LUISS Guido Carli
LIBERA UNIVERSITÀ INTERNAZIONALE DEGLI STUDI SOCIALI

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SCHOOL OF BUSINESS, ECONOMICS AND LAW

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An Exploratory Analysis of Illiquid Assets: A Case Study On Dicopay Company

Candidate
Fabrizio Lanna

Student Number
743071

Luiss Supervisor
Cinzia Calluso

Luiss Co-Supervisor
Daniele Mascia

GU Supervisor
Marouane Bousfiha

Graduate School

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Abstract

In Business life, whether companies are selling goods or services, one thing is certain: cash is king. The success of a Small-to-Medium-Enterprise depends on the money at hand, and a series of aspects can positively or negatively influence the availability of cash. This study focuses on how lateness in payments can determine cash flow problems, determining illiquid assets at the hands of companies. Previous studies have highlighted how businesses could face problems by waiting for revenues from customers, but no studies have identified what is the real impact of this situation. In addition, up until now, companies offering financing or payment solutions have not paid attention to this problem, except for one. More precisely, a Startup based in Sweden has offered a Buy-Now-Pay-Later solution that could help remove lateness in payments and resulting illiquid assets. Therefore, the aim of this study is to quantitatively assess the potentiality of this solution and, through bivariate and multivariate analyses, show what could be the impact of this Startup. In the business realm, organizations are affected by a new offer in a different way, and that is why the data analysis goes from generic to specific to see how should the offer be launched in the market in order to create an uncontested market space, as the Blue Ocean Strategy suggests. Results show indeed that service companies could be more positively affected by this new way of financing/payment. More precisely, lawyers are, based on the statistical outcomes of this paper, the ones with the highest impact of this solution on the illiquidity of assets. The conclusions of this paper might be helpful for the Startup to identify which segment of the market must be targeted at the beginning to then create Word of Mouth and increase the network. Nonetheless, the usefulness of the results may be found also by companies who are struggling with lateness in payments, such that they would understand what should be done to remove the aforementioned problem.

Keywords: FinTech; Artificial Intelligence; Robotic Process Automation; Factoring; Invoices; Late Payments; Software; Buy Now Pay Later Solution; Blue Ocean Strategy.

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1. INTRODUCTION

This section aims at identifying the subject of the thesis and where to set the argument in the financial industry. Furthermore, it sets the research gap and why the researcher has decided to focus on this argument, with an overview of the thesis structure at the end of this chapter.

1.1. State-of-the-Art

If there is one thing that will surely make or destroy small businesses, that is cash. Over the years, the World has seen an incredible number of startups launching their business, where only a few of them have been actually able to successfully compete in the market. Different situations are the cause of the aforementioned phenomena; therefore it is almost impossible to set zero for the number of failures. Nevertheless, poor accounting is what characterizes most of these entrepreneurial errors (Goltz, 2011), and by reducing this problem there would perhaps be lower businesses exiting the market.

In order to understand how to reduce financial distress, it is firstly relevant to highlight how this issue is the consequence of a series of business choices. For instance, entrepreneurs may have selected a non-profitable industry, or perhaps the product is not as required as they expected, or even there are large companies that own the entire market (Goltz, 2011). These are common errors that happen in which there is nothing that can be done. What happens instead when entrepreneurs have rightly chosen all characteristics of the business, but they still face financial troubles? A possible problem at the basis of such financial distress may derive from the cash flow problem, that arises when consumers are given time to pay the invoices. In other words, companies have already offered their services, while consumers still have to pay, thus organizations may find themselves in the situation of not having money to finance their own activities because of lateness in invoice payments. Up until now, there has been no one trying to solve this issue, and some countries are far from reaching a solution. Sweden has always been the leading country in terms of payment systems, and again there is a startup that is aimed at eliminating this situation through the use of Artificial Intelligence only.

For clarity purposes, before digging into the problem itself, it should be first given an introduction of what invoices determine and how the factoring works. Both of them are fully analyzed in the literature review, in which most of the relevant papers are mentioned.

Invoices are solutions given to consumers, allowing them to have a precise period, which usually goes from 30 to 120 days, to pay producers. By doing so, there will be a time in which companies have spent their money, but they have not yet collected the revenues; thus, there exists a cash flow problem arising because of **illiquid assets** (Klapper, 2006). The latter could be a major problem of financial distress, especially for Small-To-Medium Enterprises (SMEs) that sell their goods and services only through invoices. Particularly, the delayed payment does not allow SMEs to use their revenues for improving themselves since otherwise they would be able to invest their money to enhance the structure or exploit financial alternatives (Klapper, 2006).

SMEs are the companies on which the paper focuses, but because the terminology is extremely broad, there should be a clarification of the specific meaning intended here. Generally, these organizations are the ones where the human capital is not high, there could be also one owner that sells entirely the service, as for example in the case of lawyers. Additionally, they may require outside finances to have the possibility to successfully compete in the market (Abdulsaleh, Worthington, 2013). A series of financing solutions are in companies' hands, starting from commercial banks and ending up with other ways as a result of FinTech innovations (Abdulsaleh, Worthington, 2013). SMEs are even the ones that get the most use of the factoring transactions since they would otherwise not be able to reach the appropriate finances to pursue their goals (Soufani, 2012). Relevant articles have then explained why SMEs have trouble finding investors, especially during their launch period. Therefore, causes of financial distress could be found in: *a)* asymmetry of information because of the company's opacity (Berger, Udell, 2006); *b)* absence of historical transactions (Cassar, 2004); and *c)* higher possibility of failure compared to incumbents (Huyghebaert, Van De Gucht, 2007).

As a first explanation of these relevant elements, invoices are the transaction used in the factoring system, in which there are three parties: the factor, the adherent and the debtor (Negescu-Oancea, Burlacu, Mitrita, Buzoianu, 2020). The former provides the service and gives the adherent the money through invoices payments, the adherent is the seller of goods and/or services, while the debtor is the buyer and the one who has to pay back the factor (Negescu-Oancea et al., 2020). From time to time, factoring solutions have started to become a prior financing way for buyers who want to purchase things but who do not want to pay immediately the sellers. What is relevant to mention since the beginning is that factoring is different from the typical loan of commercial banks. Thus, it works in a way that factors become owners of some buyers' receivables, the latter being the most

important aspect in order to evaluate whether or not a contractor is considered to be reliable and profitable (Vasilescu, 2010). In other words, although banks consider real estate assets and other aspects of companies, factoring solutions look at the receivables that could be transferred from organizations to factors (Vasilescu, 2010).

The Factor Chain International (FCI) is a global site that links every factor in the whole World in order to ease their work. Particularly, it even publishes information regarding the number of invoices sent through factoring solutions through a final annual report that shows the importance of this financing way. The FCI report of 2022 demonstrated how factoring has greatened in terms of relevance in all developed and developing countries, moving from a total of 500 billion Euro in 2001 to 3.000 billion Euro in 2021 (FCI annual report, 2022).

Lastly, another aspect that is implemented into this factoring solution is the *Buy-Now-Pay-Later* (BNPL) solution (Fisher et al., 2021). The latter is the financial intermediation where consumers purchase goods immediately, but the payment is delayed. The combination of BNPL with the factoring, as the Start-up under consideration has created, determines the situation where the factor pays the adherent at the moment in which the debtor takes the product, while the debtor still has time to pay the money back (Fisher et al., 2021).

1.2. Research Topic and Research Gap

As explained previously, there is a huge need for small enterprisers to solve the cash flow problem. It is essential here to have a precise understanding of what determines this lateness in payments. In all countries, when someone sends an invoice, customers have some time to pay it, since generally, invoices are expensive. The given period could range from one to four months depending on the type of service offered, the amount of money and the country in which we are operating. As previously said, everything is based on the laws of the country and, in Sweden, people have sixty days to pay the invoices. In those sixty days, producers have spent the resources that are needed to properly satisfy consumers, but they still do not have the revenues from the service offered, and this is an issue that most of the time ends up with the exiting of the business from the market.

Benjamin Franklin once said that *time is money*, which is something that often is not carefully considered (Okada, Hoch, 2004). An economic explanation of this statement could be that time is as much valuable as money is, thus buyers and sellers should consider

both these aspects when assessing financial transactions. Nevertheless, the state of the art is that everyone tends to give more importance to economic circumstances, such that the later the payment, the better they consider themselves to be (Okada, Hoch, 2004). The latter is the consequence of the difficulty of assessing time compared to money (Mogilner, Aaker, 2009). Fungibility and ambiguity are indeed the two aspects that do not give people a precise way to financially evaluate time, making them more inclined to contemplate cash rather than time (Mogilner, Aaker, 2009). In conclusion, time could be a meaningful element for companies who wait months before their revenues become collectable and illiquid assets arrive at companies' hands.

A Stockholm-based startup that has found a way to give entrepreneurs money right after they have offered their products/services, without obliging consumers to pay immediately. The organization is called Dicopay, and it has some aspects that will make it a disruptor. In particular, Dicopay's most powerful characteristic is simplicity, in terms of payment systems, and easiness of understanding. In particular, it is an app where invoices can be directly sent through the app and, at the moment the consumer accepts the payment, producers immediately receive back the money, while the consumer still has sixty days to pay. By doing so, producers have the finances to continue running their business without borrowing money from others, and it does not have any impact on the consumer. Dicopay has been launched in the United States by its previous owners right before the Coronavirus started, and it has had incredible growth since that moment. Once the mentioned black swan hit the entire World, Dicopay's owners decided to sell the company because the growth stabilized. Now that Covid-19 seems to be behind all of us, the new Board of Dicopay is trying to make the company visible in Sweden in order to make it a disruptor and therefore remove the illiquid assets of SMEs.

By combining the enormous increase of factoring transactions explained by the FCI with the definition of illiquid assets, deeply explained by previous researchers, there is the reasoning of this paper. Hence, the aim is to show how and why there is this cash flow problem in Small-to-Medium-Enterprises, and how the implementation of the Dicopay app could help solve this issue.

This study is composed of close interactions with the company, pointing attention to how to remove illiquid assets coming from the aforementioned situation. To be more precise, it appears that people do not have enough information regarding the problem, and to make Dicopay successful, it is of extreme relevance that possible users understand the dilemma.

After that, the second focus has to be on trying to explain whether or not Dicopay is able to reduce the cash flow problem in Sweden and then perhaps in the entire World. Finally, the discussion would consider some ways through which Dicopay could exploit the Blue Ocean Strategy in order to create an uncontested market space. In other words, different producers could benefit from Dicopay's app, likely lawyers or different types of entrepreneurs, and thus the goal is to create the *wow effect* by targeting the right segments of the market to start the business (Stasiak, 2022).

The Factor Chain International, through its annual report, has shown how one solution from one provider could be relevant in the entire World, especially due to the high increase in international factoring transactions. For this reason, even though Dicopay is a Sweden-based start-up, its solution will be explored by considering the entire Europe, since there are some countries in the mentioned continent, Italy first and foremost, that get the most usage of factoring solutions (FCI annual report, 2022).

1.3. Research Questions

The paper will be composed of two different parts: the first is aimed at explaining the cash-flow problem as the reason for startups' failures; the second part is instead focused on targeting the right market segment that could be the starting point for building up a precise competitive environment. Some criteria have been considered and taken as rules when choosing the appropriate research questions. Precisely, clearness and easiness, therefore simplicity, have been the basis for the decision. Going on, the following research questions are linked in order to then have a precise impact on reality. Hence, four research questions will be addressed:

RQ1: To what extent is the illiquid assets problem relevant for small businesses?

RQ2: How could the Buy-Now-Pay-Later Solution help solve the illiquid assets problem?

RQ2.1: What companies would have the most use of a Buy-Now-Pay-Later factoring solution and why?

RQ2.2: Among these companies, which would be a good starting point for Dicopay to build an uncontested market space?

1.4. Hypotheses

The mentioned research questions are related and, as will be seen in the methodology section, there are specific data that are needed in order to reach precise answers to them. What is also of relevance is that being a quantitative project means that some hypotheses

are clear from the beginning. The first data analysis has to be on the financial stress of companies, and the objective of the research is to explain how time is relevant when looking at profits and revenues. When it comes instead to the second research question, the outcome is unknown and thus it is not possible to perfectly forecast the potential impact of Dicopay solution with the aim of solving the illiquidity of assets because of invoices. Nevertheless, the ones who may be more inclined to use the platform will be lawyers, which are really subjected to the lateness in payments. Another niche is the real option agency, where engineers, agents and companies start to work on a project that will be paid for later on. Broadly, the following are the hypotheses chosen until now:

H1: Illiquid Assets are not damageable for small organizations.

H2: A Buy-Now-Pay-Later solution would solve liquidity problems for small organizations.

H3: Lawyers or other service providers may be more affected by a factoring solution than manufacturing companies.

1.5. Motives and Purpose of the Research

By analyzing the cash-flow problem, the outcome would be to help future companies understand that, if they do not have immediate paybacks from their work, they will perhaps face financial stress that could determine bankruptcy. The analysis instead focused on Dicopay's competitiveness is much more immediate and with a practical application, thus trying to have a real impact on Dicopay's future by helping them understand which is the potentiality of the platform and where to start. By doing so, Dicopay will have a precise path, based on numbers, therefore purely objective, which could be matched by others' qualitative works to then identify a way to reach the resulting segments.

1.6. Structure of the Paper

The paper is structured in a way that allows a clear understanding of the illiquid asset problem, how Dicopay is aimed at solving this issue, and what could be the outcome of having a Buy-Now-Pay-Later solution in the factoring industry. Therefore, the following chapter would deeply analyze the background of all relevant information, from general to specific. In other words, there will be a first paragraph talking about FinTech and how the implementation of Artificial Intelligence could ease financial transactions, to then have a precise focus on Factoring and invoices. The last part of the literature review considers the work of Kim and Mauborgne (2015) regarding The Blue Ocean Strategy,

which could help Dicopay to successfully compete in the market by creating an uncontested space.

After the literature review, there will be a chapter that explains first the meaning of the platform and the company object of this single case study. Platforms are included in the analysis since the offer of Dicopay is an application, therefore it has been considered of relevant by the researcher to give the meaning of platforms and all possible differences among them. As said, Dicopay is explained, as well as its functions, how it works, and which is its solution to the illiquid asset problem. Afterwards, data collection and data analysis will be part of the last chapter, which tries to answer the aforementioned research questions and analyzes if hypotheses are tested. The last paragraph will include discussions on the whole paper, going beyond Dicopay and trying to find a general solution to the problem under consideration.

2. LITERATURE REVIEW

This section aims to give a precise overview of the state of the art, meaning all the aspects that must be considered in order to answer the research question and test the hypotheses. The structure of this section is from generic to specific, therefore all the meanings inside this chapter are shown to have a deeper understanding of what previous papers have told regarding the topic of this thesis.

2.1. Introduction to Literature Review

The researcher has followed the path explained here. Dicopay's App covers a series of relevant arguments that have to be considered when building the literature review, and those follow a precise path from general to specific. Firstly, relevant information regarding FinTech in general. The latter is a keyword in order to call attention to how technology could be a game changer in the financial world, spotlighting how disruptors must behave to survive in a World where incumbents dominate the market. As multiple times explained, Dicopay's app is a peculiar type of payment system that uses technology and Artificial Intelligence. On the grounds of that, the other keyword is AI, where the focus is on how to combine AI in the financial world. Another pinpoint could be the payment systems regarding invoices, with the factoring industry being another keyword since the goal of Dicopay is to start in the factoring system to then enlarge the target. Finally, BNPL solutions have been highly explained. The researcher has pointed meticulous attention to how to explain BNPL because many players do not know how it actually works, therefore biases must be reduced by explaining it.

The second part of the literature review has been centred on explaining relevant theories regarding the second research question, by considering only one keywords: "Blue Ocean Strategy". The Blue Ocean Strategy is what the researcher has been talking about with the company in the last meeting, and they agreed that it will be perhaps the best-suited strategy to aggressively penetrate the market and make the product known to potential contractors as fast as possible. The reason why the company said that its idea is to use the Blue Ocean Strategy is based on a study that showed how, through the use of the mentioned strategy, SMEs would be able to successfully compete against incumbents since the beginning (Kim, Mauborgne, 2005).

The main threat when building a literature review has always been to make it too much broad. In other words, two are the possible errors that could be made when building the literature review: either it could be too broad and thus highlight information that would not have a correspondence in the analysis, or it may not include points of reality that could instead make the paper as clear as possible. For the purpose of this collection, the use of google Scholar and Scopus has been vital. In particular, Scholar makes possible the identification of the main gap that still has to be covered, since it is possible to write keywords and see where previous studies have worked on. Once Scholar has been used, the research could be even broadened by using Scopus, which lists all the previous studies and it allows the downloading of an excel containing the abstract, title, authors and other important aspects of each research considered. In this way, the identification of what is relevant and what is not is even easier by using colours. In particular, the researcher has gone one by one through the papers' abstracts and after that, the following colours have been used: green for the relevant papers, yellow if those articles could be useful once there are more explanations of the reality, and red if studies are not at all significant.

2.2. FinTech and its Transition to Easy Credit Check

FinTech is the terminology adopted to describe new ways through which financial intermediation can take place (Papadimitriou et al., 1994). From time to time the issue for these types of startups has always been the same: make customers inclined to move from traditional commercial banks (Papadimitriou et al., 1994). In particular, when companies are the target customers, banks usually rely more on large organizations compared to small businesses (Papadimitriou et al., 1994). The latter is given by the warranties that they could provide, which are to a greater extent composed of real estate assets while being global for instance would mean being more stable and reliable in the long term (Papadimitriou et al., 1994). A course change has been the use of factoring solutions, which have served SMEs (Small to Medium Enterprises) for many decades by giving them new ways of financing (Papadimitriou et al., 1994).

