it spread? How wide and with what success rate (defined as a use case)? How will the prospective users use the platform (what side of the credit relationship will they take?)

All in all, this survey can be a source of data for further investigations in the p2p-lending sphere: what matching algorithm should be deployed in the nowadays local context, how do people postpone and at all refuse to return credits, how do people react to such events etc.

The survey, the full questionnaire to which is put into Appendix B has been performed electronically, via a Google Form throughout August 2023. It was attempted to be distributed through snowball sampling, starting from any and all acquaintances of the

researcher and their family everywhere. Due to the lack of networking capabilities, the response sample was not expected to be numerous.

The survey contains 9 chapters - half a dozen questions each. The respondents don't need to go through all of them: they are free to end the response upon completing any of them. As well, the respondent's path is based on their willingness to enter credit relationships, which side they are going to enter them on (borrowing or loaning) and presence of the previous credit history.

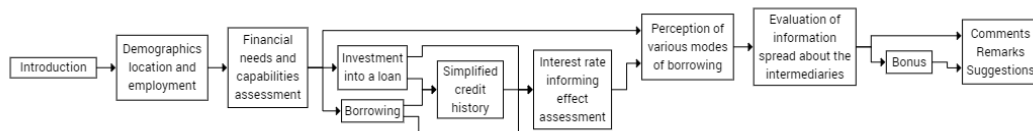


Figure 1. The survey structure

The respondents were as well encouraged to answer the form through to the end to obtain a complete picture of the person. The encouragement was to apply for the researcher to find a matching response and exchange contact information so as to accomplish a simplified peer-to-peer lending operation. This offer was free, voluntary and non-binding, but the applicant could be disqualified from the match-up attempt if they intentionally did not return the loan or used violent means to accomplish the opposite, as per they stated so. The responses to questions regarding that, no doubt, could be subject to fraudulent answers, but at least the respondent did not know beforehand the response could mean anything within the questionnaire (data was to be anonymous and used only for academic purposes). Nonetheless, no respondent used the opportunity.

The obtained data disallowed the calculations regarding aim questions 8 and 9 (the latter did not even have a dedicated question, whether they would choose the peer-to-peer lending platform or would still go on through informal connections, but

their response to aim question 11 could suggest their willingness to switch over). Similarly, data preceding aim question 12 could not be econometrically modeled and forecasted in a timely and labor-efficient manner. Thus the whole beachhead market effort had to be scrapped.

A new empirical and econometric approach had to be found. Thus, research went down to determine what affects the spread of information about the between-person lending platform. Havrylchyk et al. (2019) have shown that “the expansion of the P2P lending platforms is faster in countries with more educated, urban and young population”. Septiani et. al. (2020) have shown that “effort expectancy” being “the perceived easiness of using a technology” “has a positive effect on behavioral intention to adopt P2P lending”. These two, most tangible and least conceptual, results can be attempted to be replicated in the Ukrainian context.

The survey contains the questions about the respondent’s demographics (specifically - age, education and how big their locality is). As well, the response to the incentive and conditions questions can be interpreted as the perceived ease of use - if they want to have it in the platform, they probably would want to use the one that has that. Finally, there is a question about how many people would the respondent suggest the platform to once it appears in Ukraine. Thus, there is a dataset to accomplish some sort of a confirmatory econometric analysis.

Beforehand, data preparation had to be done:

1. The variables needed converting into dummy ones due to Google Forms collecting the data in the form of responses directly written into the questions.
2. The education variable was to be compiled into a specific numerical variable pertaining to the years of schooling completed (for high school - 11, junior specialist - 13, bachelor alumnus - 15, specialist [abolished in 2016, but still having living graduates] - 16, and masters alumnus - 17).

3. Considering the realities of urban habitation, the location size variable was to be transformed into a binary one regarding whether the place is the regional/oblast center or not.
4. The question, from which the ease of use metric was to be obtained, had numerous options that would result in overspecification of the upcoming model. Thus, they were integrated into an index variable with the values ranging from 0 to 1, being a simple average of the approved choices to the question by the respondent (ones), divided by the number of such choices. There are 12 such variables:
 - a. Should the platform have a website?
 - b. Whether the platform should have a mobile app?
 - c. Whether the platform should have a chatbot in messaging apps like Telegram, WhatsApp, Viber etc.?
 - d. Whether the platform should allow for easy link-ups of the users' credit histories?
 - e. Whether the platform should allow for safe provisions of documents proving collateral or guarantees of return?
 - f. Whether the platform should allow investing into formal business ventures rather than consumer loans?
 - g. Whether the platform should allow for multiple to borrow a portion into the same loan amount ?
 - h. Whether the platform should allow the borrowers to invest into multiple loans simultaneously?
 - i. Whether the platform should coordinate meetups to decide final aspects and transfer the cash?
 - j. Whether the platform should have the opportunity for wire transfers?
 - k. Whether the platform should have payment reschedule or delay functionale?

1. Whether the platform should offer emergency legal services in case of theft or violent coercion to return funds?
5. The dependent variable was to be converted: it is beneficial to have the numbers of people to be suggested the platform to (it will be elaborated upon in the next Chapter), but with this small a sample the probability of suggestions will be a prudent option to predict. Thus, any non-zero value thereof was to become 1.

Having done all that, a dataset for further modeling can be obtained. Since a portion of the respondents managed not to answer the final question entirely (or due to error in compiling the form) or answer it in the way not required from them (e.g. 40% rather than 11; it's unknown, what from does the percentage derive, thus the number is useless), such observations were to be dropped. In the end, there are 18 (out of 27, with the exclusion of the researcher themselves) specimens to be modeled upon.

Considering the permutations done in point 5 of the list above, probability modeling was to be performed. To that end, a linear, a logit, and a probit model was put under consideration. It is understood that the former model may produce prediction values of above one if the maxima of independent variables are reached and it itself may be inflexible to non-linear relationships. Thus the latter two were to be tested as well. The main difference is in the underlying functions: a logistical one versus the cumulative density function of the normal distribution.

The base respondent for the model is a low-educated person (secondary school graduate) from a small settlement.

CHAPTER 4. DATA

Let us first turn to the data used for modeling purposes. Then, given spare attention and space, descriptions on the whole response dataset can be done.

The dependent variable. Decision to advise the peer-to-peer lending platform is a variable transformed from the numerical response to the following question: once such a platform appears in Ukraine, how many people you deem it to be useful to would you recommend it to. Out of 18 people, 13 responded positively to such prospects versus 5 - negatively (72.2% vs 27.8%). Among the positive responses, the respondent would suggest the platform to 5 people on average with a standard deviation of 3.5 people (half the cases 3, the other half 4 - understandable). At maximum 11 people can receive the news about the platform's appearance.