Haddad and Hornuf (2021) have focused their attention on how innovative financial startups can break the market. Findings suggested that FinTech startups could ease the performance of financial intermediation, not only in terms of profits but even regarding the market size (Haddah & Hornuf, 2021). The more FinTech startups enter the market, the lower would be the systematic risk, and this is explained by the use of the marginal expected shortfall (Haddah & Hornuf, 2021). Nevertheless, on the one hand, the higher presence of choices for consumers would decrease the systematic market risk, on the other

hand, big incumbents would suffer the lower finances that they sell globally (Haddah & Hornuf, 2021). To be precise, small organizations and startups, as well as independent contractors, tend to ask for capital from startups when the credit check is less strict (Haddah & Hornuf, 2021). Anytime there is a new system entering the market, the process through which it gets to be known by stakeholders follows precise patterns: *a)* knowledge; *b)* persuasion; *c)* decisions; *d)* implementation; and *e)* confirmation (Iman, 2019). The current situation highlights a depictable gap between startups and incumbents that is going to be reduced because of the gaining of the importance of these new ways of finance (Iman, 2019). Another unexpected outcome suggested that the real competitors for commercial banks are the subsectors, therefore lenders who finance money to smaller customers that would not otherwise be able to get them because of financial instability (Iman, 2019).

Haddad and Hornuf (2021) have then pointed out how not all Fintech startups can be considered as belonging to the same market segment, thus they highlighted nine different categories, and financing is where factoring solutions are placed. Although both developed and developing countries are facing financial improvements, the most innovative changes are still happening in countries where there is an abundance of finances. and this is not as it might seem (Haddah & Hornuf, 2021). Precisely, all innovations in the financial market allow the tearing of geographic boundaries, thence all nations could exploit others' new technologies (Haddah & Hornuf, 2021). Especially when it comes to financing and payment activities, there have been some disruptive startups that have positively impacted the whole financial market (Haddah & Hornuf, 2021). By taking for instance the European countries, by the evolution of new technologies in Sweden, which is the most innovative and updated country in the entire World, there can be new changes even in continental Europe (Haddah & Hornuf, 2021). New innovations follow then what happens in the outside World, and the 2008's black swan determined lower finances by commercial banks to small businesses, such that they had to find new ways of getting the necessary money to run their activities (Haddah & Hornuf, 2021). Crowdfunding and factoring solutions have tried to help them through less strict credit checks and thus by lending them the required finances (Haddah & Hornuf, 2021).

The main barrier that financial startups have to face is not related to the regulation, rather the problem is about convincing consumers to change their habits regarding payment solutions (Dahlberg & Öörni, 2008). According to Dahlberg and Öörni (2008), old habits

die slowly, but the shifts in finances must be analyzed practically, not theoretically as it has been done by previous researchers. In other words, consumers' choices have to be detected on a flow method, therefore taking into consideration a period of time to see if that sample has actually shifted from traditional lending to new technologies offered (Dahlberg & Öörni, 2008). In order to look at the influences of new technologies, Dahlberg and Öörni (2008) have launched a survey that comprises the following relevant aspect to consumers' judgments regarding the innovations under consideration: benefits, efficiency and timing, trustability, compatibility, availability, simplicity, independency and norms. By detecting then these aspects, they figured out that the higher these factors, the higher the propensity of borrowers to move from old to new (Dahlberg & Öörni, 2008). The combination of these elements has to be then matched to some demographic characteristics, first and foremost age, and gender (Dahlberg & Öörni, 2008). Precisely, youngsters and men have more propensity to adopt new and potentially more profitable financial and payment systems (Dahlberg & Öörni, 2008). The study from Dahlberg and Öörni (2008) has been focused on the Finnish market, highlighting how people are not so stuck to financial habits, even though this conclusion can not be generalized since some other cultures are less prone to move from old to new.

2.3. Artificial Intelligence and its Application on FinTech Solutions

Artificial Intelligence (AI) has great potential, it can improve the World, and it can ease personal and professional intermediation (Saetra, 2021). By definition, AI can be any technology or software that represents one of the following characteristics: decision-making, prediction, audio/visual recognition, automatic knowledge extraction, interactive communication, logical reasoning, and data analysis (Saetra, 2021). The impact of AI reflects on three different levels: macro, meso and micro (Saetra, 2021). It could have for example a positive financial impact on a precise region, which then reflects among and within countries (macro and micro effects, respectively) (Saetra, 2021). Furthermore, the first usage of the internet has been the case of Nacional Financiera (Nafin) development bank in Mexico, which eased the factoring services to SMEs (Klapper et al., 2005). Another relevant aspect of the factoring system is the amount of accounts receivables, which is measured on precise quantitative formulas, followed by the ownership of receivables that moves from borrowers to factors (i.e., lenders) (Udell, 2015).

Startups are active organizations in the competitive environment without historical tracking that try to reach a certain level of profitability against incumbents and bigger companies (Paternoster et al., 2014). When it comes to new tech startups, those are

structured following a precise design, and most of them try to come up with applications to better tackle the market instead of focusing on software implementation (Paternoster et al., 2014). The main consequence of having a new organization mainly focused on the use of Artificial intelligence is the lack of enough human capital and emotions, which sometimes are helpful to achieve better financial outcomes (Paternoster et al., 2014). However, the results of the study suggested that some disruption would solve the aforementioned problem and would give startups enough space to scale up, perhaps through the invention of new software or applications (Paternoster et al., 2014).

When businesses implement Artificial Intelligence, then the business value is the combination between the latter and the goals that the organization wants to reach (Potapenko, 2010). The basis of Potapenko's work (2010) is that no matter the type of financial transaction, companies that use tech devices to perform their businesses would achieve a competitive advantage that they would not otherwise be able to reach. By looking at e-invoices, some applications in this field could be analyzed on a broad view analyzing all the positive impacts in terms of costs and efficiency for SMEs who decide to use it (Potapenko, 2010).

2.4. Factoring System and its Differences with Traditional Lands

The terminology refers, in ancient Latin, to merchants who placed their businesses in very diverse lands (Smith & Schnucker, 1994). Contracts in the factoring system are among three parties: the adherent is the provider of goods and services, thus the seller, while the factor is the specialized institution that has receivables as returns of the secureness of the former's finances, and the third party is the debtor (Negescu-Oancea et al., 2020).

Factoring companies provide credits to consumers when they have to pay producers (Papadimitriou et al., 1994). The importance of these solutions has been displayed among many studies, for instance, the analysis of how in 1991 these businesses reached $260 billion worldwide, with a high percentage of the total in the United States of America (Papadimitriou et al., 1994). Some advantages are the outcome of factoring structures, starting with the absence of the same supervision established on commercial banks (Papadimitriou et al., 1994). For this reason, the profitability of purchasing accounts receivables is high for factoring companies and not for banks as collateral warranty (Papadimitriou et al., 1994). The usual transaction in the factoring system is done as explained by the following figure 1 (Mohammadzadeh et al., 2021):

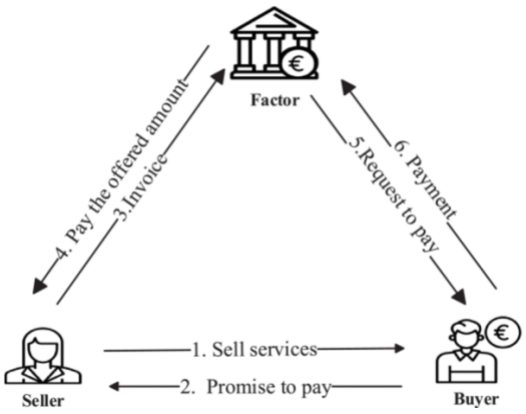

Figure 1: Usual Factoring transaction. Source: Mohammadzadeh et al., 2021.

From time to time, invoices paid through factoring have all followed the same path described in Figure 1 (Mohammadzadeh et al., 2021). What is not clear from the picture is when the payment takes place, thus the latter should be cleared out (Mohammadzadeh et al., 2021). The peculiarity of invoices is that it allows the payment to be delayed for a period that goes from 30 to 120 day (Mohammadzadeh et al., 2021). If for instance, an invoice has sixty days' maturity, at the end of this period the factor pays the seller in return for a fee and asks immediately the buyer to get the money back (Mohammadzadeh et al., 2021). During these sixty days, the seller has already faced the costs required to satisfy the customer's expectations, while revenues are not already collected and will not be in the buyer's hands until the end of the invoice period (Mohammadzadeh N. et al., 2021).

If on one hand factoring is said to be different from bank loans, it should be clear out that there are three major asymmetries between these two types of financing approaches (Vasilescu, 2010). The first is the importance given to receivables, considered to be a financial asset; the second is that factoring cannot be considered as a loan, while it is the acquisition of a receivable; finally, factoring involves not two parties, but three (Vasilescu, 2010). Regarding the last aspect, it functions in a way such that the business gives its receivables at a precise discount (Vasilescu, 2010). Factoring differs from commercial banks even in what concerns the functions (Vasilescu, 2010). In particular, financing is the first, but not the only aim, due to the presence of service providing and protection against bad debts (Vasilescu, 2010). The main reason why factors are so common among companies, especially SMEs, is that the adherent does not have to pay at the moment of the contract sealing (Vasilescu, 2010). Precisely, there is a maturity of invoices and consumers have to pay at the chosen maturity, therefore it gives time to them to collect the required money to pay invoices (Vasilescu, 2010).

Artificial intelligence is still an unused system when it comes to invoices, which represents a great problem for small businesses (Klapper, 2006). In particular, consumers pay by asking for a period that usually goes from thirty to ninety days, which pops up to be the time to which producers have generated but still not collected revenues (Klapper, 2006). In other words, money is considered then to be an illiquid asset until consumers proceed with the payment (Klapper, 2006). The mentioned system is how the factoring industry works, and how it could be useful for startups and small organizations to get loans from big corporations (Klapper, 2006). Most importantly, the main warranty is not real estate assets anymore, as it has always been for commercial banks, since the underlying security is represented by the seller's accounts receivables (Klapper, 2006). In other words, the analysis is done on the receivables, therefore on the buyers' risks, rather than on the adherent (Klapper, 2006).

When companies have to choose which payment solution customers can use, they are driven by the underlying idea that the diversification of payment systems can easily increase the cost-efficiency trade-off (Grüschow et al., 2015). Additionally, Grüschow et al. (2015) found that some transactions are more profitable than others based on costs, fees, timing and other important aspects. For instance, invoices and pre-payments have low fixed setup costs, but they present high variable costs due to the manual handling of the transaction from customers to retailers (Grüschow et al., 2015). All transaction methods can have delays, but some are more inclined than others to face this issue (Grüschow et al., 2015). When consumers pay late, companies not only have cash-flow problems derived from costs not matched with some revenues, but they also see higher working capital as a result of the lateness (Grüschow et al., 2015). Higher working capital then is solved by more investments that increase the interest expenses because they must be financed by third parties (Grüschow et al., 2015). Going on, because invoices present the highest lateness, it can be addressed that this payment system is the one that presents the greatest working capital, thus solutions to this problem have to be found (Grüschow et al., 2015).

An advantage of the factoring solution is the link of the value of the assets using a precise formula, instead of present or historical value measurements (Klapper, 2006). Developed and developing countries have understood, from time to time, the relevance of this type of payment system, especially for SMEs and startups that struggle to reach finances from banks (Klapper, 2006).

Countries that get the most out of the use of factoring systems are those with a higher flow of credit information and lower contract constraints (Klapper, 2006). For instance, Italy represents one of the biggest and most profitable markets for factoring firms, such that the number of this type of organization went from 33 in 2008 to 84 in 2015 (Degl'Innocenti et al., 2019). The latter conclusion can be explained by the high presence of small enterprises in Italy, since these types of organizations can, through the use of factoring, get the resources that commercial banks would not give them otherwise (Soufani, 2001). Precisely, Factors Chain International (FCI) highlighted in 2010 that more than 60% of total factoring activities are done in Europe (Vasilescu, 2010). A similar conclusion can be drawn for the UK market, where over 24,000 businesses are served by factors that lend money to consumers for the acquisition of goods and services (Soufani, 2002).

Many studies have pointed out how factoring is a great solution for SMEs who usually face the so-called finance gap, meaning the impossibility to reach the required finances through bank loans because of financial instability (Soufani, 2012). The main reason why there is this finance gap is the absence of equity capital, reducing then the trustability of SMEs in banks' eyes (Soufani, 2012). Soufani (2012) has tried to tie up this statement in the UK market, explaining how in this market there is a great necessity for small organizations to use factors to obtain the required finances to run their businesses. The solution addressed was based on a differentiation of companies that used factoring solutions in the UK based on size, history, type and sector of the organization, and legal structure (Soufani, 2012). The first outcome obtained through the aforementioned separation suggested that the smaller the size, the higher their propensity to get finances through factors (Soufani, 2012).

The most important conclusion is given by the sector, highlighting how manufacturing firms are the ones more inclined to send invoices to factoring organizations (Soufani, 2012). This is perhaps justifiable by the higher finances that they need to start running their businesses, compared for instance to service firms (Soufani, 2012). The latter conclusion cannot be generalized, but if on one hand, it is clear how services do not ask for high investments, on the other hand, they may encounter costs while they are offering their services, and these costs need to have immediate cash backs due to the threat of facing financial troubles (Soufani, 2012). In other words, there could be some services that have high costs in their business model, and the use of invoices is extremely helpful for buyers and at the same time damageable for the organization (Soufani, 2012). Some

service systems are based on factoring, and the higher the amount to pay, the higher the propensity to get money back from factors that are more reliable than customers (Soufani, 2012). The analysis based instead on the age of firms suggested that startups/young firms with no more than five years of age, tend to be more inclined to have factoring solutions as the basis of their finances, representing almost 80% of the entire system (Soufani, 2012). In short, anytime the combination of these characteristics gets through and passes the credit check from factors, they get the required finances that otherwise would not be obtained (Soufani, 2012).

FCI concluded then that factoring is extremely advantageous in case of international transactions, such that countries that get the best out of this type of financing are those who trade with other countries as the basis of their GPD formation (Auboin et al., 2016). Auboin et al. (2016) tried to pinpoint the link between factoring and trade credit on one hand, and factoring and trade flow on the other. The outcome suggested that an increase in factoring leads to both higher trade flows and trade credit, with the first facing the biggest increase (Auboin et al., 2016). This aforementioned conclusion is the quantitative data needed in order to demonstrate that one improvement in the factoring system in one country can lead to extremely benevolent situations in other parts of the World (Auboin et al., 2016).

Transactions based on factoring usually have borrowers considered to be opaque, thus there is an asymmetry of information between them and the factors who lend money (Udell, 2015). Furthermore, factors have eyes on the debtors of their clients, due to their duty of paying in case of customers default (Soufani, 2002).

Because of globalization and e-commerce, sellers factor in buyers from different countries, while it remains essential for consumers to be considered reliable (Klapper, 2006). For this reason, producers try to opt for a credit check with the help of local factors (Klapper, 2006). Nevertheless, the main difference from the traditional banks is depicted by the non-primary relevance of the seller's viability and creditworthiness (Klapper, 2006). Another dissimilarity is where the organizations focus their activity, such that factoring firms run their businesses especially when banks do not operate (Soufani, 2002). At the moment in which factoring systems include IT services in their businesses, then there will be a new way of FinTech (Puschmann, 2017). In particular, any new way of using technology in Financial Services in order to ease the customers' life would be

considered to be consumer-oriented, namely electronic wallets including different services apart from the basic payment (Puschmann, 2017).

Tater et al. (2018) have focused their study on trying to show how invoices are relevant and why by first calling attention to the difference between invoices paid late and the ones paid on time. Through the help of: a) machine learning to forecast the payment; b) historical information regarding the contractors; and c) algorithms to see the actual payment, data demonstrated that around 10,3% of invoices are paid late (Tater et al., 2018). Figure 2 below shows how the prediction analysis is conducted by focusing on the different stages of the invoices (Tater et al., 2018).

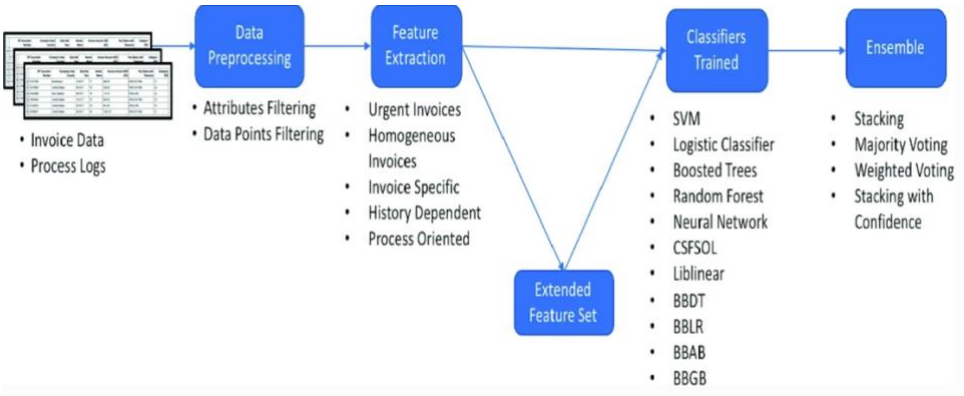

Figure 2: Prediction of late payments. Source: Tater et al., 2018.

Results have shown how historical transactions play a crucial role to see whether or not payments would exceed the due date (Tater et al., 2018). The latter means that factors should lend money to borrowers only if their previous invoices are paid on time (Tater et al., 2018). Peiguang (2015) has focused on the lateness in invoice payments, trying to identify how long the delay could be, and it is done by predicting when a new invoice would be paid based on historical transactions. By doing so, the indirect outcome is the evaluation of customers, and the delay is calculated based on a multiple-outcome case (Peiguang, 2015).

Figure 3 explains what type of information has to be considered when it comes to invoices, thus customers' data, as well as invoice collection mechanisms decided at the moment of the contract's sealing (Peiguang, 2015). From the analysis conducted through single and multiple outcomes, companies that take large use of invoices may face cash flow problems because only a small percentage of invoices issued are paid on time (Peiguang, 2015). The solution proposed by Peiguang (2015) is to use Artificial Intelligence to predict possible delays, and this would be possible only if more

information regarding customers' revenues and profits are available for the mentioned objective.

Name	Meaning
Customer Number	-
Customer Name	-
Document Number	-
Reference	Reference number in the database
Profit Center	-
Document Date	Invoice generating date
Posting Date	Invoice posting date
Document Currency	Amount of the invoice
Currency	Currency of the invoice amount
User Name	-
Clearing Date	Invoice clearing date
Entry Date	Invoice closing date
Division	-
Group	-
Payment Term	The "buffer" time of payment after the invoice issuing
Credit Representative	-

Figure 3: Typical construction of invoices. Source: Peiguang, 2015.

Another way of analyzing invoices payment is behavioural analytics, which predicts customers' choices on invoices (Bahrami et al., 2020). Statistical approaches can help identify whether or not invoices are paid late, starting from the logistic regression, which gives a prediction rate success of 97% (Bahrami et al., 2020). Bahrami et al. (2020) tried to give companies a precise and easy way of predicting customers' approaches to invoices, considering that the latter is a major problem of illiquidity for companies, especially SMEs. A final suggestion then is to match the statistical formulas on customers' behaviours with financial metrics, which can ultimately address the problem of sending invoices to non-reliable clients (Bahrami et al., 2020).

There are different reasons why factoring is so common in some countries, and all is in its advantages (Vasilescu, 2010). It is firstly extremely easy to get finances for SMEs not only because of the lower credit check, but also due to the low debt level analysis (Vasilescu, 2010). The factoring is then, as previously explained, only a receivable asset that is given to the factor, thus it does not create any debt, contrary to bank loans (Auboin et al., 2016).

Going on, factors can be used at the moment of the contract sealing with the aim of satisfying clients' needs (Vasilescu, 2010). Last but not least, the company can converge all its resources to the development of the core components of the organization, since then the factor is in charge of having eyes on the payments (Vasilescu, 2010). By looking at all these advantages, it is clear how SMEs prefer to use factoring solutions instead of normal banks lending, even though they have higher costs involved (Vasilescu, 2010).

Some threats can be observed in the factoring system, which may affect factors (Mohammadzadeh et al., 2021). Companies who serve in this industry need information regarding the buyer, which are then kept in private ecosystems to guarantee access anytime it is needed (Mohammadzadeh et al., 2021). This way of being private has some limitations in it, starting with the main threat of the so-called double factoring (Mohammadzadeh et al., 2021). In this case, the seller tries to double the amount of money by asking them to two factors (Mohammadzadeh et al., 2021). Nowadays indeed, to lower the double factoring threat, some companies have started to use a centralized system to keep track of their finances, starting with Factor Chain International, which serves as an ecosystem too (Mohammadzadeh et al., 2021). Another solution to this problem could be a public blockchain, where every factor makes others known about its transactions, even though companies tend to not feel comfortable sharing all information regarding their businesses (Mohammadzadeh et al., 2021). If on one hand, the factor has to deal with the aforementioned threat, on the other, buyers could be victims of fraudulent factors declaring to have paid an invoice of sellers (Battaiola et al., 2019). As in the case of double factoring, the only way to solve this issue is to grant access to all stakeholders to a system that comprehends all invoice transactions (Battaiola et al., 2019).

There are two historical configurations of factoring solutions: recourse and non-recourse (Battaiola et al., 2019). The former represents a traditional commercial loan where the invoice is a collateral, while the latter gives payments to suppliers in a precise time in exchange for a fee (Battaiola et al., 2019). A modern way of using factoring is the reverse, where it is the buyer who proposes to the supplier the use of invoices, allowing the buyer to have lower costs and immediate money to pay the supplier (Battaiola et al., 2019). History has shown that people tend to stick with intermediaries, especially if the cost-efficiency trade-off is profitable (Battaiola et al., 2019). Therefore, the solution to all these threats could be owning a portfolio of invoices by a precise factor, allowing it to keep tracing the sellers' transactions, thus dramatically reducing the risk of double factoring (Battaiola et al., 2019).

The last stage of factoring transactions is the payment from the buyer to the factor and at that moment the relationship between parties comes to an end unless the factor owns a portfolio of invoices from the buyer (Battaiola et al., 2019). Usually, all interested parties rely on a trusted system for the money transaction, and from time to time the service providers have started to use Artificial Intelligence to ease the entire operation (Battaiola et al., 2019). The conclusion addressed by Battaiola et al. (2019) suggested that the

implementation of a centralized entity that eases the knowledge spread among parties would cause benefits for the entire ecosystem of factoring invoices. Nonetheless, privacy has to be guaranteed, since otherwise sensitive information regarding factors or sellers could be shared by determining fraudulent activities by third parties (Mohammadzadeh et al., 2021). The proposition of Mohammadzadeh et al. (2021) is to store on-chain data allowing others to understand the invoices and parties involved while storing, through cryptography, private data on sellers, factors and buyers. The acceptance of the invoice from the factor and the seller are protected by a smart key granting access to the relevant blockchain in order to trace the track of the payment status (Mohammadzadeh et al., 2021). The peculiarity of this proposal is that, whenever the key goes lost, no one can go back to the owners of that smart card, thus privacy is maintained and assured because of all the precautions taken (Mohammadzadeh et al., 2021).

Security and privacy have become major problems especially because of the implementation of Artificial Intelligence and Machine Learning in factoring systems (Desai et al., 2021). Particularly, although globalization and IT services all together have eased financial intermediation within and between countries, each country has its own laws on FinTech (Desai et al., 2021). By considering other aspects of E-invoicing, it is clear how it has reduced the cost-time-efficiency trade-offs, and this is the outcome of automizing some stages of invoicing transactions (Desai et al., 2021). Most E-factoring operations exploit software by giving them tracking of some stages of the invoices, making these faster and more efficient (Desai et al., 2021). Nonetheless, the process of becoming completely automized takes longer time than just adding ML to the intermediation, thus it should be given AI space to learn from human endeavors to not make mistakes two times (Desai et al., 2021).

The solution of Desai et al., (2021) on how to implement AI in factoring activities is based on the use of tech devices in two stages of the transaction: a) when the invoice is made; and b) when the invoice has to be verified. By doing so, all parties in the ecosystem would be better off because of both easiness of retrieving information and the simplicity to keep track of the operation (Desai et al., 2021). The major limitation of the solution provided by Desai et al. (2021) is that documents and necessary information require humans to process data and leave factoring properly work (Desai et al., 2021). Another secondary issue could be the diversification of invoices, thus allowing factors to have more than one invoice, and vice versa, since ML and AI give people the capability to perform analysis on documents only one at a time (Desai et al., 2021).

From time to time there has been an increase in the impact of Artificial Intelligence on businesses (Rohaime et al.,2022). Nowadays, Robotic Process Automation (RPA) is something that companies try to implement in their activities because of its benefits in terms of costs, speed and efficiency (Rohaime et al., 2022). RPA is a broad term that refers to many tools, from apps to software, all aimed at imitating human activities and lowering failures with feedback and subsequent adjustments (Rohaime et al., 2022). RPA, most of the time, includes the use of Optical Character Recognition (OCR), which is the technology that extracts relevant data through images and video documents (Rohaime et al., 2022). By doing so, the RPA can process some information from some real images regarding, for instance, the parties of a contract, to then proceed with the transaction successfully (Rohaime et al., 2022). The main solution proposed by Rohaime et al. (2022) concerning invoice payments considers different AI tools, thus the use of OCR for data extraction, and Phyton to then analyse data and come up with results. The outcome of this process was that all transactions were 80% faster than previously, by increasing at the same time inexpensive flexibility for the seller (Rohaime et al., 2022).

Some solutions have been proposed over the years by many economists who were trying to expose a profitable account payable system that does not require the use of humans to be processed (Tater et al., 2022). All previous ideas were unsuccessful in terms of the exploitation of AI & ML, while Tater et al. (2022) suggested an end-to-end process in which multiple stages are run by the technology. In other words, the only phases where parties are involved are the acceptance of the payment and the payment transaction (Tater et al., 2022). The proposal of Tater et al. (2022), if effectively implemented into invoices, could lower transaction costs, increase speed and thus higher satisfaction of both clients and suppliers. The idea was not only to use Robotic Process Automation (RPA) for invoices concerning purchased goods, but also for services and/or goods that have been at hands of consumers, who then decide to not proceed with the acquisition (Tater et al., 2022). The main problem with the implementation of the RPA as suggested by Tater et al. (2022) concerns the impossibility to allow people to use this proposal with the same procedures. Precisely, each invoice has its own path, thence the technology used should be flexible and able to keep working anytime invoices are launched (Tater et al., 2022). To solve this issue, they planned the RPA in a way that implements in it all invoices without limitations, and each invoice is recognizable from the precise and singular number given to it (Tater et al., 2022). In conclusion, the idea was to have AI that is based on general rules and specific codes (Tater et al., 2022). The latter, from tax to accounting

codes, allow the machine to run each invoice independently and smoothly (Tater et al., 2022).

2.5. Buy-Now-Pay-Later Solution

Another financial tool that has taken hold in the last decade is the Buy-Now-Pay-Later (BNPL) solution (Fisher et al., 2021). Through this transaction, consumers get immediately the product and pay only a fraction of the total amount at the moment of the purchase, while the remaining amount of money is paid afterwards without additional fees (Fisher et al., 2021). The seller in this case is paid after a precise maturity by the provider of the BNPL offer (Fisher et al., 2021). This type of transaction is predominantly done through the help of a third party, an intermediary who works between the consumer and the supplier (Guttman-Kenney et al., 2023). Guarantees on the repayment change based on the lender, and a common provider of BNPL solutions is Klarna, which operates in both UK and Scandinavian markets (Guttman-Kenney et al., 2023). Buyers who use Klarna have indeed thirty days to repay with the option of the payment split in three subsequent instalments (Guttman-Kenney et al., 2023). Profits for lenders are mainly based on fees that usually go from 3% to 6% but, for instance, PayPal does not charge any fee for late transactions (Guttman-Kenney et al., 2023). The idea underlying Klarna and other BNPL providers is that consumers have to be able to pay suppliers at a later stage without borrowing money through other sources of financing (Guttman-Kenney et al., 2023).

In most of the developed countries, the mentioned type of transaction has become relevant, and the increase in people using it suggests how successful and profitable it is for consumers who want to buy expensive products and/or services (Fisher et al., 2021). Although at first impact, it seems that the BNPL is advantageous only for customers while producers suffer financially from it, outcomes explain how sales increase anytime it is given buyers the possibility to pay later (Fisher et al., 2021). To make suppliers inclined to accept this payment system, maturity has to be in a short-term range, thus in the scaling of no more than three months (Fisher et al., 2021).

The adoption of BNPL solution is based on demographic characteristics, age first and foremost (Gerrans et al., 2021). In particular, youngsters in the range of 18 to 34 years old stand for more than 60% of all BNPL transactions (Gerrans et al., 2021). The latter is the result of financial instability and non-trustworthiness that younger people tend to have compared to older ones (Gerrans et al., 2021). Another reliable explanation is instead

focused on youngsters' propensity to easily learn how to use apps, which are providers' main ways of adopting BNPL solutions (Gerrans et al., 2021). Nonetheless, most of the time apps allowing BNPL financing are owned by banks, thus they give the possibility to consumers to have access to credits that they can use to buy goods and services within a precise range of money (Gerrans et al., 2021).

Gerrans et al., (2021) have then identified the main threat from a consumer perspective, thus the possibility to remain trapped in a loop where BNPL increases small financial debts that cannot be sustained by the party. In other words, it is extremely dangerous to implement BNPL in countries where debts are high, since the likelihood key to solve high amounts of BNPL is to get other finances, therefore other types of debts (Gerrans et al., 2021).

If it is said that the main benefit for producers to adopt BNPL is the increase of sold products and services, Siemens (2007) pointed out the negative outcome resulting from the lateness in payments. The first element is psychological rather than purely economical, such that consumers and producers tend to value more things where costs are faced prior to the benefits (Siemens, 2007). By focusing on producers, they tend to feel better off if they have receivables compared to having debts (Siemens, 2007). Following the same consideration, the increase in credit and debit cards has improved the number of BNPL transactions, in which consumers tend to consider the upcoming payment a loss because it happens long after the usage of the product (Siemens, 2007). In particular, the pain of having BNPL is high since the payment is de-coupled from the benefits gained through the consumption of the good, thus it seems to face a sunk benefit against high costs (Siemens, 2007). Results exposed that the higher the time after the purchase for the payment, the lower the satisfaction (Siemens, 2007). Therefore, the suggestion to meet both economic and psychological rewards is to not have long-time waiting to pay for the product (Siemens, 2007).

Time is as valuable as money, and thus the higher the time waited to pay debts, the higher the underlying costs that consumers have to suffer (Okada & Hoch, 2004). Nonetheless, most of the time this statement is forgotten by active users in the market, who tend to focus only on economic circumstances no matter their psychological feelings (Okada & Hoch, 2004). The latter is indeed why people decide to go on with BNPL, and producers get higher profits because of the presence of this type of transaction (Okada & Hoch, 2004). This conclusion is confirmed by some experiments that all showed how lateness

in payments has better outcomes compared to the negative ones of losing time (Okada & Hoch, 2004).

2.6. Blue Ocean Strategy

Old and new companies always focus on the characteristics of the market to formulate their business models and upcoming strategies, and this is the main reason for stagnation and the impossibility to reach competitive positions (Kim & Mauborgne, 2015). Kim and Mauborgne (2015) have explained the main differences in the outcomes of red and blue oceans. The former represents the incumbents who follow the industry boundaries, while the latter considers all the companies not already active in the market who can create an uncontested market space (Kim & Mauborgne, 2015). Therefore, getting crowded in the economic environment becomes irrelevant in the Blue Ocean, where rules and status are waiting to be set (Kim & Mauborgne, 2015).

Figure 4 highlights all the main differences between Red and Blue Ocean strategies (Kim & Mauborgne, 2015):

Red ocean strategy	Blue ocean strategy
Compete in existing market space.	Create uncontested market space.
Beat the competition.	Make the competition irrelevant.
Exploit existing demand.	Create and capture new demand.
Make the value-cost trade-off.	Break the value-cost trade-off.
Align the whole system of a firm's activities with its strategic choice of differentiation *or* low cost.	Align the whole system of a firm's activities in pursuit of differentiation *and* low cost.

Figure 4: Red Ocean versus Blue Ocean Strategy. Source: Kim & Mauborgne, 2015.

The reason why this strategy can be so successful in specific markets is that users tend to focus on value innovation (Kim & Mauborgne, 2015). The latter means that through innovation it is possible to end up building value for both buyers and the company itself, thence ending up with an uncontested market space (Kim & Mauborgne, 2015). Value is in this sense built by focusing on utility, costs and price at the same time (Kim & Mauborgne, 2015). Roughly speaking, it could be said that value innovation is the cornerstone of the Blue Ocean Strategy, represented by Figure 5 below (Kim & Mauborgne, 2015):

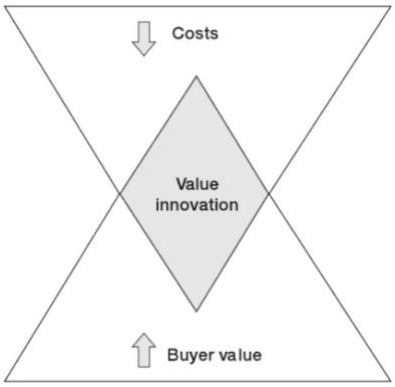

Figure 5: Value Innovation. Source: Kim & Mauborgne, 2015.

The meaning of Figure 5 is that the creation of uncontested market space is the result of focusing on both company's and buyers' value (Kim & Mauborgne, 2015). What has always been said is that Blue Ocean is extremely riskier than the Red Ocean strategy, while it should be clear out that all strategies have risks (Kim & Mauborgne, 2015). The decision on which path to follow is always based on the cost-benefit trade-off where the Red Ocean usually outweighs the Blue Ocean (Kim & Mauborgne, 2015). Nevertheless, if the company aims the creation of new demand and the unlocking of new market space, then the Blue Ocean is the only possible solution to adopt (Kim & Mauborgne, 2015). Of particular relevance is indeed how Blue Ocean's goal is to minimize risks over the long run, thus by taking the right decisions from the beginning the company would be able to maintain uncontested competitiveness (Kim & Mauborgne, 2015).

A series of tools should be adopted by the company in order to see blue waters and immerse in them (Kim & Mauborgne, 2015). First and foremost, the Strategy Canvas serves to get the state of the art of the actual situation in the market, to see whether there could be some profitable and unmatched opportunities (Kim & Mauborgne, 2015). Going on, a good strategy should implement the following three elements: a) focus; b) divergence; and c) Compelling tagline (Kim & Mauborgne, 2015). The latter is the representation of what makes the company in line with the possibility to tackle the market and achieve competitiveness (Kim & Mauborgne, 2015).