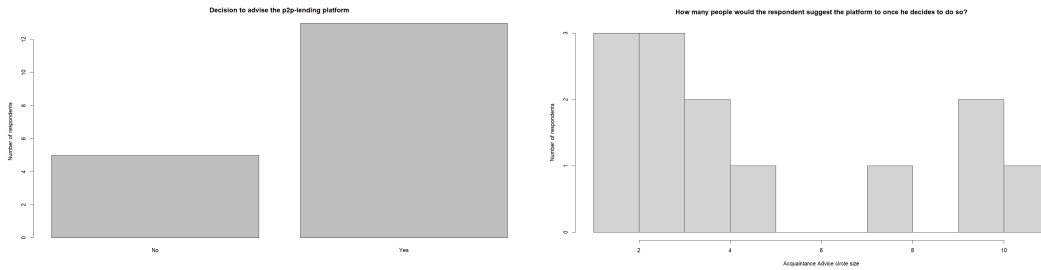


Figure 2. Decision to advise the platform Figure 3. The number of people to be advised

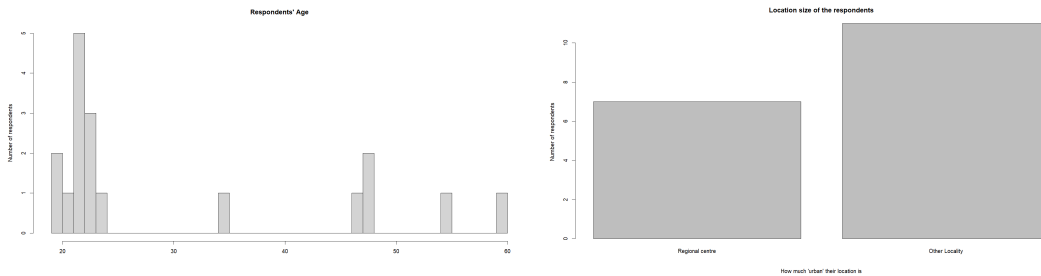


Figure 4. Age of the respondents Figure 5. Where are the respondents located

Independent variables. From the age plot it is evident there are two distinct clusters of respondents: the researcher and their opportune assistant have been gathering responses from two different locations, leveraging their acquaintance networks to launch the snowball sampling, but not to much avail. The one group is a young populus and the other - middle-aged adults.

The sample population is urban, but to a various extent: 7 people (38.9%) come from a regional/oblast center, 8 people (44.4%) - from other large cities, 2 more (11.1%) - from small cities. One more respondent is from a large settlement. The distinction between city size and it being a regional center lies in the presence of administrative relationships not present in other cities in the region. Those foster additional demand for financial services from the administrative personnel. As well, regional centers in Ukraine are considerably larger than other cities so greater concentrations of wealth and acquaintance networks can be found. The presence of large non-center cities in the northern, central and eastern regions (plus e.g. Kamianets-Podilskyi in Khmelnytskyi region) prompts the researcher to add a large city category into the survey form.

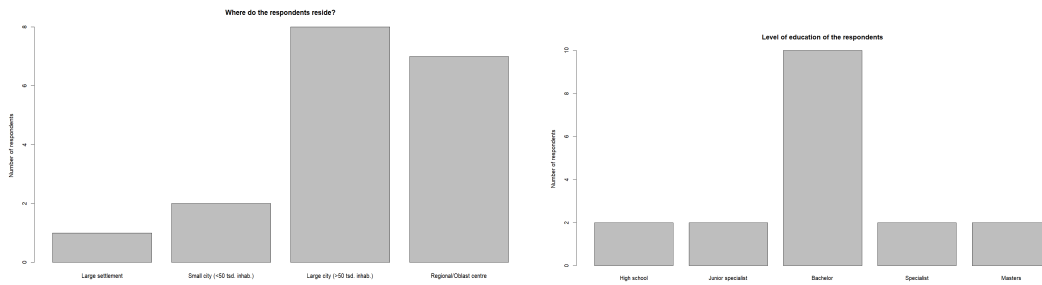


Figure 6. Location size of respondents Figure 7. Respondents' educational attainment

Most respondents have a bachelor's degree, though variances in data here are also present. An educated population is more receptive to the adoption of new technologies since they have had experience of being taught, for example, statistical software.

Now let us turn to the Ease of use index. It is compiled based on the following chosen options regarding the conditions and incentives to nudge the respondent to use the p2p-lending platform that can make its use simpler for the person:

1. Presence of a website;
2. Presence of a mobile app;
3. Presence of a chatbot in a messaging app;
4. The opportunity to safely upload one's credit history onto the platform;
5. The opportunity to safely upload one's documents proving the presence of a collateral onto the platform;
6. The opportunity to invest into business ventures (in contrast to consumer credit or more formality-intensive approaches to borrowing to a business);
7. The opportunity to have multiple lenders to one credit relationship;
8. The opportunity to lend funds to multiple people simultaneously;
9. The functionale to coordinate a meet-up to arrange the miscellaneous aspects of a loan and to hand over the cash;
10. The functionale to perform a wire transfer of the loan amount;
11. The functionale to arrange a postponement of the credit payments; and
12. The functionale to call-up emergency legal services in cases of intentional theft of funds concealed as a default or use of violent means to retrieve funds.

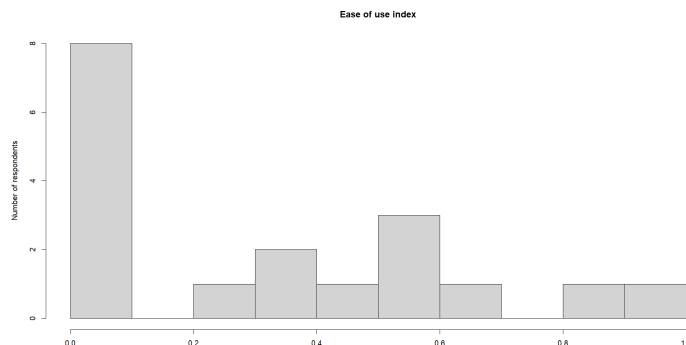


Figure 8. Ease of use index distribution

| Variable | Minimum | Mean | Maximum | Std. Dev. |
|----------------|---------|-------|---------|-----------|
| Adv. to acq. | 0 | 0.72 | 1 | 0.461 |
| Age | 19 | 30.83 | 60 | 13.934 |
| Region. Centre | 0 | 0.389 | 1 | 0.502 |
| Education | 11 | 14.67 | 17 | 1.68 |
| EoUI | 0 | 0.329 | 1 | 0.323 |

Table 1. Summary characteristics of the model dataset variables

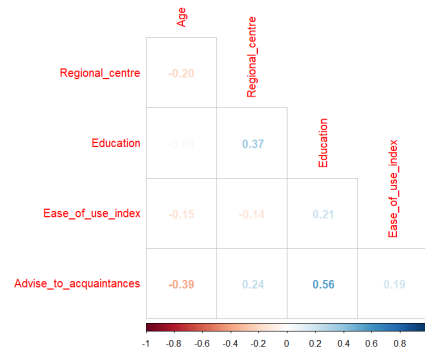


Figure 9. Correlation matrix of the dataset

Now let us turn to other relevant and interesting findings from the survey:

1. 4 out of 27 respondents (14.81%) appeared to be abroad - one in Norway, one - in France, one - in England and one - in Hungary. 15 people were from Khmelnytskyi region (55.56%), 5 - from Kyiv city and region (18.5%), and one from each Rivne, Zaporizhzhia and Chernivtsi regions
2. 2 out of 27 people (one comes from abroad) were willing to partake in the credit relationships - all on the side of lenders.
3. 1/3 of the respondents are employed in some high-skilled jobs, nearly a third are private proprietors, up to 15% - low-skilled jobs and 11% are unemployed.