The Blue Ocean Strategy is built anytime the company is able to take distance from a head-to-head approach in six different parts, as explained in Figure 6 below (Kim & Mauborgne, 2015):

	Head-to-head	Blue Ocean
Industry	Focuses on rivals within its industry	Looks across alternative industries
Strategic Group	Focuses on competitive position within strategic group	Looks across strategic groups within industry
Buyer Group	Focuses on better serving the buyer group	Redefines the industry buyer group
Scope of Offering	Focus on maximizing the value of the offerings within the bounds of its industry	Looks across to complementary product and service offerings
Functional-Emotional Orientation	Focuses on improving price performance within the functional-emotional orientation of its industry	Rethinks the functional-emotional orientation of its industry
Time	Focuses on adapting to external trends as they occur	Participates in shaping external trends over time

Figure 6: Head-to-Head versus Blue Ocean. Source: Kim & Mauborgne, 2015.

In conclusion, Kim and Mauborgne (2015) have tried to explain to entrepreneurs and companies that in order to successfully enter a new market and be competitive since the beginning, they have to aim at creating an uncontested market space through the use of the Blue Ocean Strategy.

3. CASE FOCUS

This section is focused on platforms and on Dicopay company. Platforms are included in order to reduce biases and to give a broader view of the product offered by the company, and that is the reason why there are differences among platforms. In addition, the aim of having platforms in this section is to have an operational point of view, since the literature review has been structured by considering mainly the financial world. By doing so, it should be cleared out that Dicopay's offer is in the financial system, but it must be considered a platform, thence with all the implications explained below. Afterwards, there is the explanation of all relevant aspects of Dicopay company, with precise attention to the transactions' steps done within the application.

3.1. Platforms

3.1.1. Digitization of Platforms

From time to time, there has been an increase in the types of platforms that positively tackled the whole business World. It can be considered as a new phenomenon that could be used inter or intra-organizations, and in both cases, it becomes a relevant aspect of the economic circumstances. High-tech platforms are the ones that enable the building of profitable market space for new businesses (Gawer, 2009). The long-term stability of any type of platform is referred to the investments in innovation and its application through Artificial Intelligence (Gawer, 2009). In other words, in order to be successful in implementing a platform, a company must first be innovation-driven.

Platforms depend on what they serve, and nowadays there are different groups of systems based on their offer. For instance, social media platforms are perhaps the greatest ones in terms of usage, where almost the entire World is connected through socials. A more recent phenomenon regards the new payment platforms, namely PayPal and Klarna, in which two different groups of people (i.e., "sides" of the platform) are interconnected (De Reuver et al.,2018). The latter is extremely relevant in all daily-basis activities, since it has changed the way people pay and get finances, and that is the main reason why these platforms have been considered to be disruptions. All these financial disruptors have, as a common denominator, the digitalization of their businesses, which fastens all the stages of the value chain and allows the reduction of geographical distances (De Reuver et al.,

2018). Precisely, platforms like PayPal do not require at all proximity between the sender and the receiver, thence it eases the enlargement of the whole business.

Financial platforms are the perfect example of what multi-sided platforms have as specific characteristics: the creation of a bridge that links the two sides (De Reuver et al., 2018). These two parts never mix in the same core interaction, such that in this case there is always two different situations: one of the creditors, which is in excess of finances, and one of the debtors who need finances to proceed with the core business. Multiple studies have demonstrated that, when dealing with multi-sided platforms, the value brought to one group increases along with the increase of users on both sides non-linearly (De Reuver et al., 2018). The latter is the outcome of network externalities that becomes relevant when more people download the platform itself, hence, when a critical mass of users/producers is reached. This phenomenon can be direct or indirect. The former is when the positive externality sticks to one of the sides, while the latter is when, for example, the value of senders increases because more receivers start to use that precise application. Reciprocal effects among users are explained in detail further on.

Being digital means that the platform works smoothly through standardized data and/or information that are run by the system. Therefore, the main limitation of the application of AI on platforms is the impossibility of perfectly customizing all activities. Nevertheless, the aforementioned constraint is surely less relevant than all positive outcomes, starting from the speed and efficiency that dramatically increase (Kallinikos et al., 2013). The functionality of any type of digital platform depends on the presence of clouds, databases and precise analytical solutions (Hein et al., 2020). The goal of platforms is to give people an easier way to interact with each other, thus giving them a standardized way of performing, for instance, transactions. In the latter, there will always be two different types of users, based on their needs and their goals, such that there will be an exchange of money from the ones in surplus to the ones in deficit. Financial platforms will be discussed later on, once there is a clear specification of the digitization of these ecosystems.

Since platforms have nowadays become a phenomenon that has influenced the whole World, it should be cleared out how each system works in a different way depending on their impact on society. Gawer and Cusumano (2014) have defined the concept of platform leaders, happening anytime these can use their dominant position in the market to improve their market share, perhaps by diversifying their activities. The common

characteristic of these leaders is that they all started with a clear focus on the market, by then using revenues and profits earned to improve their businesses. The most known example is Amazon, which started as a market space where to buy books to then diversify its online services, from music and entertainment to financial services. By all means, the takeout of this statement should be that digital platforms have become so relevant in the nowadays activities that it is impossible for entrepreneurs and companies not to take into consideration this as a plausible business model.

In the past then, digital platforms have been based on human capital, thus workers ran their activities through the use of sites or software. With the introduction of industry 4.0, disruptive changes have been made, and more companies have decided to create a business model that gets the most usage of AI in order to receive better outcomes (Simsek et al., 2022). Hence, competitiveness depends on the presence of the disruptive company in the market, even though one consequence is sure and it does not change: competitors have to adapt their business model if they aim at remaining competitive over the long run. Looking at the differences based on the size, outcomes are pretty easy to forecast: if disruptors are incumbents, then they could only increase their market share and profits over competitors. If instead startups are the ones who launch a new digital platform, then they could easily create their uncontested market space if the launch is sustained by a successful strategy that targets the right consumers. Over the past decades, numerous startups have entered successfully the market, as for example Uber, which has changed the way people get transportation in big cities, giving competitors no alternatives than adapting their businesses in order to be able to remain in the market.

Teece (2010) has then emphasized how no disruptors become competitive and impactful in the market without the implementation of a good and specific business model. In other words, the success of a digital company does not depend only on the proposed solution, since there is no good outcome without a model that is in line with the usage of AI in that market. The main task identifies in ecosystems is always the same: adapt the structure anytime there is something that could be added to reach better financial outcomes (Teece, 2010). For example, Facebook started as social media only, and from time to time new changes have been made in order to reach more people and to make it an everyday social utility. In other words, in order to scale up, platforms need to go beyond their core interaction layering new products or services (Parker et al., 2016). By translating the aforementioned situation in a more theoretical aspect, business models regarding digital

platforms should consider as a main goal the necessity to span boundaries to include more customers in the ecosystem.

The main dilemma arising is the so-called *chicken or egg problem*, which describes the main limitation to reach the critical mass of users (Stummer et al., 2018). The chicken or egg dilemma states that, in order to create positive network effects, the critical mass of users must be reached, and this is achieved by having producers using the platform. Nevertheless, the critical mass of producers is achieved by influencing more users. The chicken or egg dilemma states that successful platforms are the ones that targets precise segments of the market by then improving the product to positively influence both users and producers at the same time (Stummer et al., 2018).

In conclusion, the terminology of *digital platforms* refers to a series of different situations, and all these have common characteristics to be considered in order to actually be successful in the market. As previously introduced, the next section has a focus on financial platforms, looking at how these have to be performed in the financial industry, which is surely one of the most competitive ones because of the advent of FinTech.

3.1.2. Financial Platforms

First and foremost, these kinds of ecosystems are the ones that provide financial solutions to people, making them able to choose among a broader alternative for finances or payment systems. As highlighted in the literature review, the financial World has faced difficult challenges that all come from the alternatives provided by players in the market. If previously indeed there were only commercial banks that provided financial solutions to customers, nowadays people could easily get the required finances through a series of different options.

When it comes to financial ecosystems, they all have one thing in common: the circularity of money that comes into the platform from one direction and exits from another one. *Figure 7* explains how this flow is generally done:

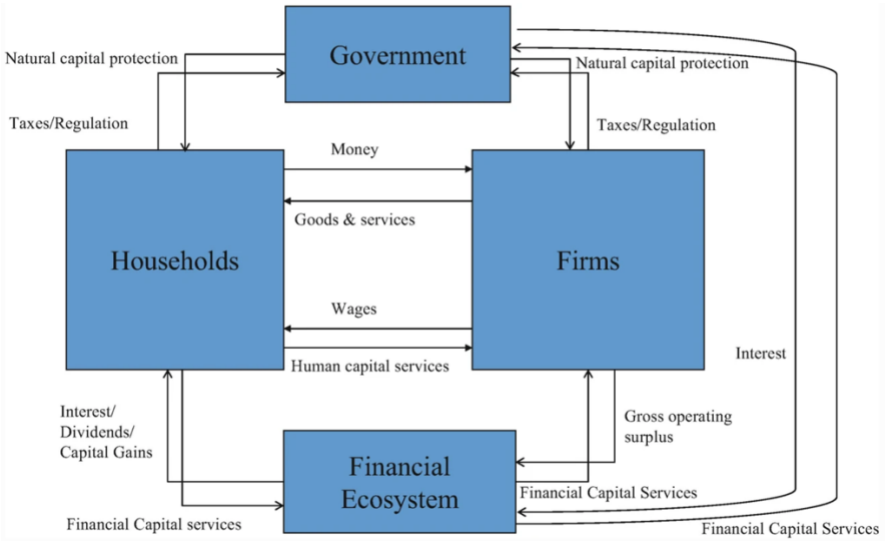

Figure 7: *Financial ecosystem structure. Source: Bose et al., 2019.*

Figure 7 is a broader representation of financial transactions considering ecosystems since it takes into account the government and only two other types of groups: households and firms (Bose et al., 2019). Nevertheless, the generalization of the represented structure is that there is always a circularity of the transaction and money that enters the ecosystem from one side and exits from another side. The latter could be explained by posing a difference between the ones in money surplus, firms generally, and the ones in money deficit, which are households searching for finances (Bose et al., 2019).

Financial ecosystems are therefore the ones characterized by what Bose et al. (2019) have called a tangle of interconnections, where people iterate their activities to get the best out of a single transaction. Platforms that sell financial solutions to people are then able to compete in the market only through the presence of specific transactions between users. From time to time, platforms selling financial solutions have increased in terms of number and size, such that nowadays traditional commercial banks have much less relevance in the financial market compared to the past. This phenomenon fastened especially after the financial crisis in 2008, which determined a failure of the bank system and an increased in the alternatives proposed to clients (Somin et al., 2020). These ecosystems have the same structure of lending with commercial banks since there are two separate types of actors: the ones that need money, and the ones that sell products and/or services (Somin et al., 2020). The mentioned difference will be discussed later on when identifying the effects created by each side of the platform.

Although the digitization of platforms has become a relevant aspect of daily economic activities, there have been bigger impacts of this evolution in some activities of the

market. Precisely, FinTech has determined the evolution of a series of platforms that eased the intermediation between suppliers and consumers in general, while there has not yet been a clear evaluation of digital platforms on other sides of the market, likely the asset management (Haberly et al., 2019). Haberly et al. (2019) have then tried to come up with the so-called Global Financial Network (GFN), where different sides of the financial market interact with each other, with the aim of building an ecosystem. The GFN considers several platforms that could be used in different ways to reach a common goal: simplifying transactions by breaking down potential barriers in the financial World (Haberly et al., 2019). Generally, the main barriers that the financial ecosystem has always had to face have been found by Blach (2020) as the following:

- Lack of trust in financial innovation.
- Inadequate knowledge of the current market offer.
- High costs of implementation.
- Limited understanding of financial innovation.
- Mismatched market offer.
- No need to search for new solutions.
- Difficulties in assessing efficiency.
- High transaction costs and fees.
- Complex construction.
- Unclear accounting regulations.

Blach (2020) has demonstrated, through the above list, how startups have to take into consideration a series of possible threats when delivering financial innovations. The latter is, in his opinion, eased by the presence of platforms used by the whole market, since surely some of the problems could be easily overwhelmed (Blach, 2020). Theoretically, ecosystems bring with them a series of elements that, when combined, allow users to reach their objectives in an easier and faster way. Precisely, platforms break geographical distances and set to zero possible asymmetries of information. These two aspects are extremely relevant in the financial World due to the outcome of being treated fairly by the ones who have a surplus of money. In other words, applications that implement Artificial Intelligence should be seen by customers as a way to reach their required finances in a more efficient and secure way compared to the traditional ways.

When looking at the financial platforms, one thing appears clear: the sharing economy is part of the business model (Agyei-Boapeah et al., 2022). Industries have therefore to look

at how ICT systems could be used to make that industry work better and faster compared to the past circumstances. The latter is what disruptive companies have always tried to reach through their businesses. There have been during history a series of financial innovations that have built different types of interactions among players in the market. For instance, the creation of apps that allow people to interact with each other through money exchanges from one part to another, like PayPal. Given that, financial platforms could be explained as disruptors for the whole market. In particular, traditional loans or previous players in the market have to invest in the innovative field of their company in order to remain competitive over the long run (Agyei-Boapeah et al., 2022).

Most of the time, the Financial World has faced disruptions coming from small businesses or startups. Why is it so? The main reason that could explain this phenomenon is that big corporations usually seek to develop products or innovative solutions for their main consumers (Agyei-Boapeah et al., 2022). On the contrary, startups have to become competitive against incumbents through their products/services, such that the only way is to propose something that has not been yet proposed by competitors. In other words, as previously explained, building an uncontested market space might be the only strategic way to become a disruptor in the financial industry. Klarna is the perfect example of how a financial platform could be seen as a disruptor when targeting the right consumers with the perfect combination of AI and human capital. All these ecosystems must be seen as disruptors due to the elimination of barriers in terms of time and space as a consequence of RPA implementations. Over time, there has been then a declining trust in commercial banks, thus these alternatives give people the possibility to get their finances or investments (Agyei-Boapeah et al., 2022). Nowadays, for example, online communities use PayPal to pay and get paid, such that there is no need at all to lend by traditional players in the financial market.

The financial world has seen the most impact of platforms, and the reason is that it essentially makes transactions easier due to the ecosystem that breaks time and space. As previously explained, each player active in the financial market should be aware that the only way to maintain a level of competitiveness is to actually be innovative and spend time and resources to sell new solutions. Indeed, anytime an incumbent does not consider all the competitors that just came into the market, it would stop maintaining a level of competitiveness and thus would exit the industry. In other cases, which actually represent the most likely out of the alternatives, they would just see themselves stuck in the middle (Agyei-Boapeah et al., 2022). In other words, they might be too big to fail, but they would

surely not have the right circumstances to grow and become more competitive than the others.

In conclusion, financial platforms must be seen as digital ecosystems working in the financial world. These are generally SMEs competing against incumbents through AI which makes the interactions even more effective and efficient for all parts of the transactions. By definition then, players influence others in a more direct or indirect way due to a completely different business model to the traditional value chain structure. The following sub-section aims to deeply explain how platforms are structured and how to create a successful ecosystem for all parts of the industry.

3.1.3. Structure of Platforms

Business platforms have usually a peculiar structure, where the first characteristic resides in the verticality of the organization. Being an app means that most of the time employees work horizontally with the aim of improving the utilization of the app by the largest number of users possible. In other words, the value chain of traditional businesses, also in the financial industry, is replaced by a more agile structure (Agyei-Boapeah et al., 2022). As previously highlighted, a platform means having at least two different players. To generalize, let's assume there is one supplier and one producer. In this case, the supplier sells the product to the consumer through the app, for example Amazon. The latter's task is indeed to transfer the value to the consumer and the producer in terms of product delivery and money received, respectively.

Going on, business platforms have an advantage compared to traditional structures: the scaling up of the market because of the higher efficiency and the elimination of possible gatekeepers. They do not need to be close to consumers, and their only mission is to create a platform that is easy, effective and successful enough to reach more users (Agyei-Boapeah et al., 2022).

The third advantage that platforms have over usual businesses is that, although it is essential to target the right market segment in the beginning, apps are highly flexible and could easily become impactful on other parts of the market. All successful financial platforms have targeted first a precise segment of the population, and then they have moved to other parts of the system to increase their ecosystem's value (Agyei-Boapeah et al., 2022). By doing so, there is not only the building of an uncontested market space as suggested by the Blue Ocean Strategy, but even the possibility to "steal" consumers from incumbents. The latter is the main threat that disruptions could determine, thence if

on one hand platforms are extremely beneficial for the market, on the other they might force incumbents to exit the market.

Another characteristic of platforms is their possibility to increase their service portfolio with tiny adjustments or implementations of the app (Agyei-Boapeah et al., 2022). Most of these ecosystems have begun selling one product or service, and then they have found new ways of using their platforms. Recalling Amazon's case, it started as a place to buy books, and now it considers different services in itself, from video to music and so on. Therefore, it is extremely relevant that platforms start with an idea and then if they are successful, they could find new ways of using that app in order to reach more users. As in the case of financial platforms, where incumbents implement their businesses based on possible improvements for their already achieved customers, platforms diversify themselves once they have entered the market. It would not be beneficial to launch an app that immediately allows users to do multiple things, and the reason is simple: people usually like easiness (Agyei-Boapeah et al., 2022). They could get confused by new platforms that have been speculated to do a series of different actions. That is to say that each new change should be made with caution and it should be given enough time to users to understand the new implemented functions.

As previously deeply analyzed, there are different types of platforms based on their service offered, but sometimes these separate industries can collapse and be present in a precise app. By paraphrasing it, a single platform could represent itself as part of a series of different industries, and this is due to innovations that could be easily implemented. Nevertheless, for the purpose of this study, it is relevant to see thoroughly the financial platforms and how they are structured. Most of the time, these are Blockchain-based, where general information is placed at the center of the ecosystem. The latter is extremely beneficial for both parts of the ecosystem since it reduces the need to have financial intermediaries. This phenomenon is called *Decentralized Finance*, and it is what platforms working in this industry are trying to reach (Agyei-Boapeah et al., 2022). The presence of simple electronic interfaces has made possible the reduction of costs for both parties of a single transaction due to the absence of the *middleman* (Agyei-Boapeah et al., 2022). It is surely the most innovative aspect of the financial World, and it has to be considered by all incumbents if they want to maintain their level of competitiveness because otherwise they will easily be cannibalized by new entrants selling intelligent solutions.

What are the actual effects of having so many platforms in the nowadays business interactions? The answer would be the shift of focus from inter-firm competition to a joint approach of competition-cooperation among people in the ecosystem (Hein et al., 2019). The main consequence of this deviation could represent the replacement of the previous meaning of *goods'-based value creation* with the resulting *service dominant logic*. Therefore, the value for platforms' users highly depends on the services offered and thus the attention should be on the service innovation aspect that could dramatically increase people's benefits. The main two requirements in order to have the service dominance value creation are:

- *Structural flexibility*: the easiness of having interactions among users of the platform. In other words, the capacity of actors to get the most out of the platform through the possibility to work with others (Hein et al., 2019).
- *Structural integrity*: how people from each side of the platform are coupled with each other. It could be seen as their opportunity to have interactions with different actors and not remain stuck with one or more users (Hein et al., 2019).

A platform is generally composed of a common set of rules among users, these being the cause of both direct and indirect effects (Eisenmann et al., 2008). Economically, the effects of people using platforms could be explained as twofold: two-sided networks and network effects. The former happen anytime different groups offer each other some benefits, while the latter emerges from side to side, as a result of more people using that platform (Eisenmann et al., 2008).

Platforms' success is based on their level of closeness. Every ecosystem is considered to be closed when it forbids usage for people that are not subscribed to the system (Agyei-Boapeah et al., 2022). In this case, on one hand, it protects the entire software from potential threats, on the other hand, in order to become a subscriber, usually there is a fee that most of the time people do not want to face. Open platforms are instead the ones that do not have any kind of restriction on their use, thus people could start using them at any moment. Theoretically, openness means more possibility to increase the number of users. Nonetheless, especially when it comes to the financial industry, platforms tend to be closed, and the reason resides mostly in the higher profits earned by this structure (Agyei-Boapeah et al., 2022). The level of closeness or openness is relevant in terms of usage, participation, monetization and regulation (Agyei-Boapeah et al., 2022).

There are a series of examples that consider all the mentioned aspects of digitization, finance and structure mentioned in this section. Amazon is one of the examples above discussed, which has all the elements identified concerning the structure. As a clarification, it is an open system where both flexibility and integrity are assured, and it has both two-sided and network effects as the basis for its value creation. Lastly, it is a service-dominant platform since its business model increases time by time with new services offered. Nevertheless, Amazon's example is only to demonstrate that there actually is the sharing of the same characteristics among different platforms. The following section goes deeply into how Dicopay is structured, how the platform works, and how all the mentioned elements in the literature and regarding platforms are present in this ecosystem.

3.2. Company Overview

3.2.1. History of the Company

Dicopay is a service-dominant company launched in 2018 in the United States of America. Its business model is clear and simple: make use of AI in order to fasten invoices' payments in the factoring system. Since the beginning, people using factoring solutions have seen the potentiality of Dicopay, such that it has seen a growth of about 200% in the first two years. It has been so successful once it has been launched that all the forecasts about future transactions saw Dicopay as the basis for invoices' payments.

Unfortunately, every market, more or less, has had a negative impact from the Covid-19 black swan, especially the SMEs due to the absence of enough money to survive during that period. If on one hand, the pandemic has impacted the whole World, some countries have been more negatively influenced than others. Italy, Spain and the entire Mediterranean Countries, for instance, have faced a tremendous situation. Even the United States of America have had issues in their businesses, such that a series of companies failed and some owners decided to sell their companies. Dicopay is the perfect example of a successful Startup that has to exit the market because of Covid. Therefore, with time founders started to look at the possible alternatives, ending with the selling of the company to a Swedish Entrepreneur.

The new owner of the company has had, since the beginning, a clear idea in mind: change the face of financial transactions. Having this vision in mind makes everything more challenging and competitive, and this requires a series of aspects that the service offered and the company itself must have. The next sub-sections are indeed aimed at highlighting

all the important features of Dicopay, and the goal is to highlight how it could actually be a disruptor in the financial World.

3.2.2. Structure of the Company

Being a Startup means that the structure is pretty simple, and it is actually in line with what they are aiming at creating in the whole World: easiness. The latter is the most important aspect for people working in this organization. Right after the acquisition from the Swedish entrepreneur, his idea has been indeed getting the most out of Artificial Intelligence in order to avoid a pyramidal structure in the organization. By doing so, Dicopay has, in these years, maintained a pretty flat structure in which people work at the same level, all together with the only purpose of increasing the value of the application.

Dicopay works in close interaction with students in Sweden, thus it gives the opportunity to know the company and the people working in it for a series of graduating students from both Gothenburg and Stockholm. In particular, even though it is a Stockholm-based company, people working at Dicopay travel as the basis of their organization, thus they usually spend time in Gothenburg. Every Startup must look at how to find the required finances to launch the business; once have found the investors, another crucial activity is to make potential customers aware of the product. These are the main activities on which the company is aimed right now, meaning that being small means quickly shifting the target and the structure.

The company works in close interaction with a consulting agency called Vimentis, which focuses especially on the marketing aspect and on how to select the best strategy to competitively get onboard as many people as possible. It is peculiar how Dicopay's target has never been to select one segment of the market and start from it, and the reason is that the product offered could be used by all entrepreneurs without distinctions. This is due to the idea of the company not following the competition by just selecting a part of the market where the company could work. Instead, Dicopay has chosen the Blue Ocean Strategy as the basis of its expansion, such that it must remain different from competitors and look at this differentiation as the main aspect to highlight to create an uncontested market space.

Broadly speaking, Dicopay's structure changes based on the goal that the owner wants to achieve at a precise moment and being flat allows the company to not change anything in order to move from one activity to another.

The company's strategy and mission are explained further on, and the reason is that the service offered must first be clarified before actually understanding the aforementioned aspects of the company. For this reason, the following sub-sections point out the main aspects of the platform. The researcher has decided to give readers a visual representation of the company's structure, which is the following one:

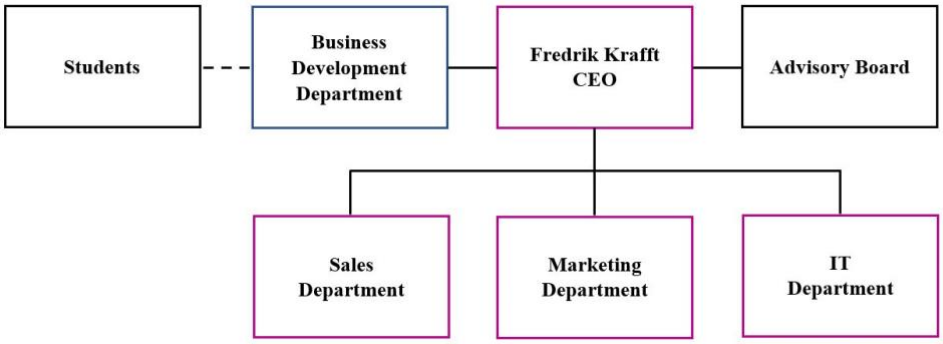

Figure 8: Dicopay's structure.

3.2.3. Dicopay's App

As previously introduced, the company's core business is a phone application that could be used in invoice transactions. Throughout history, there have been a series of companies working in the financial industry that started their business with an app, so there is nothing disruptive in this aspect. What is peculiar about Dicopay is instead how the platform could change the World of factoring, and this is due to a series of aspects that are explained in this section.

First of all, it is relevant to show how Dicopay does not work only as an intermediary between the sender and the receiver of an invoice. Indeed, if that was the case, the company would have only been working at the moment of the transaction. Instead, the entire relationship built between parties happens within the app. The main function of the app is to give producers a space where they can collect money from invoices at the moment invoices are sent to consumers. The latter is the main reason why, in the background part, there has been a focus on BNPL solutions, and that is also what differentiates Dicopay from all competitors in the factoring system. Nevertheless, by only assuming these aspects, Dicopay does not appear to be a disruptor because of the presence of already active firms operating as BNPL solution providers, namely Klarna or PayPal. Therefore, what is the core aspect of Dicopay that makes it a peculiar company compared to others? As seen for the structure, only a few people work there, and the app goes smoothly because every step of the transaction gets used in RPA and AI. In other words,

no human capital is spent on the functionality of the app, and employees and managers are then aimed only at improving all aspects of the platform without actually making them work.

As explained in the theoretical part of platforms, being digital means being able to let people interact with each other even though they are geographically dispersed. Dicopay's goal is indeed to change the face of invoices in the whole World since some countries use this source of transaction compared to others. For this reason, the target is to let the app available in all the app stores, both iCloud and Android-based devices.

In order to start using Dicopay, there are some steps that entrepreneurs and individual contractors have to go through. First of all, once the app has been downloaded, there must be an onboarding process through which AI analyzes the reliability of those contractors. If the onboarding is passed, then the second step is phone verification, which consists of verifying whether the phone number is used, and the person actually uses that number. This step is mainly done to see if the downloader is a human or a machine. The following steps are the ones that require the most time because now the bank that works as a deposit for the contractor must accept Dicopay as the basis for transactions. Once these stages are finalized, all people can start sending and receiving invoices within the Dicopay app, and it is at that moment, the platform becomes peculiar. Precisely, all transactions follow the steps explained below:

- **Sending of the invoice**: the producer sends the invoice to the consumer in the app.
- **Acceptance of the invoice**: the consumer accepts the invoice, and there are several ways the user can use it, but the video recording seems to be the one that Dicopay wants to speculate as the best. Here consumers must take a video on Dicopay where they accept the payment.
- **Purchasing of the product or service**: once the invoice has been confirmed, the product or service is given to the consumer.
- **Money transaction**: being a BNPL solutions provider means that the producer does not have to wait sixty days to get the money back. For this reason, at the moment of the acceptance of the invoices from consumers, the bank transfers immediately the money into producers' profiles.
- **Repayment from consumers**: buyers accept the invoices especially because they do not have anything to lose. In particular, if on one hand, Dicopay takes the 3%

out of all commissions, on the other consumers still have sixty days to pay back the money. This stage is also completed through Dicopay, where consumers have the possibility to repay either all at once or in smaller amounts in different periods.

In conclusion, from the aforementioned stages, it is clear how the company runs its business with the vision of simplifying transactions. Simplicity is indeed what the owner wants to recognize as the strength of the organization, and the reason resides in cultural habits. In particular, studies have demonstrated that people do stick to habits when it comes to financial transactions, therefore the only way to make them shift is to sell them something that eases their lives. In addition to that, the company uses AI as the basis of its core business, which means that there is no necessity to hire people working, as instead, competitors do.

Finally, the company's goal is to create an uncontested market space through the Blue Ocean Strategy, which means deciding where and how to act not based on competitors but on customers. For this reason, the easiest way to do so is to find segments of the market that would be most affected by the use of Dicopay, to then broaden the boundaries and get on board different sectors.

The following section explains how this study aims to reach these goals; thus, the idea is to deeply explain the methodology in all its parts in order to lower biases in the discussion and data analysis parts.

4. METHODOLOGY

This section gives a clear visualization of the process adopted in the study. It first gives the reasons behind choosing a quantitative study, with then a focus on the single case study form and its main aspects. Going on, perhaps one of the most important parts of the thesis, thus the data collection and all assumptions taken when identifying the sample, as well as the structure of the survey launched among SMEs.

4.1. Research Strategy

4.1.1. Philosophical Motives

The purpose of each type of business analysis is to address a specific solution to a problem. Since the economy is a social science, it is essential to have a basic understanding of the philosophy. For this reason, the philosophical aspects of social sciences have to be identified, thus starting with ontology to then highlight epistemology (Bell et al., 2019). The former is about making a theory regarding the nature of reality, while the latter is the theory of knowledge (Bell et al., 2019). Since the research project is based on quantitative aspects of a case study, the ontological position is objectivism, discussing reality as an observable object with rules. Objectivism is sealed by numbers as the basis of the entire discussion, thus there will be statistical and mathematical explanations of the conclusions addressed by the study. People understand the things that go on and they act based on standardized procedures. It is then fundamental that epistemology follows what ontology has proved since it gives us a way to retrieve and analyze data. An objectivist approach should then be matched with direct or indirect observation of the World in order to gain the right information (Bell et al., 2019). In other words, a positivist attitude is needed. Some relevant principles have to be followed to properly use positivism:

- Only phenomena identifiable through the five senses can be considered.
- Be deductive when choosing the research questions and hypotheses.
- Be inductive when providing facts.
- Be objective when conducting analyses.
- Scientific statements differ from normative ones (Bell et al., 2019).

The reason why the analysis is conducted through an objectivism-positivism approach is that data are from the real world regarding the cash-flow problem resulting from a precise

action: the delay in invoices' payments. Once this is done, through the analysis conducted using the software *R* (R Core Team, 2014), there will be insights explaining which segments of the market could be more positively influenced by the Dicopay app. The last part of the analysis is related to the Blue Ocean Strategy, and how the company could implement it in order to aggressively penetrate the market and become competitive from the beginning. By combining the chosen research questions with the positivist approach, it is clear how there will be a deductive procedure to gather data on the problem, which will then be followed by an inductive strategy to assess the potential network effects (Bell et al., 2019).

4.1.2. Quantitative Approach

Another important difference to highlight is how to choose quantitative or qualitative approaches, and which are the consequences of them. As previously entailed, the study is focused on the quantitative aspect of illiquid assets. Particularly, these could be explained as a series of aspects that all recall the same cause: the amount of time spent waiting for cashbacks. The quantitative approach has some theories that allow the data analysis, and therefore the perspective used is one of the researchers, and then the main focus of quantitative studies is to gather and further analyze numbers. By combining the quantitative approach with the philosophical aspects of social sciences, numbers allow the researcher to be completely objective, therefore explaining reality without identifying a new theory (Bell et al., 2019). Thus, the deductive approach is guaranteed and there can be found answers to the research questions and the hypotheses without assuming new theories as the basis. For this reason, the idea is to launch a social survey, composed of a series of questions divided into arguments, allowing the study to be conducted by lowering biases. Although in order to see the real impact of the platform more answers should be collected through the survey, the researcher considers 100 answers to a fair amount of questions to address the first results and to discuss the potentiality of the service.

Roughly speaking, the research strategy is quantitative since the focus is on testing data rather than generating new ones. The testing of data will then be the basis to see the real impact of Dicopay's app. The following sections explain how data will be gathered and how to narrow the analysis to see the potential impact of the product under consideration. Nonetheless, the potential impact of the app is even identifiable through the use of secondary data. In particular, the literature review is aimed at highlighting the state of the art of the actual situations. For this reason, the background has been conducted with a

precise strategy of selecting and choosing the right articles based on the previously highlighted keywords. Since it refers to what previous researchers have demonstrated, the literature review is not the basis of the discussion, but it is recalled once outcomes from primary data have been found. Specifically, papers will be used as frameworks when discussing results and possible generalizable conclusions since the idea is to explain that platforms, in general, are advantageous for everyone.

4.2. Research Design

4.2.1. Single Case Study

As identifiable through the combination of the proposed title with the history regarding Dicopay, and as previously anticipated, the paper is a case study, known to be one of the best designs to assess business and management current circumstances (Bell al., 2019). First of all, the reason behind this decision is given by the in-depth analysis of the cash-flow problem and how a specific company could solve the aforementioned issue through its innovation (Crowe et al., 2011). A common mistake in academic papers is to consider case studies only qualitative reports, therefore through semi-structured interviews the interviewer is able to gather information about the company, but this is not the status quo (Bell et al., 2019). Knights and McCabe (1997) have stated how the qualitative approach to a case study is sometimes lacking objectivity, thus it does not light up the important features of the organization under consideration, such that quantitative methods could be better suited. By then combining the research design with the strategy, the case study pops up to be deductive, therefore theories have been taken for granted and then data are based on them. Not all case studies are the same, such that their design is the consequence of their focus.

Yin (2003) has pointed out that there are five different types of case studies. Based on this differentiation, since focused on a precise company, this paper appears to be a unique case where Dicopay aims at solving the problem of cash flow through its app. It is considered to be a unique case study because the entire analysis focuses on the offer of one single company and on how the service could influence the real circumstances in the financial World. Specifically, although the discussion goes further on the analysis and it explains how in general these solutions could be successful, it still starts from Dicopay itself. In other words, it is not possible to draw same conclusions by analyzing several companies and their solutions, and that is why the design is a single case study.

4.2.2. Research Quality

When it comes to the criteria of a case study, some of them are recalled from the ones of the qualitative approach. In particular, reliability, replicability and validity have to be assured anytime a researcher is conducting a case study (Bell et al., 2019).