4. Half of the respondents attain tertiary education simultaneously with employment
5. 8% of the respondents do not have any monthly income. Same number has enough for sustenance. 14.8% have enough for that plus utilities. 29.6% - for all mentioned plus clothing. A quarter more has enough for all that plus a smartphone or a computer. 14.8% more have enough, in addition, for furniture and home appliances. To simplify the assessment respondents were not obliged to answer with the precise amounts, though those values can be imputed through average expenditures on the aforementioned items.
6. 1/3rd of the respondents do not have any savings. Almost 30% of them have enough for 3-6 months of sustenance, utilities and clothing. 7.4% each have enough for that plus smartphone+PC and all that plus furniture and home appliances respectively. 18,5% have enough for a vehicle in addition to everything mentioned. 3.7% have enough for all that + personal luxuries (e.g. jewelry or paintings).
7. The respondents save up 21.6% of their income once it appears in their hands with the standard deviation of 17.6%
8. 50% of the respondents hold banks as lenders/borrowers in high regard (versus 1/6th each - in low regard and neutrally respectively). Microcredit organizations are perceived well by only 5.5% of the respondents and 72.2% - poorly. Lombards: 1/6th - positive stance thereto, 55.6% - negative. Peers (relatives, friends, acquaintances and near strangers combined): 55.6% - positive, 11.1% - neutral and same - negative perception.
9. The respondents most often faced adverts from payday loan organizations with banks' being half as often. Lombards' ads are seen 10 times even less often, whilst offerings from peers are seen 1.5 times furthermore rarer (in total - 28 times less often than banks).
10. In 78% of the cases the advertisements were not even looked up for details.

CHAPTER 5. RESULTS

5.1. General Survey Results

The survey, destined to be a part of an ambitious calculatory undertaking regarding the prospective revenues of a between-person lending startup, has remained the only somewhat successful part of the original feasibility study, apart from market research. In that context it was going to be used to assess the market interception rates and the speed of information spread about the business model.

It perhaps is the only piece of empirical evidence performed in an academic setting in the field by the time of the study's writing. Previous Ukrainian studies into the peer-to-peer lending market were more dedicated towards describing foreign experiences (Matseliukh, 2022) and/or providing policy advice (Lavryk, 2016), but not really - understanding the perceptions of it by the Ukrainian population or providing preliminary calculations into the costs and revenues of the model to assess its viability.

The survey, despite the success in its launch, did not manage to garner support in propagation to achieve random sampling and representativeness. It failed to obtain attention of the academic community to assist in spreading it towards the wider populus so as to cover the gaps in age, education levels, location, to provide greater clarity to the intentions to enter credit relationships, desired credit and credit history specificities. Nonetheless, the survey presents preliminary evidence that already can corroborate other studies and can teach further research into the field.

For example, a World Values Survey for Ukraine (YLIČII, 2020) showed that only 5% of the respondents turned to borrowing funds and nearly 14% - managed to save them up, a quarter of the people have been simply using up the spare funds, whilst a near half - lived without engaging with the savings outlays. In the current context, when considerably more funds are being expensed on relocations, repairs, donations to the

Armed Forces of Ukraine and other state entities or private charities, or to bear the inflationary pressures, the 7% readiness to enter credit relationships with the rest being unwilling to do so can be attempted to be considered both a confirmatory and a trend-setting observation: for the third year in a row (and with a perspective to enter the fourth year in that manner) people are dwindling their savings amounts facing insurmountable challenges. This requires alleviation through both one-sided benefits and mutual economic relationships and nowhere near can this be achieved more promptly than through individuals assisting each other to fund repairs, smoothen financial logistics hurdles and invest into new small enterprises and gigs.

There are some positive news: people are ready to be drawn towards the peer-to-peer lending projects: 18 out of 23 responses (78.2%) towards the question about the conditions and incentives relegated to the prospective platform have chosen some sort of the facility within the platform: be it related towards ease of use or trust facilitation. Most often they wanted the platform to

1. safely provide collateral documentary proves (83.3%),
2. provide emergency legal services (77.8%),
3. allow to invest into formal business ventures rather than consumer loans (72.2%),
4. have a mobile app and wire transfer opportunities (66,7%),
5. educate trust and provide 5% higher lending rates (61.1%),
6. coordinate meetups (50%),
7. have 5 times lower borrowing rates, link-up credit histories and have a website (44.4%),
8. be able to have multiple borrowers to one loan amount (38.9%)
9. have a chatbot in messaging apps (33.3%)
10. invest into multiple loans simultaneously and to have payment reschedule or delay functionality (27.8%)

5.2. Econometric Modeling Results

Despite the lack of data, econometric modeling has been successfully performed. Yet, the lack of representativeness and observations tampered with the success of the relationship between the model and the best practices regarding its characteristics.

In the end, a probit model of choice has been estimated. It describes a relationship between the person's decision to advise the platform to acquaintances and the person's age, their presence in a regional center, education and how easy, they perceive, is the platform to use. The fitting results are in the table below.

| | Decision to advise |
|-----------------------------------|--------------------|
| Age | -0.056 (0.041) |
| Regional center | -0.211 (0.899) |
| Education | 0.600* (0.354) |
| Ease of use index | 0.115 (1.288) |
| Constant | -6.462 (4.461) |
| Observations | 18 |
| Log Likelihood | -6.469 |
| Akaike information criterion | 22.938 |
| Note: *p<0.1; **p<0.05; ***p<0.01 | |

Table 2. Summary of the probit model fit

Considering that independent variable values, weighted by these coefficients, are fed into the cumulative density function of a normal distribution, these values cannot be directly interpreted for the marginal effects being flexible. Though preliminarily it can be said that no variable is statistically significant at 5% confidence. Nonetheless, the model befittingly predicted 88.89% of the observations. Still, the problem with lack of observations persists and one cannot yet state the findings of Havrylchuk et. al. and Septiani et. al. are disproven or not for the Ukrainian context. Now the average marginal effects need presenting:

| Variable | AME | SE | z | p-value | upper | lower |
|-------------------|--------|-------|--------|---------|--------|-------|
| Age | -0.011 | 0.008 | -1.474 | 0.141 | -0.026 | 0.004 |
| Ease of use index | 0.023 | 0.254 | 0.089 | 0.923 | -0.476 | 0.521 |
| Education | 0.119 | 0.058 | 2.031 | 0.042 | 0.004 | 0.233 |
| Regional center | -0.042 | 0.177 | -0.235 | 0.814 | -0.389 | 0.306 |

Table 3. Direct interpretation of the model findings

For an average respondent (of nearly ca. 31 years of age, with the ca. 39% probability of being from the regional center, most probably having a bachelor's degree and expecting to see ca. 4 facilities easing his use of the p2p-lending platform) becoming older by 1 year expectedly decreases the chances of them suggesting the platform to somebody on average by 1.1% (+/- 1.6% at 95% confidence interval). Expectation to see one more useful feature on the platform expectedly increases the chances by 2.3% (+/- 49.8%). One more year of educational attainment expectedly increases the chances by 11.9% (+/-11.3% - the only variable here with statistically significant average marginal effects).

But, what's not expected, presence in the regional center as opposed to any other kind of settlement is associated with a 4.2% decrease of odds to suggest a platform to

anybody else (+/- 34.7%). This is the only finding not matching the expectations provided by the aforementioned researchers. This cannot be treated as a certain rejection of the previous finding, but leaves space for further suggestions regarding urban environments.

The thing is, Herrero-Lopez (2009) pointed out that “Affiliation with Trusted Groups not only doubles the probability of getting a loan request fully funded, but also, establishes the scenario for borrowers with a priori non-bankable profile to get a loan with reasonable rates. Unattractive features such as high debt or low credit scores can be overcome by ... social capital such as affiliation with highly rated groups, endorsements or friend support.” In this study, it should be emphasized, due to lack of evidence on willingness to borrow or lend through the p2p-lending platform, willingness to suggest it to an acquaintance acts as a proxy thereto.

In the largest cities, being regional centers, friend groups can be more numerous, they can be larger and hold more funds, but in smaller cities larger shares of people can be entangled in the same acquaintance groups. Thus, a move towards or residence in a regional center entails facing more and larger circles of unknown people, with whom new friendships can be built from the ground up and endorsements can be deserved from scratch. In smaller localities, in contrast, the relationships are long since established and little change may occur - everyone knows each other and may be less prone to lend to each other. This may explain the discrepancy between being more urban and decreasing probability to suggest the platform to each other - 85.7% of regional center residents versus 63.6% of other locality residents would do so.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

Peer-to-peer lending is still a developing business model all over the globe. It is attracting billions of dollars in loan amounts and has recently spread with great haste all over East and Southeast Asia.

The model offers credit engagement to people distrusting banks for their questionable practices and payday loan companies for exorbitant interest rates. It often seems that people are more understanding about the sporadic tribulations in one's life and would not worsen their lives with immediate withdrawals. Similarly, people unable to take out a loan in the bank, but being honest and investing into uncharted or short ventures have an opportunity to obtain capital for their activities. Hence p2p-lending has some attraction thereto.

The model entails the intermediation services to find for each lender a borrower and vice versa. Said intermediary also refuses to take on responsibilities to store money with itself or guarantees to return the funds upon notice - this frees them up from much of the regulatory pressures in the financial sector, moving the model from outright banking to mere financial services.

In Ukraine this model has more than enough use: there is an extensive need for reestablishment of businesses and repairs of housing in the recently unoccupied territories. There are huge numbers of people with unstable or absent incomes that need assistance right before they obtain new jobs. There are people with spare funds ready to assist immediately, though they do not know whom to. Not really much is left for substitution since government aid is not all-encompassing, banks are hesitant to invest into the real economy and foreign capital awaits across the border to be hampered afterwards by the government discretion.

This there is a business case for between-person lending to be reestablished in Ukraine.

But there appears to be almost no entity existing in the field. Whilst numerous projects live inside the European Union or in Belarus, only one company exists now with traces of 6 more projects having died as of this paper's writing.

The problem with this business model's execution is either it's being implemented as a secondary marketing strategy to attract investors or it's being implemented to full extent but the risk management has been done poorly or with extensive delays. In this paper the case of FinHub is laid out: the flaws in the proprietary scoring algorithm coupled with lacking information flows towards the investors and inconsistent collection subcontracting led the company to collect a considerable amount of non-performing loans and a stalemate in the loan marketplace. In three years the company would quietly shut down after the initial fanfare.

Any future startup willing to enter the field needs the following elements to operate: the database infrastructure, a means of propagation, software to facilitate the operations, an algorithm to match-up borrowing and lending offers and a reward method to construct the incentives properly. All in all, the industry is pretty much free and easy to enter, but at maximum a company may need to pay up to UAH 2.5 mln in set-up and operation costs, so any start-up should be ready to seek venture financing once own cash reserves end,

Peer-to-peer lending, being the branch-off from banking and microcredit markets, inherits the ever greater risks than the latter two. Those risks involve information asymmetry with regards to the underlying information about the credit and the lender as well as data safety and greed bandwagon on the side of the investors. To mitigate those risks a whole batch of methods can be used: from data analysis methods to using government administrative services to informing about the interest rates to standalone extensive and interactive tutorials regarding credit relationships, trust construction and intentional delinquency detection - all these methods, if implemented well, can prolong the operations of the platform into perpetuity.

This study involved use of the fossilized evidence of p2p-lending use experience. Much of it was used in some sort of a forensic investigation into the deceased projects in the market. Nonetheless, a gap exists between the last start-up death and the present time. As well, no other study did delve into the intricacies of the prospective customers' minds. Thus novel empirical evidence was needed.

To that end a survey has been conducted. It contained 13 sections covering aims formulated in 12 questions. In general this template can be used for further studies in the field, ranging from match-up algorithms to risk detection and mitigation to being the first versions of the lending/borrowing offerings themselves. This study has probably become a pilot study in this aspect: the survey did not attract a lot of attention so as to obtain a huge response sample. Thus further runs of the study can be run with spin-offs into various subfields to achieve further understanding of the matter at hand. For example, the study initially aimed at discerning the possible revenues of the start-up company and this can be taken up as a continuation of this study.

Based on the data obtained from this initial survey run, despite the problems faced, econometric modeling has successfully been performed. In this case it was determined that the propensity of the respondents to advise the platform to their acquaintances, in an attempt to confirm the already established studies, should be regressed upon the age, level of education, presence in the regional/oblast center and a metric of how easy should the platform be to use it.

Since it is modeling of a decision, probability forecasting has been done: a probit model has been fit onto a snippet of the whole dataset pertaining to the aforementioned aspects. Beforehand data required some sort of cleaning and permutation so as to obtain a five-variable model with an innumerable sample for it to be fit upon. Since it is a non-linear model, it could not be interpreted directly: average marginal effects were to be extracted based on the model applied and the dataset obtained. In this manner some useful outcomes could be extracted successfully.

And what are the outcomes? Once again, the flaws of the data collection (them being a failure to randomize the sample entirely, errors in the respondent's understanding of the input requirements, initial Google Form misses and one missing question, though the latter had no effect on the results) cause the dataset to be very small: 27 responses to the survey turned into an 18 observation dataset. This small sample could not definitively confirm the findings of Chinese, Indonesian and foreign Ukrainian researchers, but, nonetheless, gave ground for interesting suggestions into the relationships between people that could involve personal finances.

Educational attainment had the greatest effect on the decision to suggest the platform to the acquaintances. Presence in the regional center comes in distant second, then follow the ease of use index and age. The second variable of the batch had a contradictory outcome, though none of them turned out to be sufficiently statistically significant. When the older one is - the less prone one is to suggest using new technology, the more educated one is - the more has one gone through technical tutorials that would indirectly positively affect new application reception and the younger one is - the more flexible their brains are, presence in the regional center did not necessarily mean a more probable decision of suggesting a peer-to-peer lending platform.

Aside from it being a sampling bias or a statistical minutiae, the reason for this discrepancy may lie in the less urban population being all too aware of each other and thus being less willing to invest into each other. Thus, a move into the city can open up the opportunities for more friendships, financial relationships and, by proxy, more probable a suggestion probability.

Despite all the shortcomings of the data production and processing, the model has a high rate of prediction-observation matches, which means that this study is on the right track to launch further investigations into the uncharted between-person lending land.

What other findings can be made from this study? For one, very few people want to engage in credit relationships at all. It seems as if people find it cumbersome to be liable to return funds to someone under the risk of loan non-performance. People more tend to live from paycheck to paycheck or to accumulate and use up their savings and this finding holds probably true for the third year in a row. The problem is that this approach is hard to maintain when facing the devastation of the Russian onslaught upon Ukraine having just suffered disruptions due to the pandemic.