Starting from reliability, it refers to making the paper as much truth as possible (Bell et al., 2019). By doing so, there will be the possibility to reflect the findings on the real world, making companies able to state their strategies and activities on it (Bell et al., 2019). Reliability refers to the trustworthiness of all aspects of the study, starting from research questions and hypotheses and ending up with the discussion (Roberts & Priest, 2006). For this reason, all decisions are made with the aim of being as much close as possible to reality, with the goal of demonstrating real problems in the financial world and how to overcome these.

Replicability means that upcoming analyses should be able to reproduce what has been previously done and what this paper addresses as findings (Bell et al., 2019). To ensure replicability, the following sections clearly explain how data are collected, how the analysis is conducted and how conclusions are addressed. Nevertheless, most of the time results would be different, since everything is based on the period in which the research is conducted and on the chosen companies for collecting information. In particular, although objectivity is the basis of this study since numbers and statistical outcomes determine the discussion, being a single case study means that the generalizability of the proposed research is not assured. The latter is then the reason why the last part of the empirical findings tries to explain how conclusions for Dicopay could be generalized for all financial players in order to set to zero the illiquid assets.

Finally, validity gives the case study a generalizable representation of reality (Bell et al., 2019). Being quantitatively focused makes possible the confirmation of these values, such that those are significant and studies should always reflect them. Hence, measurement validity is given by data, since these are objective, wherefore not influenced by the researcher's perspective. On the contrary, internal validity is more related to causality, from data to resulting theories. Furthermore, there must be a causal relationship between variables, and the analysis should go towards a precise direction because of the differentiation between dependent and independent variables. In this study, the dependent variable is represented by illiquid assets, which increases based on the impact of the independent variables on it. For this reason, the analysis is organized by looking at how

independent variables influence the dependent ones and how, by utilizing the Dicopay app, there will be lower negative influences of the illiquidity of assets. Once identified so, the focus will shift, especially in the discussion part, on how the Blue Ocean Strategy could be implemented by Dicopay in order to successfully penetrate the market. Roughly speaking, both measurement and internal validity will be present during the analysis.

4.3. Data collection

4.3.1. Primary Data

It is when collecting the primary data that there could be difficulties since there are a series of independent variables that must be considered and lots of barriers that must be overwhelmed. The first and perhaps toughest drawback is how to get in contact with companies. To do so, the best way may be to use Dicopay's network, which has been piece by piece built on small companies. Since they know what the project is about, the use of Dicopay's name will make them feel more comfortable sharing the necessary information. Nevertheless, the analysis must not be limited to companies that have already agreed on this way of making transactions, because otherwise outcomes will be biased and results would not be generalizable.

The chosen sample is based on both purposive and convenient sampling. It is purposive since respondents have all used invoices and factoring solutions. For what concerns instead the convenient sampling, the researcher has used some personal networks to reach the target responses. In order to answer the research questions and test the hypotheses, the survey has been launched among entrepreneurs and startups that used invoices as a source of revenue, and the size of companies is comprised in the definition of SMEs. The geographical dispersion of the survey is the whole of Europe, with higher importance given to Sweden and Italy. Peculiarly, Sweden is the country in which the analysis is placed and where Dicopay is running its business. On the contrary, Italy is more of a convenient choice due to the high network of the researcher, even though previous studies have demonstrated how Italy is one of the most attractive markets for factoring providers.

There is a second barrier to overcome, thence identifying which other segment to target, and here the only way is to make assumptions. In particular, these assumptions and the ones as the basis of the hypotheses have been based on the literature review, which revealed really useful information regarding the types of entrepreneurs that could be positively influenced by the platform of Dicopay. For example, lawyers might be affected by the sixty days time period given to customers. Precisely, they offer their service to win

in courts, while they have to wait and the waiting time changes based on country, such that they are subjected to wait up to five months to get their money back. Since the beginning, it appeared that some contractors could have more benefits from the app compared to others, and lawyers are one of those. Therefore, the first hypothesis, as previously highlighted, would be tested in order to see if this statement could be effectively generalized.

Most of the time, companies do not feel comfortable sharing data that show their weaknesses, which is what the project itself is all about. For this reason, the only way to obtain the necessary data is by ensuring that organizations' names will never be shared. In other words, they will remain anonymous and thus they will not have to fear a possible reduction of brand perception. In spite of theoretical statements, the use of a quantitative approach makes surveys the best way to collect data. In this case, it is relevant to understand the way to narrow the analysis and not be broad. Dicopay has made the researcher in contact with companies, where the objective is to have information without making them feel threatened by the questions. Nevertheless, companies that have answered the questions have been found also through the Factor Chain International. The researcher has found this site as a place where SMEs using factoring as a source of finances interact with each other, therefore this is the perfect place where to launch the survey. Finally, some personal connections of the researcher must be considered as the third way of reaching companies. The personal connections of the researcher are mainly based in Italy, and that is another reason why the sample adopted is mainly throughout Europe and it must not be considered only Swedish-based. The perfect structure of the survey is to first ask for the financial results of past periods. If they agree, the idea is to see when they have spent and after how much time they got revenues back, and it is relevant there to see if they have suffered from that late payments. Going on, the following parts of the survey are aimed at seeing how many times invoices are factored and companies' incline to shift to another source of payment, especially to BNPL solutions. The survey is composed through Qualtrics and it has 31 questions divided into the following four blocks (see *Appendix B*):

- First part: general information on the company, likely size, number of employees, sector, and type of company. This part is relevant in order to test hypotheses and research questions regarding how to competitively target the market. This is relevant to make possible the creation of clusters for the subsequent data analysis, and it does not contain only quantitative questions.

- Second part: number of invoices used, how invoices are created and number of consumers. These are open-ended questions in order to present to the researcher big data that could be then analyzed. The objective here is to see the potential impact of Dicopay's app, and whether those segments have alternative payments already in use.
- Third part: factoring. The main objective is to see how many times invoices are factored and what are the main reasons people decide to use factoring as a source of financing.
- Fourth part: BNPL solution. The goal is to show companies' inclination to start using the Dicopay app to launch invoices and get paid immediately.

The use of Qualtrics may be extremely useful since the beginning because of all charts and statistical results that are given. The concept has been to build a survey that does not take more than 10 minutes for respondents. To have precise results from my analysis, 100 responses are the minimum number that is acceptable from the survey, while there is no maximum level since the idea is "the more, the better". The survey is composed then of multiple questions and matrices, where both of them have a Likert Scale from 1 to 5.

As the history of Dicopay has shown, the company does not limit its application to only Sweden. The latter is mainly the consequence of being an automized platform that does not work only in case of closeness among contractors. For this reason, already subscribed entrepreneurs and independent contractors of Dicopay come from different parts of Europe. Hence, the survey has been spread by not considering only the Swedish market. The reason for this choice is not only to reach the minimum amount of answers but also to see if Dicopay's impact is influenced or not by market circumstances.

4.3.2. Secondary data

Although the survey is the one that gives most of the useful data in order to compute the analysis, it is worth mentioning that there are some data retrieved from articles and previous analyses that may be interesting to identify. First and foremost, Dicopay has provided the researcher with some articles from which they found important aspects of consumers' habits in the payment system. Some of this information are protected by non-disclosure, while others could be a great starting point for the discussion part.

The empirical findings would start from some results of the secondary data, but most of the quantitative analysis considers the primary data and what has been found through *R*. Secondary data become relevant to ensure that the paper maintains the disclaimed criteria

of reliability, replicability and validity. In particular, the statistical generalization of quantitative studies could be the result of explaining whether or not empirical findings have already been met by other studies done in the past.

4.4. Structure of the Data Analysis

First of all, it has to be said that of the 85 responses that the survey has collected, three of them have been removed because of missing variables. For this reason, all tables and charts have a total of 82 responses from the sample chosen.

The data analysis is the biggest part of the entire paper since it is the one that actually explains the potential value of Dicopay's app. For this reason, this section is aimed at introducing the empirical findings and how these will be analyzed by the researcher. The first thing to do is to decide on the software that allows the needed statistical investigation, and the chosen one is *R* (R Core Team, 2014). The latter is surely more professional than SPSS and it gives more ways to conduct bivariate/multivariate analyses. Nevertheless, before diving into the methods that are used to obtain results, it is fundamental to have a look at which types of data are needed to proceed with the study. Through the launch of the survey, it has to be assured that three categories of variables could be present in the analysis: dichotomous, nominal and interval/ratios. Those three categories allow clear and smooth identification of the impacts on the dependent variable, which is the revenue streams of companies. For clarity purposes, the definitions of the aforementioned categories of independent variables are listed below (Bell et al., 2019):

- Dichotomous: data with only two orders. An example could be gender and in this case, the way to move quantitatively is to use 0 and 1 for the two orders (Bell et al., 2019).
- Nominal: categories that cannot be ranked orderly. For instance, types of costs are not ranked following a precise path, therefore those are considered to be nominal (Bell et al., 2019).
- Interval/ratio: identical distance between data, for example, the time spent waiting by producers until consumers settle the invoice (Bell et al., 2019).

Since the outcome has to be the identification of the relevance of time for companies, especially SMEs, to break the competition and survive in the market. Therefore, the most important analysis to pursue is a bivariate between time and revenues. The correlation is the first analysis to do, and then it becomes relevant to see whether or not revenues are

influenced by other aspects. If revenues are actually influenced by other factors in addition to time, the multivariate analysis is what helps the researcher understand the potential impact of Dicopay's app on organizations. The use of linear regressions gives readers a picture of how much of the dependent variable is represented by each factor through the use of the ratios that Rstudio provides.

It is possible to assume from the beginning that time is significant in the analysis, and that is when the second part of the analysis starts. The idea is to continue with R by setting to zero the period that goes from the moment in which the invoice is sent to the time at which it is paid.

The final part of the data analysis will be the implementation of the Blue Ocean Strategy, which will combine the previous stages of the outcomes. Through the use of Rstudio, the impact of time and the slicing of contractors based on the market segment, are confirmed. At this point, it will be cleared out which market segment could be more influenced by the platform, which must be the point where to successfully penetrate the market.

To summarize, there are three different stages that will be done in the data analysis, which can be summarized as follows:

The first part tests hypothesis 1 and get an answer to the first research question. Results on *R* (R Core Team, 2014) could give a clear understanding of how much revenues are influenced by the timing. By doing so, the possible impact on the market of Dicopay's app is cleared out and it will be seen if illiquid assets could actually be reduced by the platform.

The second and the third part are designed in order to have an answer to the other research questions, and consequently, the hypotheses are tested too. In particular, there will be three different sections, that could be summarized as follows:

- First section: explanation of the data, and identification of the important aspects of the dataset.
- Second section: bivariate analysis and trying to test some hypotheses without regressions.
- Third section: multivariate analysis and conclusion of the data analysis.

The previous explanation of the data analysis has been useful to have a broader view of how the sample has been structured. At this point, another relevant aspect to highlight is

which variable is considered the dependent one. Although the bivariate analysis has computed correlations among variables just to see whether they have significance on each other, the researcher's attention has always been pointed to the cash flow problems and the reduction of illiquid assets. In particular, the multivariate analysis is conducted by considering these two variables as the dependent ones, while the independent variables included have been chosen through the bivariate analysis. To give a better explanation of this differentiation among variables, the following table is adopted to highlight the dependent variables at the beginning, followed by all independent ones:

Cash Flow Problem	*Dependent Variable*
Reduction of Illiquid Assets	*Dependent Variable*
Number of Employees	*Independent Variable*
Launch of the Business	*Independent Variable*
Number of Invoices	*Independent Variable*
Number of Customers	*Independent Variable*
Efficiency	*Independent Variable*
Looking for Alternatives	*Independent Variable*
Factoring utilization	*Independent Variable*
Number of Invoices Factored	*Independent Variable*
Debt given to Factoring	*Independent Variable*
BNPL	*Independent Variable*
Competitive Rates	*Independent Variable*
Easiness of transactions	*Independent Variable*
Speed of Fundings	*Independent Variable*
Flexibility	*Independent Variable*
No Guarantees	*Independent Variable*
Sixty Days Waiting	*Independent Variable*
More Cash Flows	*Independent Variable*
More Payments	*Independent Variable*
More Sales	*Independent Variable*
Better Customer Experience	*Independent Variable*

Frauds	*Independent Variable*
Administrative Expenses	*Independent Variable*
Unclear Terms	*Independent Variable*
Unused System	*Independent Variable*
Adoption of BNPL	*Independent Variable*
BNPL WOM	*Independent Variable*

Table 1: Description of Dataset

5. DATA ANALYSIS

This section explores the primary data, which is the result of the survey launched through the three main sources, among SMEs. The main idea as the basis of this chapter has been to tell a story, thus give step by step an explanation of what is going on and why the analysis is moving towards a precise direction. Finally, the structure allows readers to move their attention from the generic of the whole sample to the specificity of smaller datasets created with a precise goal.

5.1. Introduction of Dataset

Since the beginning, the survey had the objective to lower biases in the analysis, therefore trying to not exclude any type of industry. After one month, the number of answers reached from the survey is eighty-five, and even though the target of one-hundred respondents has not been achieved, the researcher has found the perfect balance in terms of which company has answered the survey.

The first aspect to look at is how the answerers are divided between the service and the manufacturing industry. As the following figure explains, there is almost a balance, with slightly more service companies taking part to the survey (see *Figure 9*):

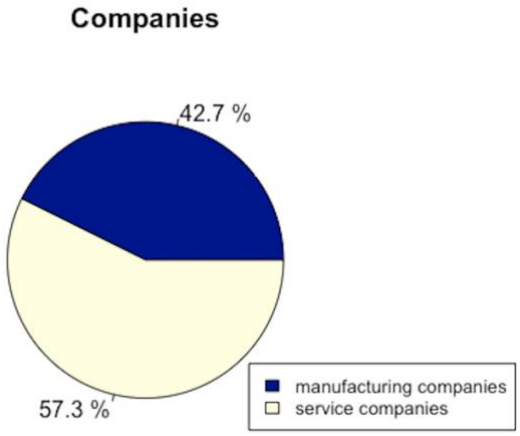

Figure 9: Manufacturing vs service companies

As shown in Figure 9, there is almost a perfect balance between companies offering services and those offering products. This is extremely relevant since some of the research questions and hypotheses consider how the Dicopay app could be useful based on the offer of companies.

The first two questions of the survey are aimed at identifying the type of company that is approaching to answer it. In particular, the first question relates to the company, thus whether it sells products or services, and from that question, Figure 9 has been deducted. The second question instead focuses on the industry in which the company works, and the outcome is the following one:

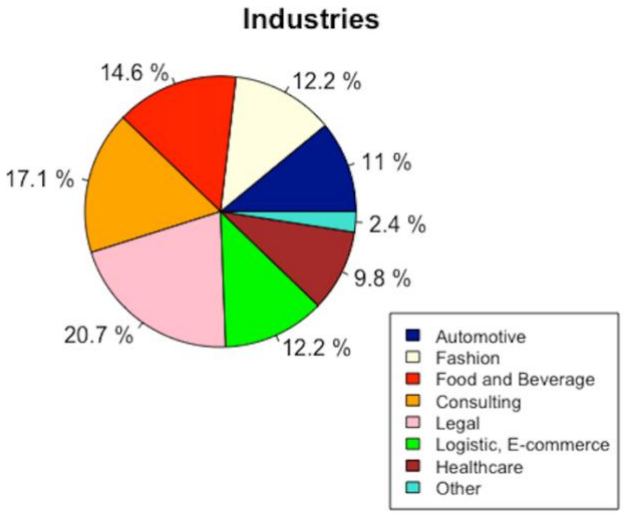

Figure 10: Industries related to companies' products/services

From the graph above, it is clear that there are some products and services that get more use of the Dicopay app. In particular, since Dicopay has helped the researcher reach the respondents, it is a normal consequence to state that there are some industries that could be more affected by Dicopay. Precisely, 20.7% is from the legal company, and that is one of the important outcomes of the graph because of Hypothesis 1 regarding lawyers and their positive usage of the solution offered by Dicopay. The 2.4% of "Other" considers instead companies that run their activities in different industries from the ones listed in Pie Chart 2's legend. Some of them are considered to be part of digital marketing, other works in the finance industry, and others in credit services. The combination of the two pie charts above is fundamental to address questions regarding whether the Dicopay app has different impacts based on the offer of companies.

As previously mentioned, the first section of the survey considers general information on companies, therefore what they sell, when they started running their business and what is their size. The latter is explained in the following Histogram, which represents, on a scale from 1 to 6, how companies that answered the survey have a different structure from one another.

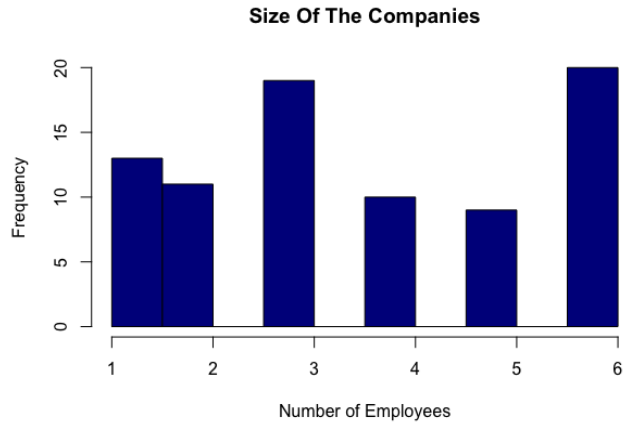

Figure 11: Number of Employees in each Company

The interpretation of the bars in the histogram goes first through the explanation of the scale used in the x-axis. Since the analysis through R (R Core Team, 2014) begins with the download of data from Qualtrics, the latter uses the Likert Scale method to shift from text to numeric values. In this case, 2 represents 20, 3 represents 30 and so on and so forth. On the other hand, frequency represents how many times that answer has been chosen, and it is easily identifiable how the most common size of the companies are the third and the last bars, which represent the size of 31-40 and more than 50, respectively.