Not a lot of people have considerable savings to sustain themselves in case of an income loss. Their incomes, though, allow for some prospective productivity gains, but further investments may be required. They would be most welcome by the peers themselves - those are the stances of the respondent population expressed through the form. But what do those people mostly face? Advertisements from the microcredit organizations that offer short credits at insurmountable interest rates. Of course people do not react to such ads. Thus, better marketing campaigns are required on messaging apps to attract more customers and lessen the burden of networking as a means of the peer-to-peer platform propagation.

So, between-person credit is a business model with a persuasive case for implementation. It also is a model of considerable risks. But they are not immitigable - they require dedication, specialized care and considerable resources. The population can be considered receptive to it once their interests are catered to. The return of this approach to lending is not impossible and should be pursued further to assist the people with their survival.

REFERENCES

- Я. Винокуров. У банках лежать "зайви" 400 мільярдів. Чому вони не кредитують економіку та державу? *Економічна Правда*. Published on Nov 14, 2022.
<https://www.epravda.com.ua/publications/2022/11/14/693774/index.amp>
- WebArchive. FinHub. Last archive safe May 16 2022.
<http://web.archive.org/web/20220516042546/https://finhub.ua/uk/finance.ua>. Forum "р2р-кредитование".
<https://forum.finance.ua/topic213521.html?start=9000>
- SDP LOAD. 2023. How Much Does It Cost to Develop an App in 2023? Cost Breakdown. <https://spdload.com/blog/app-development-cost/>
- Детектор Медіа. Рейтинг сайтів Kantar: українці повернулися до онлайн-шопінгу. Published on Nov 29, 2022.
<https://ms.detector.media/trendi/post/30744/2022-11-29-reytyng-saytiv-kantar-ukraintsi-povernulysya-do-onlayn-shoppingu/>
- Ante Javor. 2023. How Much Money Will You Spend on Hosting a Database. Memgraph.
<https://memgraph.com/blog/how-much-money-will-you-spend-on-hosting-a-database>
- Hongke Zhao, Yong Ge, Qi Liu, Guifeng Wang, Enhong Chen, and Hefu Zhang - P2P Lending Survey: Platforms, recent advances and prospects - ACM Trans. Intell. Syst. Technol. 8, 6, Article 72 (July 2017), 28 pages.
<http://staff.ustc.edu.cn/~qiliuq1/files/Publications/Hongke-Zhao-TIST2017.pdf>
- Kimberlee Leonard, Cassie Bottorff. 2023. Credit Card Processing Fees (2023 Guide). Forbes.
https://www.forbes.com/advisor/business/credit-card-processing-fees/#bottom_line_section
- Національний Банк України. Офіційний курс гривні щодо іноземних валют.
<https://bank.gov.ua/ua/markets/exchangerate-chart?cn%5B%5D=USD&startDate=01.11.2023&endDate=02.11.2023>
- Ryan Randy Suryono, Betty Purwandari, Indra Budi - Peer to Peer (P2P) Lending Problems and Potential Solutions: A Systematic Literature Review - Procedia Computer Science, Volume 161, 2019, Pages 204-214

- Київстар. Скоринг. <https://kyivstar.ua/business/products/antifraud#scoring>
- Українське Бюро Кредитних Історій. Тарифи для партнерів.
<https://www.ubki.ua/main-for-business-ua?curtab=3>
- O. Havrylchuk, C. Mariotto, T. Rahim, M. Verdier. 2019. The Expansion of the Peer-to-Peer Lending. *SSRN Papers*.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2841316
- H. L. D. Septiani, U. Sumarwan, L. N. Yuliaty, K. Kirbrandoko. 2020. Understanding the Factors Driving Farmers to Adopt Peer-to-Peer Lending Sharing Economy. *International Review of Management and Marketing*. Econjournals Vol. 10(6): 13-21.
<https://ideas.repec.org/a/eco/journ3/2020-06-2.html>
- Ю. В. Мацелюх. 2022. P2p-Кредитування Як Інноваційний Інструмент Розвитку Кредитного Ринку: Зарубіжний Досвід І Можливості Для України. *Бізнесінформ*. № 9 '2022: 82-87.
https://www.business-inform.net/export_pdf/business-inform-2022-9_0-pages-82_87.pdf
- Alexander Lavryk (2016). P2P lending as an alternative to bank lending in Ukraine. *Banks and Bank Systems*, 11(4): 20-30.
https://www.businessperspectives.org/images/pdf/applications/publishing/templates/article/assets/7985/BBS_en_2016_04_Lavryk.pdf
- Український центр європейської політики. 2020. Світове дослідження цінностей.
https://ucerp.org.ua/wp-content/uploads/2020/11/WVS_UA_2020_report_WEB.pdf
- Herrero-Lopez, S. 2009. Social interactions in P2P lending. Proceedings of the 3rd Workshop on Social Network Mining and Analysis - *SNA-KDD '09*.

APPENDIX A

ON A DOMESTIC STUDY OF THE PEER-TO-PEER LENDING RELATIONS, NON-OPERATING DOMESTIC ENTERPRISES

In 2016 Alexander Lavryk issued an article about this business model from the financial relations perspective¹. He argues that this model can live if both individuals and banks could pool the finances and jointly invest into ventures. This article did not enter the main body of paper since it became inactual rather quickly: Ukraine's biggest bank (PrivatBank) launched a Lucrative Investments Service (also known as or included into the Country of Successful Businesses platform - KYB) in March of that year. According to finance.ua², the company reported attracting UAH 1.6 bln. in credits this way. But the credits intermediated by PB were either registered outside its own entity or were not accrued at all, triggering a response from the National Bank of Ukraine - forcing it to shut down the platform, evidently, in early 2017. This also was the time of the bank's nationalization for the reasons unrelated to the topic at hand, but it's not yet known whether the process influence the shutdown

The next casualties of the p2p-lending scene in Ukraine were Ucredit, Simple Invest and Finstream. Both sources^{3 4} report their sites or services as inoperable. The

¹ Alexander Lavryk (2016). P2P lending as an alternative to bank lending in Ukraine. Banks and Bank Systems, 11(4), 20-30.

https://www.businessperspectives.org/images/pdf/applications/publishing/templates/article/assets/7985/BBS_en_2016_04_Lavryk.pdf

² finance.ua. P2p кредитування. <https://finance.ua/ua/credits/r2r-kreditovanie>

³ Ощадбанк. Будуй Своє - Рівноправне Кредитування.

<https://buduysvoe.com/publications/rivnopravne-kredytuvannya>

⁴ financer.com. Кредитування p2p.

<https://financer.com/ua/zaoshhadzhennya-ta-investyciyi/p2p-kredytuvannja/>

latter-but-one company, evidently, was an intermediary broker between the individuals and payday loan companies. And the latter has been a corporate investment fund that tried to attract retail investors through what would seem as a p2p-solution. Not much else is yet known.

The more interesting situations turned out with MOCash and Taplend: ain.ua (a programmers' and startups' media outlet) advertised the activities or personalities of each company: the former gained an interview, sponsored by USAID⁵, and the latter, reportedly, gained venture financing from the United States⁶. But, at the time of writing, neither company is operating in Ukraine and no useful mention of them was present in forum evidence as this was with FinHub.

There may also be message boards for individual borrowing advertisements with variable local reach and untraceable financial success. This is evident of the closed p2p-lending forum on Finance.ua, for example.