To answer the problem previously highlighted, it is relevant to identify the number of years that companies operate in the market, as shown in Figure 12:

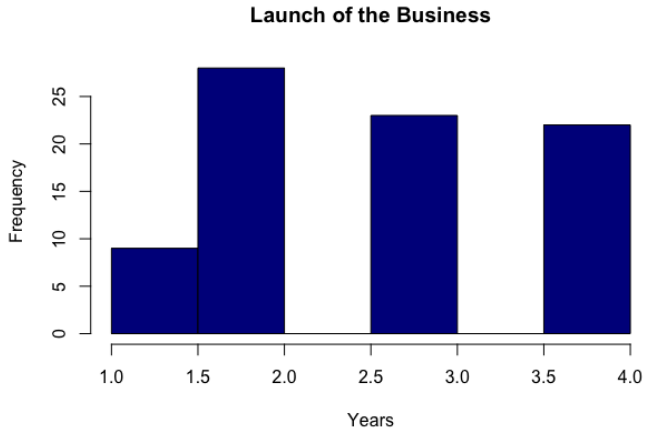

Figure 12: Newness of Companies

Figure 12 represents how antiquated is the business of the company. The researcher has considered companies with no long story, an assumption that could be explained since the whole paper focuses on SMEs. It is shown from the bars that most of the companies have at least 1 year of experience, meaning that the use of factoring solutions requires at

least knowledge of the market. In particular, even from the literature review it has been possible to state how SMEs struggle with financial changes, thus they are stuck with previous and traditional ways of financing, especially in the very first stages of the production processes. Nevertheless, the inclination to start using factoring and BNPL solutions rapidly increase when the company has launched its products or services in the market.

The next sections of the data analysis are structured as a sort of storytelling, in which the researcher explains deeply each step of the analysis in order to have enough data to answer the research questions and subsequently test the hypotheses. In particular, the analysis is from generic to specific, in which the first analysis is based on the whole dataset, and then the analysis shifts to subsets to find precise arguments to the paper's focus. The assumption is to use univariate analysis to describe data and see whether there is useful information to dig in. In other words, some variables in the univariate analysis have been used to describe the sample, its structure and how it should be used in order to go on with the assumptions. For instance, the differentiation between service and manufacturing companies, as well as the pie-chart adopted to visualize in which industries companies are working. In conclusion, univariate analysis aims at explaining the first section of the survey, thence the general information on the companies considered in the sample (see *Appendix B*) and how they react in the market by looking at the cash flow problems and other relevant situations.

Going on, both bivariate and multivariate analyses are considered to deeply analyze the illiquid assets and see whether Dicopay's app could solve it. The bivariate analysis is done by creating tables of correlations among the several variables in the different sections of the survey. Although from *Table 1* there is the description of the dataset by differentiating the dependent from the independent variables, the bivariate analysis has been statistically computed in order to see correlations and significance also among the independent variables only. The reason why the researcher has decided to do so can be explained by saying that the objective has been to find variables that affect each other. In particular, the bivariate analysis is computed to then create the multivariate, and in the latter, there are variables that are correlated with each other. Precisely, the multivariate analysis is used once the bivariate has explained correlations between variables. As can be seen from the R script (see *Appendix A*), all calculations have been done with the aim of finding variables that could explain the dependent variables. For this reason, the following sub-sections must be read by remembering that the univariate and bivariate

analyses have found the relevant data that must be considered in the linear regressions in order to address the research questions and further test the hypotheses.

5.2. Univariate Analysis

The survey has several variables that could be considered relevant in order to come up with an answer to the cash flow problem. First and foremost, the analysis must start by looking at how important is the cash flow for companies, and it is shown how it is considered to be extremely important for all SMEs, as explained in the following table:

Min	1st Qu.	Median	Mean	3rd Qu.	Max.
2.0	4.0	5.0	4.378	5.0	5.0

Table 2: Summary of Cash Flow

From *Table 2* it is fundamental to look at the mean, which is 4.378, thence extremely high since the Likert Scale goes from 1 to 5. Another aspect is the minimum value, which is equal to 2 even though respondents had the possibility to choose 1. In other words, every company considers cash flow management to be of slight importance, at least. Another useful explanation of this statement is given by the density and how it is spread among plausible results, such that:

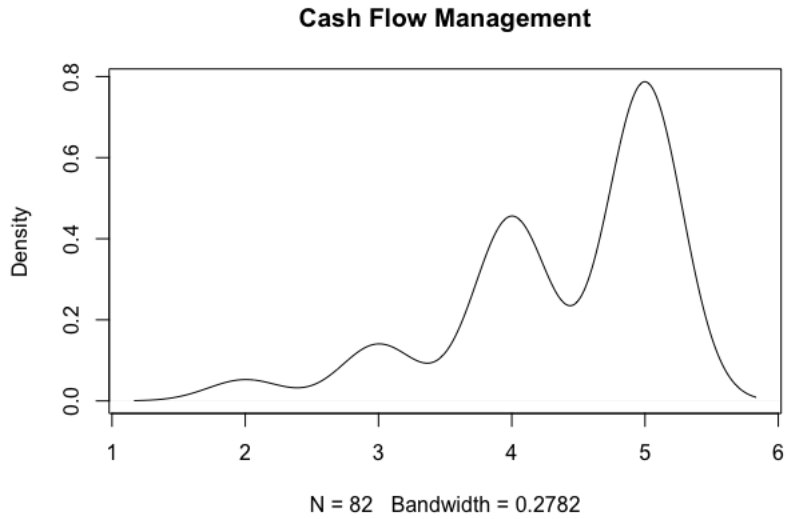

Figure 13: Importance of Cash Flow

The skewness to the left explains how there are much more values over the mean than the ones below it. Precisely, 4 and 5 are the most common solutions, with 5 being the highest

above them. The negative skewness shows how low values are not the most common ones, which is clear since, for instance, there is a density equal to 0.0 for 1, while the density starts to increase from 3 upwards. The variable "Cash Flow" can be considered as a starting point of the entire analysis, since the main objective is to show how Dicopay's app could solve Cash Flow problems. For this reason, all the assumptions for the data analysis consider the Cash Flow as the basis.

The second aspect that requires a clear univariate analysis is the one that considers the possibility of "chasing" someone because of lateness in payments. Nevertheless, before having a look at it, it is relevant to see the number of invoices that companies use on a monthly basis, as shown in *Table 3*:

Min	1st Qu.	Median	Mean	3rd Qu.	Max.
30.0	207.5	400.0	716.2	687.5	15000

Table 3: Summary of the number of monthly invoices

In this case, the dispersion is extremely high, and it is a consequence of business differences. In particular, some companies could have a small number of invoices on a monthly basis, but these invoices are of a large amount of money, while others could use invoices for all sellings, even for the ones that are not so expensive for consumers. For this reason, the researcher has decided to include the number of invoices in the analysis in order to show that each company uses this payment solution in a different way. The same conclusion is given by the number of monthly consumers, which goes from 3 to 1000, with 281.4 being the mean. Even in this case, there is no clear way to expect which would be the number of consumers that get invoiced by companies, thus having this high dispersion makes all upcoming analyses more generalizable.

The latter is fundamental when trying to understand the possible impact of a BNPL solution like the one of Dicopay. For this reason, the survey asks respondents to state whether or not they have ever had to chase consumers to get revenues back, the results are shown in *Table 4*:

Min	1st Qu.	Median	Mean	3rd Qu.	Max.
1.00	1.00	4.00	3.463	5.00	6.00

Table 4: Summary of companies chasing consumers

In this case, the mean is still considered to be high, since it is equal to 3.463 on a scale from 1 to 5, but it should be seen also how some companies have never had problems when it comes to receiving money from consumers. Chasing someone happens when consumers are unreliable and therefore they wait time before paying back the producers. When looking at the invoices, lateness in payments means not being able to repay the producers at the expiry date and thence being insolvent. For clarity purposes, the analysis that concerns the density is explained in Figure 14:

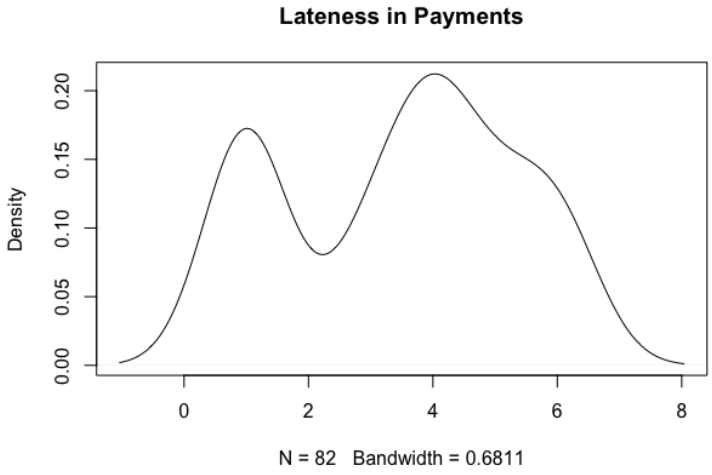

Figure 14: Lateness in Payments

The skewness describes how most of the respondents have had interactions with insolvent consumers at least once. In particular, although there are organizations that have never had troubles in this sense, most of them must deal with uncollected revenues, which represent illiquid assets since they have already paid costs related to those. In other words, the obvious consequence of Lateness in Payments is that there are problems with the cash flow, as shown in *Figure 15*:

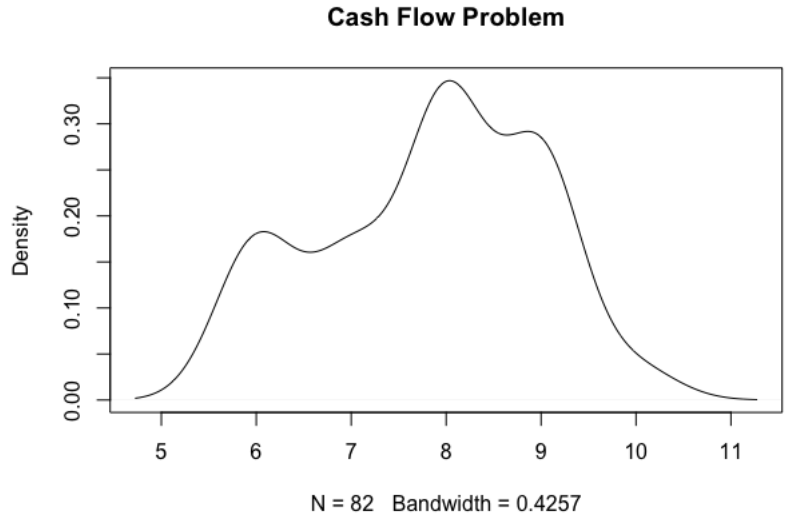

Figure 15: Cash Flow Problem

In this case, the Likert scale goes from 6 to 10, with 10 being the highest, but the conclusions that could be addressed are the same as the ones in the previous graphs: there is a negative skewness. The right-skewed distribution given by the left tail is longer while still, the density is higher on the right side. Therefore, the mean is high and more density is concentrated in higher values than lower ones. The latter could be a normal explanation of how lateness in payments represents an illiquid asset for companies, who then could face cash flow problems.

Although this correlation is obvious, the researcher has found it interesting to show how strong this relationship is, by computing a bivariate analysis between the two variables, with the outcome being significant ($r = 0.725$, $p < 0.001$). A correlation equal to almost 73% is extremely high, thus it suggests that these two variables are extremely correlated and by lowering the lateness in payments, organizations would suffer less any cash flow problem. For this reason, the assumption for the following sections is to see whether the BNPL solution offered by Dicopay could solve lateness, having as a result more liquidity for Dicopay's users.

Although the univariate analysis is used further on to introduce specific data, the correlation explained above is the bridge between the univariate and the bivariate analysis. In other words, this section has been focused on introducing the first variables regarding cash flow and lateness in payments, while in the next sections, there will be information about other variables, for instance, the lower amount of illiquidity once BNPL solution is used. The following sections describe readers each step that the

researcher has done to end up to the conclusions, and the first step has been to move from univariate to bivariate analysis.

5.3. Bivariate Analysis

The first aspect that recalled the researcher's attention has been the correlation shown in the previous section between cash flow problems and lateness in payments. For this reason, the plan of action regarding the bivariate analysis is to start from there to further specify the context and see how other variables affect the previous relationship. Indeed, as previously introduced, the bivariate and multivariate analyses are composed like waterfalls, therefore going deeply into the analysis step by step.

It is of high importance to start from the correlation explained above to then see where the researcher has pointed his attention. First and foremost, A linear regression analysis has been computed using the Cash flow problems – namely the score expressing the extent to which firms face liquidity issues - as a dependent variable, and Chasing – namely the score expressing the extent to which firms have to chase customers to get payments - as a independent variable:

```
Call:
lm(formula = Cfproblem ~ Chasingsomeone, data = mydata)

Residuals:
     Min       1Q   Median       3Q      Max
-2.07234 -0.71333  0.02165  0.38066  1.92766

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)     6.26033    0.18824  33.257  < 2e-16 ***
Chasingsomeone  0.45300    0.04814   9.411 1.37e-14 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.7915 on 80 degrees of freedom
Multiple R-squared:  0.5254,    Adjusted R-squared:  0.5195
F-statistic: 88.56 on 1 and 80 DF,  p-value: 1.372e-14
```

Table 5: Cash Flow Problem and Lateness in Payments

From *Table 5* the following are the relevant statements:

- The effect of chasing over cash flow problems appeared to be statistically significant ($\beta = 0.453$, $P < 0.001$). The latter assesses the positive influence that the independent variable has on the dependent one. Hence, said the results show that the more consumers delay the payment, the more companies face cash flow problems.

- Multiple and Adjusted R-squared are almost the same, and the one that should be examined is the first one since it is a bivariate analysis. It highlights a high value of 0.5254, hence showing 53% of shared variance.

The results described above are depicted in *Figure 16*:

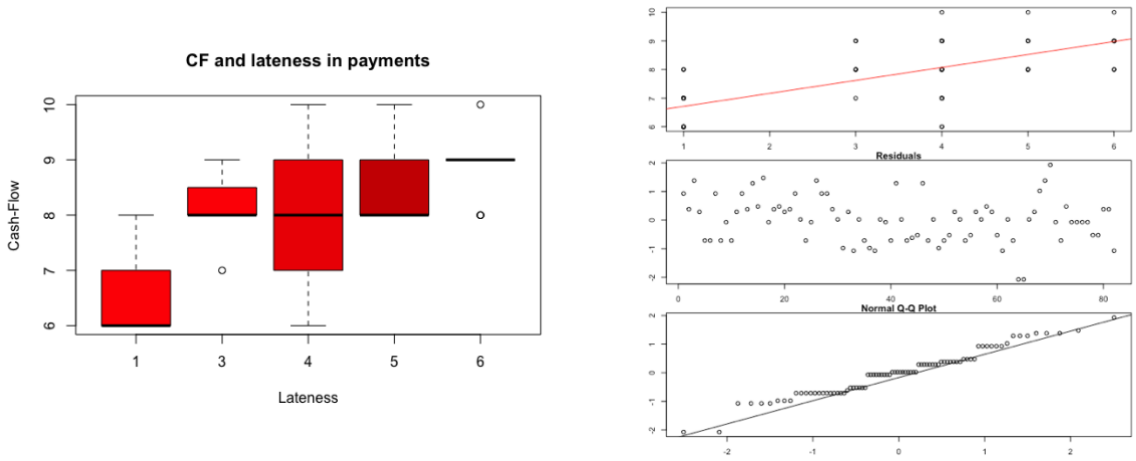

Figure 16: Cash Flow Problem and Lateness in Payments

From Figure 16, some statements could be addressed by looking at the quantiles and the distribution. Perhaps, the two boxes that better represent the correlation between the two variables are the first and the last one. Precisely, the first box has the median at the intersection between 1 and 6, thus the minimum, In particular, the position of the boxes highlights how, by increasing the lateness in payments, there will be always an increase in the cash flow problem.

Differently from the boxplot, the following graphs represent the dispersion of values among them, and the lines that the readers could see in two of them are the intercepts. Having values close to the intercepts means having no biases in the correlation. As shown, especially in the third graph, values are extremely close to the intercept, meaning that there are no biases in the analysis even though there are a series of residual values in the second chart.

The main takeaway from the correlation explained above is that those two variables have been considered the starting point of the bivariate analysis, which continues by seeing whether there are correlations between other variables. For clarity purposes, *Table 6* shows the results of the correlations computed across all the variables of interest. To do so, the researcher has created a subset computing the table under consideration, and then functions on R (R Core Team, 2014) have been exploited. In the table, values range between -1 and 1, and colors differ based on the magnitude of the correlation. In

particular, blue is used to describe positive correlations; values with yellow colors represent low/null correlation, while red numbers represent a negative correlation between the variables.

Table 6: First Correlation Matrix

Although some of them can't be considered significant, others have instead interesting values in the researcher's eyes. By disregarding the focus on the correlation between cash flow problems and lateness in payments ($\beta = 0.453$, $p < 0.001$), both of those variables slightly depend on the number of employees of organizations. Specifically, in both cases there are relevant values ($\beta = -0.35$, $p = 0.01$), meaning that the higher the number of employees, the lower the cash flow problem and the lateness in payments of consumers.