The only company to claim operation as a between-person lending platform nowadays is Advance Finance Alliance. It pursues investment ventures into startup enterprises and real estate on its own, offers trusteeship services to other holders of capital, thus its activities are somewhat diversified.

According to its website, in Summer 2023 AFA offers 12-13% per annum for the lenders, depending on the purpose of the lending: passive income product implies the lower interest rate, capital multiplication - the higher. For the borrowing client it's understood to require real-estate collateral covering at least 150-200% of the loaned amount. The Alliance, as they claim through their calculator, offers credit from USD 10-180 tsd. for 0.5-3 years, either as some sort of an open credit with principal return at the term's end or as an annuity. Either way, credit interest is at 30% per annum, no

⁵ ain.ua. Скосирська Світлана, Mocash: "Ринок P2p Обов'язково Буде Рости й Розвиватися." <https://ain.ua/special/usaaid-mocash-ukr/>

⁶ ain.ua. TapLend. <https://ain.ua/ru/tag/taplend/>

matter the duration of the loan. AFA does not present financial results due to its legal form of a limited liability partnership, limiting research opportunities.

Over the last three years the company has accumulated anecdotal allegations of fraud, subversion of the legal system and subpar business practices, as seen on the reviews to the company on regional⁷ and national⁸ review boards. In lieu of lacking information, they provide at least some informativity to the implementation of the business model, though petty disagreements with customers and inattributability of them particularly to p2p products risks a skewing of further possible findings.

⁷ (44.ua, 2022)

⁸ (top20.ua, 2023)

APPENDIX B

THE SURVEY FORM

The survey has been conducted in the Ukrainian language for ease of respondents' understanding

CHAPTER 1: Introduction

Description:

Congratulations! This survey is part of one master's thesis of the student of the Kyiv School of Economics Burak Artur (2023 "Economics of Business and Finance" program).

The purpose of this survey is to obtain data based on the determination of possible revenue from business models of peer-to-peer loans and possible risks to which the operating costs of the end platform in this financial technology niche will be directed.

Interpersonal lending (peer-to-peer, person-to-person, p2p or equal lending) is a model of financial relations in which a monetary position is created directly between individuals, and their intermediary only selects for them one by one for a commission fee and does not take on risky obligations (in short - Tinder for money).

The survey takes from 10 to 30 minutes. You can complete it at any of the accepted sections at your own discretion and convenience, but at the end of the form is an encouraging bonus!

This data is anonymous and will be used for academic purposes to evaluate the demand and offer for the financial service.

Question 1

Would you like to take part in the survey? (yes/no, yes - forwards to the next chapter, no - finishes the response)

CHAPTER 2: Demography and Location

Description: Let's start with the simplest! Some demographic variables may affect the further metrics you are asked about. And the latter can vary in space. So there is a need to learn them from you.

Question 1: State your age (short textual answer)

Question 2: State your sex⁹ (male / female / other)

Question 3: State your family¹⁰ status (single-choice question) (single / in a relationship / married / divorced / widowed)

Question 4: State who else is under your care (multiple-choice question) (parents or elderly relatives / children / household animals / other)

Question 5: State the region of your residence (short textual answer) Description: name the region¹¹, country of refuge due to the russian invasion or state Temporarily occupied territories

Question 6: State the kind of settlement of your residence (single-choice question) (regional center [incl. Kyiv] / large city [>50 tsd. ppl.] / small city [10-50 tsd. ppl.] / village [2-10 tsd. ppl.] / settlement [<2 tsd. ppl.] / other) Description: Other - if you took refuge in the other country

Question 7: State your complete level of education (single-choice question) (none / primary [4 years¹²] / basic intermediate¹³ [7-8 years] / complete intermediate [10-12

⁹ Implied as biological, Other variant is present for gender options

¹⁰ Implied as Marital

¹¹ Oblast

¹² of schooling

¹³ implying Secondary

years] / junior specialist / bachelor / specialist / master / candidate of sciences [Ph.D] / doctor of sciences)

Question 8: State the jist of your employment (single-choice question) (not in the labor force / unemployed / employee [in production¹⁴, service provider] / employee [technician/expert/specialist] / government employee [but not of an SOE] / entrepreneur [private proprietor/private enterprise] / manager [intermediate one or enterprise director] / government institution manager[intermediate manager or director])

Question 9: Are you obtaining tertiary education in parallel¹⁵? (yes/no)

Question 10: Would you like to continue? (yes - forwards to next chapter / no - finishes the response)

CHAPTER 3: Financial needs evaluation

Description: To determine the viability of the business model, it is necessary to determine the volume of demand for this (financial) service.

Question 11: What can you afford yourself with your monthly income? (single-choice question) (no income / enough for sustenance / enough for everything above + utility paychecks / enough for everything above + clothing / enough for everything above + personal equipment [computers and telephones] / enough for everything above + furniture and home appliances / enough for everything above + means of transportation [automobiles, lorries, boats] / enough for everything above + luxury goods [ornaments, precious stones, precious metals, paintings] / enough for everything above + and apartment / enough for everything above + a detached house / enough for everything above + personal office or warehouse / enough for everything above

¹⁴ implying Menial labor

¹⁵ implying Simultaneously

and more / other) Description: Other - if you want to provide a particular figure (state the currency). This will allow for more precise quantitative analysis

Question 12: What can you afford yourself with the accumulated savings if need be to use them? (same options and description)

Question 13: What share of your income do you save up (or would like to save up once income streams recover) (short textual answer) Description: In percent (0-100, please insert the % sign) or a fixed monetary amount (in UAH / USD / EUR; everything will be exchanged into UAH, you can state multiple currencies but be sure to mention which for which)

Question 14: Are you going to enter into financial relations soon? (yes - take out a loan [directs to Chapter 4] / yes - invest into a loan [directs to Chapter 6] / no - continue the survey without the options above [directs to Chapter 10] / no - and willing to finish the survey [finishes the response])

CHAPTER 4: Prospect of taking out a loan

Description: You rather intend to borrow the funds from someone else. Let's talk in detail about it!

Question 15: What amount of money do you deem enough for yourself to take out in a loan? (short textual answer) Description: a specific amount in UAH / USD / EUR (everything will be exchanged into UAH, you can state multiple currencies but be sure to mention them)

Question 16: What is the purpose of your loan? (multiple-choice question) (sustenance, utility paychecks, clothing [payday loan]/return of previous loans [refinancing] / personal equipment purchases [mobile phones / computers] / purchase of furniture / purchase of home appliances / purchase of a package tour [holiday / business]/home renovation [irrelevant to the next option]/remedying the destruction due to the russian

invasion / purchase of a transportation means [for personal use] / purchase of real estate / starting an own business / to accomplish a temporary entrepreneurial project [a gig] / speculative trading or arbitrage / other)

Question 17: What can you offer as the collateral or a guarantee of the loan's return? (multiple-choice question) (cash at hand [downpayment] / income notice from the place of its gaining / a creditability evaluation from a third party [such as the Ukrainian Bureau of Credit Histories etc.] / accessories, jewelry, precious metals, paintings / a vehicle / an own apartment / an own office or warehouse / more than one of the latter four options / other)

Question 18: When after will you be ready to return the borrowed funds? (short textual answer) Description: Be honest since this is a serious matter regarding one more person and a considerable amount of value!

Question 19: have you ever borrowed funds before? (yes - directs to Chapter 5 / no - directs to Chapter 8 / no - want to finish the survey - finishes the response)

CHAPTER 5: An exploration of the loantaking experience

Description: This chapter allows for more detailed acquaintance of the researcher with the aspects of the nowadays credit

Question 20: Whom did you last take out a loan from? (single-choice question) (from relatives / from friends / from acquaintances / from a bank / from a lombard / from a microfinance organization [meaning a payday loan provider] / from a credit union / from a corporate investment fund / from a previously unknown person [whom you ran into through an advert, forum or other sites / other)

Question 21: How long ago did you take out a loan (choosing a specific date in time) Description: If you don't remember a specific date in the month, state its first day

Question 22: Did you have to take out a loan more than once (no / other)¹⁶

Description: Other - yes, please state how many times did you manage to take them

Question 23: Did you manage to take out a loan from multiple people simultaneously (no / other) Description: Other - yes, please specify the maximum number of people with a particular number

Question 24: What was the loaned amount? (short textual answer) Description: a specific amount in UAH / USD / EUR (everything will be exchanged into UAH, you can state multiple currencies but be sure to mention them)

Question 25: What was the interest rate on that loan? (short textual answer) Description: Preferably in % per annum, but transforming from per month and per day is also possible (but be sure to specify the period)

Question 26: if in the previous chapter you chose the refinancing purpose of the loan, what share of that latter loan are you yet to return? (short textual answer) Description: in percents (0-100%) or a particular monetary amount (in UAH / USD / EUR, everything will be exchanged into UAH, you can mention multiple currencies but be sure to specify them)

Question 26: Did you have to postpone the loan payments? (no / other) Description: other - yes, describe for how long and why

Question 27: Did you have not to return the debt at all? (no / other) Description: Other - yes, elaborate on this. This information will be confidential

Question 28: If you answered yes on any of the previous two questions, did you ever face the attempts to return the debt by force? (no / other) Description: Other - yes, elaborate on this. This information will be confidential

¹⁶ This kind of question was set up like this since the Other variant allows for short textual answers to follow

Question 29: Would you like to continue? (yes - forwards to Chapter 8 / no - finishes the response)

CHAPTER 6: Prospect of investing into a loan

Description: You rather intend to borrow the funds to someone else. Let's talk in detail about it!

Question 30: What amount of money would you like to dedicate to giving out a loan? (short textual answer) Description: a specific amount in UAH / USD / EUR (everything will be exchanged into UAH, you can state multiple currencies but be sure to mention them)

Question 31: What purposes are you ready to invest into? (multiple-choice question) (sustenance, utility paychecks, clothing [payday loan]/return of previous loans [refinancing] / personal equipment purchases [mobile phones / computers] / purchase of furniture / purchase of home appliances / purchase of a package tour [holiday / business]/home renovation [irrelevant to the next option]/remedying the destruction due to the russian invasion / purchase of a transportation means [for personal use] / purchase of real estate / starting an own business / to accomplish a temporary entrepreneurial project [a gig] / speculative trading or arbitrage / other)

Question 32: What can you accept as the collateral or a guarantee of the loan's return? (multiple-choice question) (cash at hand [downpayment] / income notice from the place of its gaining / a creditability evaluation from a third party [such as the Ukrainian Bureau of Credit Histories etc.] / accessories, jewelry, precious metals, paintings / a vehicle / an own apartment / an own office or warehouse / more than one of the latter four options / other)

Question 33: For how long will you be willing to borrow the funds? (short textual answer) Description: Be sure to mention the time dimension (days / weeks / months / years)

Question 34: What amount of funds do you deem enough to lend to other people to turn it into an own enterprise? (short textual answer) Description: a specific amount in UAH / USD / EUR (everything will be exchanged into UAH, you can state multiple currencies but be sure to mention them)

Question 35: have you ever lent funds before? (yes - directs to Chapter 7 / no - directs to Chapter 8 / no - want to finish the survey - finishes the response)

CHAPTER 7: An exploration of the loangiving experience

Description: This chapter allows for more detailed acquaintance of the researcher with the aspects of the nowadays credit

Question 36: Whom did you last give a loan to? (single-choice question) (to relatives / to friends / to acquaintances / to a bank [through corporate bonds] / to a bank [through a deposit] / to the Ukrainian government [through bonds] / to a credit union / to a corporate investment fund / to an entrepreneur [as a loan] / to an entrepreneur [through venture financing] / to a company [through corporate bonds] / abroad [to governments / companies / individuals] / to a previously unknown person [whom you ran into through an advert, forum or other sites / other)

Question 37: How long ago did you lend out a loan (choosing a specific date in time) Description: If you don't remember a specific date in the month, state its first day

Question 38: Did you have to lend out a loan more than once (no / other) Description: Other - yes, please state how many times did you manage to take them

Question 39: Did you manage to lend out a loan to multiple people simultaneously (no / other) Description: Other - yes, please specify the maximum number of people with a particular number

Question 40: What was the loaned amount? (short textual answer) Description: a specific amount in UAH / USD / EUR (everything will be exchanged into UAH, you can state multiple currencies but be sure to mention them)

Question 41: What was the interest rate on that loan? (short textual answer) Description: Preferably in % per annum, but transforming from per month and per day is also possible (but be sure to specify the period)

Question 42: Did the borrower postpone the loan payments? (no / other) Description: other - yes, describe for how long and why

Question 43: Did you have to face the non-return of the debt at all? (yes / no) Description: Other - yes, elaborate on this. This information will be confidential

Question 44: If you answered yes on any of the previous two questions, did you ever attempt on your own or through the third party to return the debt by force? (no / other) Description: Other - yes, elaborate on this. This information will be confidential

Question 45: Would you like to continue? (yes - forwards to Chapter 8 / no - finishes the response)

CHAPTERS 8 & 9: Evaluation of the money demand / supply, depending on the interest rates

Description: Of course, there is an option to lend money to other people with a deferment or without additional fees, or to donate money altogether. If you had to enter into a financial relationship..

Question 46: What purpose would you like to ask the borrower / be ready yourself to postpone the payments of the loan? (multiple-choice question) (none / sustenance, utility paychecks, clothing [payday loan]/return of previous loans [refinancing] / personal equipment purchases [mobile phones / computers] / purchase of furniture / purchase of home appliances / purchase of a package tour [holiday / business]/home

renovation [irrelevant to the next option]/remedying the destruction due to the russian invasion / purchase of a transportation means [for personal use] / purchase of real estate / starting an own business / to accomplish a temporary entrepreneurial project [a gig] / speculative trading or arbitrage / other)

Question 47: If not to any, then for how long? (short textual answer) Description: You can describe for each respective chosen purpose (days / weeks / months / years - specify the measures)

Question 48: What purpose would you like to ask the borrower / be ready yourself not to charge the interest rates on the loan? (multiple-choice question) (none / sustenance, utility paychecks, clothing [payday loan]/return of previous loans [refinancing] / personal equipment purchases [mobile phones / computers] / purchase of furniture / purchase of home appliances / purchase of a package tour [holiday / business]/home renovation [irrelevant to the next option]/remedying the destruction due to the russian invasion / purchase of a transportation means [for personal use] / purchase of real estate / starting an own business / to accomplish a temporary entrepreneurial project [a gig] / speculative trading or arbitrage / other)

Question 50: How often would you like to receive / be ready to return the payments for the debt? (single-choice question) (daily / weekly / monthly / quarterly / biannually / annually / return the debt's principal at the end [interest is paid all through the length of the loan] / return the principal with the accrued interest at the loan's duration end / other)

Question 49: Let's put aside the interest-free scenario and specific loan goals for now. If you seriously entered into credit relations with another person, what interest rate would you be able to sustain with the payment of the loan amount / would you consider sufficient income from the loan? (short textual answer) Description: in % p.a.

Separate text block¹⁷: Now you will be given a set of interest rates for hryvnia loans and deposits advertised by banks, pawnshops and microcredit organizations and other credit instruments. Description: OVDP:

- Nominal yield (conditionally if you buy new ones): 2.5-19.75% per annum
- Yield to maturity (when buying on the secondary market): 20.63-36.05% per annum
(Source)

Bank (Privat, for example, as the largest):

Deposits: 9.5-15% per annum (depending on the type and duration)

Credits:

- Credit limit: 42% per annum (3.5% per month)
- Consumer credit ("Payment in installments" or "Instant installments"): 0.24-52.53% per annum
- "Cash loan": 37% per annum
- Car loan: 6.5-21.5% per annum (used) / up to 15.5% per annum (new)
- Housing: 12-19.23% per annum
- Investments in business ("KUB"): up to 23.5% per annum

OshchadBank (since Privat stopped providing the service below):

- Pension deposit: 11.5-15.5% per annum

¹⁷ To measure the effect of informing the customers about the interest rates offered by various intermediaries this block and the following 3 questions have been moved to a separate chapter to avoid the spoiler effect when answering question 49.

Lombard: 320-430% per annum according to a recent study by the Focus publication (conditionally 6-8% per week)

Microcredit organization (Moneyveo as the most advertised example): up to 766.5% annual (or up to 2.1% daily)

Credit union ("First All-Ukrainian" as a suggestion from Google):

Deposits: 1-19% per annum (depending on the type and duration)

Credits:

- Consumer: 29-540% per annum (depending on the program and amount)

- For business activities: 29-68% per annum (depending on the type of activity and collateral)

Question 50: What interest rate do you think you could afford to pay off the loan / would be sufficient income from the loan? Note that this is still a non-specific loan. (short textual answer) Description: In % per annum (You can still offer other rates because all these organizations may not lend funds to your counterparty or they simply will not pay attention to them - you are in competition with banks and other institutions)

Question 51: Which way will be the most convenient for you to get to know the intermediation service fee to find the counterpart to accomplish a loan? (single-choice question) (a concrete monetary amount / a commission percentage from the borrowed sum / a commission percentage from the loan's interest rate)

Question 52: Shall we continue? (yes - redirects to Chapter 10 / no - finishes the response)

CHAPTER 10: Perception of various means of lending

Description: Between-person lending - a rather young and not yet developed method of credit relations in Ukraine. This chapter is needed to evaluate your perception of competitive financial models.

Question 53: Describe your stance towards banks, particularly as the lenders and borrowers of your funds. (short textual answer) Description: Lay out everything, it will all be included.

Question 54: Describe your stance towards microcredit organizations (Moneyveo, Быстро займ etc.). (short textual answer) Description: Lay out everything, it will all be included.

Question 55: Describe your stance towards lombards. (short textual answer) Description: Lay out everything, it will all be included.

Question 56: Do you know any credit unions nowadays in Ukraine? (no / other) Description: Other is considered as yes and I ask you to lay out everything in your attitude towards them.

Question 53: Describe your stance towards friends / relatives / acquaintances / strangers as lenders / borrowers. (short textual answer) Description: Lay out everything, it will all be included.

Question 54: Whom would you prefer to borrow the funds from / lend them to? (single-choice question) (a bank / microcredit organizations / credit unions / individuals / investment fund / government of Ukraine / foreigners / nobody / other)

Question 55: Would you like to continue? (yes - directs to Chapter 11 / no - finishes the response) Description: The last chapter follows, a little bit is left.

CHAPTER 11: Evaluation of information spread on financial intermediaries and their services

Description: In addition to regular advertising (on billboards, city lights, vehicles, mass media and social networks), there is also the option of "word of mouth" for spreading information. This section aims to evaluate the effectiveness of the first and the possibilities of the second.

Question 56: How often do you run into the adverts of credits and deposits of banks and other financial institutions / offers to lend someone the funds? (match-choice question; the respondent is to choose one option per row) (rows: banks / microcredit organizations / lombards / credit unions / relatives, friends, acquaintances and strangers; columns: constantly [up to multiple times per day] / often [up to once per week] / seldomly [up to once a month] / rarely [up to once a year] / never)

Question 57: How many times did you follow through on the adverts / offerings and at least inquired the details thereon? (short textual answer) Description: You can state the particular number of times or a percentage.

Question 58: ... or took or gave out a loan following through this advert / suggestion? (short textual answer) Description: You can state the particular number of times or a percentage.

Question 59: If there appears to be a platform of between-person loans in Ukraine (sort of a Tinder for money), what incentives / conditions will you have to use it? (multiple-choice question) (presence of a website to access it / presence of a mobile app to access it / presence of a chat-bot on Telegram, Viber, WhatsApp, FB Messenger etc. to access / deposit interest rates should be higher than the banks' by at least 5% / credit interest rates should be lower than the payday loans' by at least 5 times / the ability to link up¹⁸ your credit history data / the ability to safely link up collateral or guarantee return documents / the ability to invest into business-projects [to get acquainted with design and estimate documentation, take part in profit-sharing instead of loan relations etc.] / the ability for multiple people to invest into one loan

¹⁸ Either update through the 3rd parties or upload

simultaneously / the ability to post multiple borrowing or lending adverts / the ability to coordinate a meeting with a counterpart to specify the details and lend cash / the ability to somehow diffuse the situation with a mutual selfie with hands shaking and showing the cash lent / the ability to transfer the funds onto the bank card [rather than lending cash] / the ability to ask for postponement or restructuring of payments through the platform itself / education on the platform about creating trust and detection of fraud / lawyer services in cases of forceful funds retrieval or theft / other)

Question 60: If such a platform appears, how many people, do you think, will find it useful when you offer it to them? (short textual answer) Description: a concrete number.

Question 61: What share of them, do you think, will follow through on your advice? (short textual answer)

Question 62: What proportion of these new users do you think would invest in someone rather than take out a loan? (short textual answer) Description: A specific number or as a percentage (specify the %) symbol.

Question 63: All! Would you like to leave a note / comment / suggestion? (yes - leads to Chapter 13 / no - ends the response / Where's the bonus? - leads to Chapter 12)

CHAPTER 12: And the bonus is here!

Description: It is possible to match your loan/investment offer by location, amount, purpose and lending rate. This work is absolutely free and voluntary on the part of the researcher. If there is enough time and applications, you will receive the contact of a willing counterparty and nothing more - figure it out for yourself :)

This is not a commercial offer, the data will additionally be used in the research of mating algorithms. Respondents who did not return the funds or extorted them by

illegal coercion are disqualified from this process. If you want to remain anonymous - do not share.

Question 64: Leave your email address? (no - proceed to Remarks / Comments / Suggestions - leads to Chapter 13 / no - finish the response - ends the response / other - short text)

CHAPTER 13: Remarks / Comments / Suggestions (Three dedicated questions for the respective purposes)