A second conclusion is how the variable "start" positively influences the number of employees. Therefore, as it is easily understandable, the number of workers in a company depends on when the company launched its business. Finally, a negative correlation ($\beta = -0.31$, $p < 0.05$) with regard to cash flow and invoices is what the researcher did not expect. In particular, he had the assumption that the more invoices companies send, the higher the cash flow, while from the sample the conclusion is the opposite. The latter could be explained by saying that invoices should be used as a source of revenue by companies anytime revenues are high, and not anytime they send something to consumers.

Roughly speaking, the mentioned correlations have called the researcher's attention, and, for clarity purposes, he has decided to include charts that better explain those interactions. The following three boxplots visualize the correlations explained before (Figure 17):

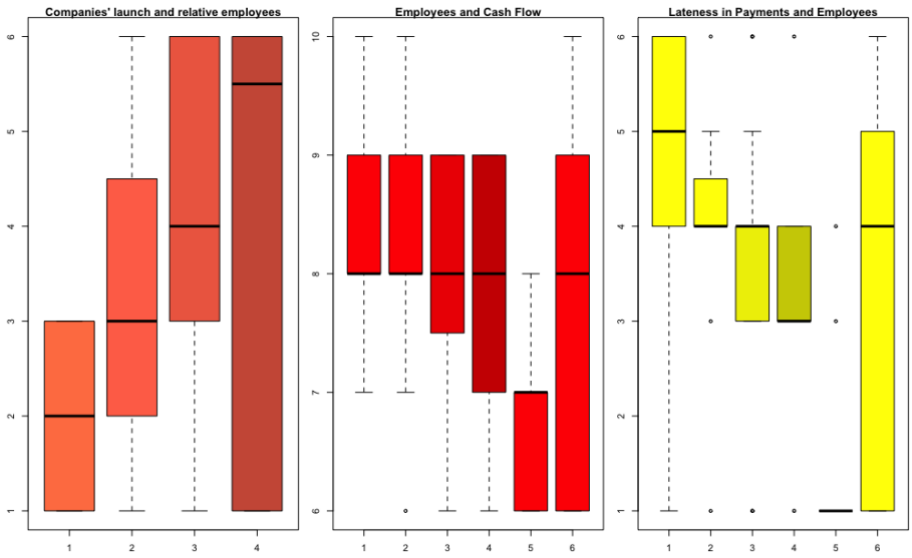

Figure 17: Representation of relevant correlations

In Figure 17, one variable is always present, and it is the number of employees, on the y-axis. In particular, as previously introduced the number of workers in an organization is based on its performance. The latter is the outcome of the combination of a series of variables and business circumstances. For this reason, starting from the first chart (coral), showing the increase in the number of employees as a function of the "age" of the company; however, as indicated by the last box, when the company has been launched more than 5 years ago the variability in terms of number of employees is much larger. This is due to the company's differences. In particular, the researcher has the assumption that if the analysis would have considered only the manufacturing companies, then these would have had a different representation and the box would have been smaller. This assumption has been analyzed, and the outcome is described in Figure 18:

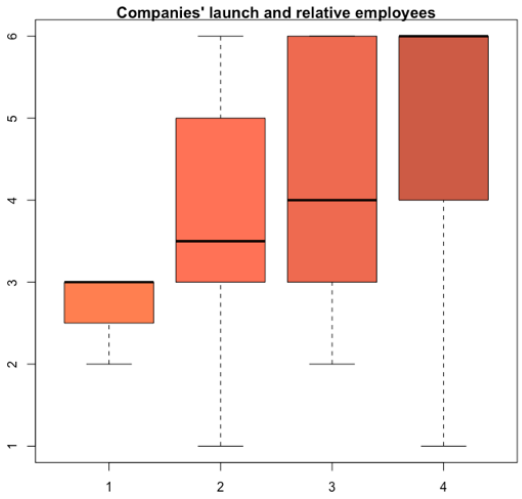

Figure 18: Business Launch and Employees in Manufacturing Industry

Although the correlation has not changed much, remaining at a value ($\beta = 0.32$, $p < 0.05$), the researcher's assumption has been confirmed even though the sample analyzed is smaller than the previous one. Indeed, the longer manufacturing companies have entered into the market, the higher the number of employees, with most of the concentration placed in the highest values. In other words, service companies require much less organization in some cases, likely lawyers or very small consulting firms than the ones working for instance in the automotive industry providing products. For this reason, it is much easier to find old service companies with few people as compared to old manufacturing ones with few workers.

Moving onto the second boxplot of the previous representation, it represents the correlation between cash flow management and its importance with the number of employees. In this case, it is difficult to explain a peculiar pattern, since from the sample the researcher has understood how the importance of cash flow is not bounded to any kind of external characteristic. Precisely, all profit organizations aim at increasing their revenues and being financially stable over time, meaning that the management of cash flow is of extreme importance for all companies. Therefore, how many workers are in a company is the consequence of being able to successfully manage the cash flow.

For what concerns panel three of *Figure 17*, shows the relationship between chasing consumers for receiving money back from their operations and the number of employees. In this case, it could be seen how consumers' behavior is not at all related to the size of the company. In other words, organizations could face lateness in payments either if they are a single-man business or a multi-national one. The introduction of Dicopay, based on this assumption, would suggest positive outcomes for all companies by setting to zero the possibility to have unsolvable customers. This statement suggests also that if the sample has shown a positive inclination towards the move from basic factoring systems to the BNPL solution offered by Dicopay, then everyone would benefit from it and there will be lower troubles regarding the cash flow.

The dataset has been created to have multiple variables on the analysis. All the previous analyses have been focused on the first part of the dataset, and by conclusions addressed before, some assumptions have called the researcher's attention. Therefore, the following analysis is aimed at seeing whether some of the previous correlations could be used in the upcoming correlation table, which considers other variables included in the dataset:

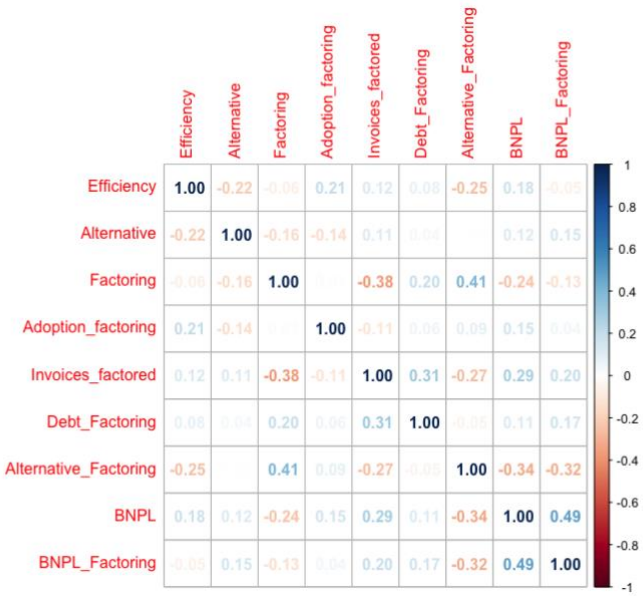

Table 7: Second Correlation Matrix

All the assumptions regarding values and colors for the first correlation matrix are maintained when analyzing *Table 7*. First and foremost, the highest correlation is the BNPL with the BNPL_Factoring, meaning that companies with knowledge of buy-now-pay-later solutions are well inclined to introduce it as a source of payment in their business model. Nevertheless, from the whole dataset, it is seen that some companies do not know well the meaning of BNPL and its opportunities. For this reason, in order to make Dicopay a disruptor and create uncontested market space, it should make consumers able to know more about the offer. Going on, another valuable correlation ($r = 0.41$, $p < 0.001$) between the variables "Alternative_Factoring" and "Factoring". Although those might seem similar, they are not still really connected to one another. Factoring means whether companies give factors the duty to deal with consumers. Precisely, those companies that use invoices but send them to factors such that they have no control over those. On the other hand, "Alternative_Factoring" means the possibility of companies adopting other solutions to the ones that they are already adopting. The aforementioned correlation ($r = 0.41$, $p < 0.001$) means that organizations are always seeking the maximum, and they are able to shift business models and/or payment systems if the new ones allow better outcomes. This is extremely in relationship with the cash flow problem and lateness in payments discussed above. In that part, the researcher has assumed that businesses would have to stop chasing consumers when they would have introduced the Dicopay app, having the consequence of reducing cash flow problems. In this case, indeed, the correlation between factoring and its possible alternatives means that companies would stop searching for better solutions if the Dicopay app would reduce illiquidity problems. With that being said, there is a strong connection even with the former correlation ($r =$

0.49, $p < 0.001$). Theoretically, if the BNPL would solve liquidity problems, then Dicopay should do its best to get people the minimum information to understand the meaning of its business, such that they would stop searching for a better solution while solving liquidity problems meanwhile.

By looking instead at the other correlations, two light up to be of relevance, one positive and one negative. The former is between "Debt_Factoring" and "Invoices_Factored", which is pretty obvious since the higher the invoices, the higher the debt given to factors. Nevertheless, a correlation of ($r = 0.31$, $p < 0.05$) suggests that not all invoices have relative non-recourse factoring, thus some of them are directly controlled by the organization. The second correlation is instead negative ($r = -0.38$, $p < 0.001$) between "Invoices_Factored" and "Factoring". It is strange at first sight since factoring is useful exactly for the purpose of giving factors invoices. For this reason, the researcher thoughts that having a boxplot would solve the understanding of this interaction, such that:

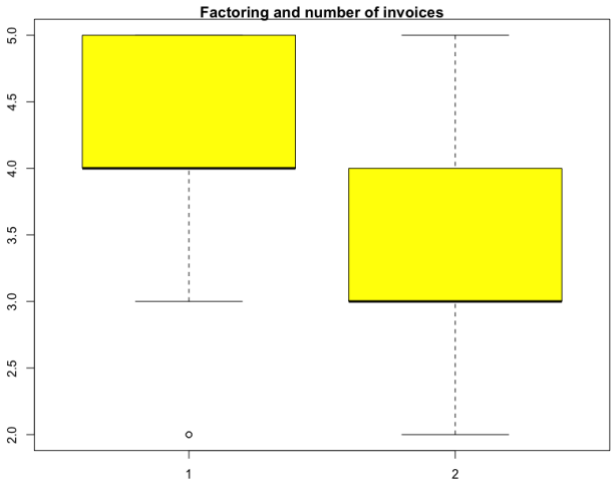

Figure 19: Factoring and invoices

What readers should have in mind is that the question regarding factoring is about the daily use of it, and the lower the number, the higher companies' propensity to adopt factoring. In other words, the value of 1 on the x-axis represents when companies get the most out of the factoring, while the value of 2 means that companies can use factoring over other solutions. Therefore, high numbers of factored invoices at the value of 1 are what was expected by the researcher, thence companies that stick to factoring solutions when it comes to high numbers of invoices.

It could be useful to deeply analyze the correlation between "Invoices_Factored" and "BNPL" ($r = 0.29$, $p < 0.01$), therefore the possibility to adopt BNPL solutions. In this case, the correlation could be considered as significant and it shows the positive

relationship between the number of invoices factored by companies and their inclination to move towards a more efficient way, like the one offered by Dicopay. This phenomenon is what Dicopay must develop to successfully penetrate the market.

One possible representation could be the boxplot as previously done for all other correlations. Nevertheless, through R (R Core Team, 2014), there have not been useful information from most of the boxplots regarding highlighted correlations except for the following one:

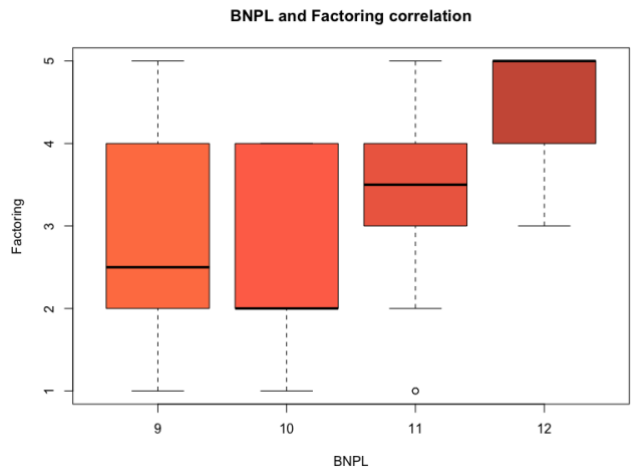

Figure 20: BNPL and Factoring

The boxplot above shows how high values of one variable are always associated with high values of the other one. Even in this case, there is a strong explanation of the path from the first and the last boxes. Specifically, the first one is the one with the highest diversity of combinations, since the minimum and the maximum are actually the lowest and the highest possible outcomes, as shown by the upper and lower tails. At the same time, the box is large and it explains that there is no clear path at low adoptions of BNPL solutions. The situation is completely different when it comes to the last box, which is the one with the highest value of BNPL, and at that value, there are always high values of factoring adoption. With that being said, it is possible to assume that companies are more inclined to embrace BNPL solutions in their revenue stream anytime they are hard users of factoring systems.

As a final bivariate analysis, since there have been some useful insights from the previous two tables, the researcher has moved into the last part of the dataset to see whether there are more correlations regarding the BNPL solution offered by Dicopay. On the grounds of this, the following table is what this analysis is based on:

Table 8: Third Correlation Matrix

From *Table 8*, it is clear how the situation is much more different from the previous two tables, since here most of the variables are highly correlated with one another. In particular, there is an almost perfect correlation between the possibility to use BNPL and the one to create Word of Mouth. Being a platform means being directed towards the creation of positive network effects, which could be the outcome of companies talking with others. The correlation ($r = 0.81$, $p < 0.001$) shows indeed that the objective of Dicopay should be to target the perfect types of industries and companies in order to create positive perceptions of the product. The table then considers some negative thoughts about moving from factoring solutions to BNPL ones, and most of them are highly correlated. For instance, the possibility to be a victim of fraud and additional administrative taxes has a relevant correlation ($r = 0.4$, $p < 0.001$), meaning that Dicopay should ensure consumers that at least one of them would not happen to then positively influence the other one. A possible way of doing so is to demonstrate that there will be fewer illiquid assets for all companies that decide to use this solution since the correlation ($r = -0.38$, $p < 0.001$) between this variable and possible frauds has to be positively exploited. One consequence of having lower illiquid assets is the companies' possibility to reinvest the money, which is correlated with the fee. In this case, having expenses of 2.9% from Dicopay's perspective is extremely advantageous since it is lower than 3%

and thus lower than competitors. In other words, possible negative outcomes from using the app have to be overcome by positive ones.

At this point, once the whole dataset has been exploited through bivariate analyses, the researcher has decided to focus on the hypotheses and see whether these are tested. Before introducing the results, it is important to state that the determination of whether hypotheses are tested is part of the next section, therefore the discussion part. A good way of doing the analysis is to create another correlation table and see if something changes. The subset has been created by considering only the service companies and the variables that have resulted relevant from all analyses done before, and the outcome is shown in *Table 9*.

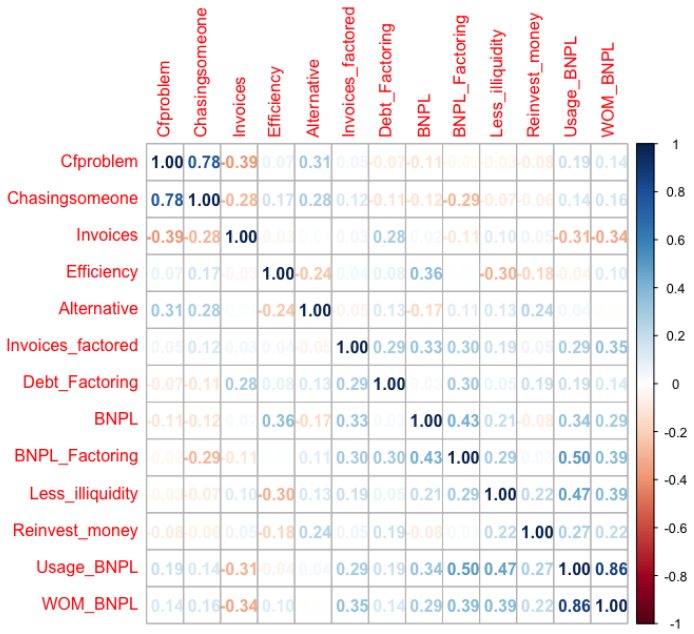

Table 9: Fourth Correlation Matrix

As can be seen from the results, the overall correlation has increased for almost all combinations. For instance, BNPL utilization and Word of Mouth moved from the previous 0.81 to the actual ($r = 0.86$, $p < 0.001$), meaning that it is true that service companies could be more affected and inclined to adopt BNPL solutions. The latter statement is further confirmed by how the correlation between cash flow problems and lateness in payments moved upward, and the actual ($r = 0.78$, $p < 0.001$) described a strong causal correlation between cash flow issues with consumers delaying their payments.

From *Table 9*, the researcher has found exactly what he needed to answer the research questions and further test hypotheses. Precisely, the correlation between BNPL adoption

and the less illiquidity of assets ($r = 0.47$, $p < 0.001$). The theoretical explanation is found through the literature review and it is combined with the primary finding in the discussion. Here, it is important to state that the correlation is high and it shows that companies would have fewer problems with cash flow in case they would exploit Dicopay's solution. The latter is so relevant that it needs to have a visual representation that better describes the relationship, hence:

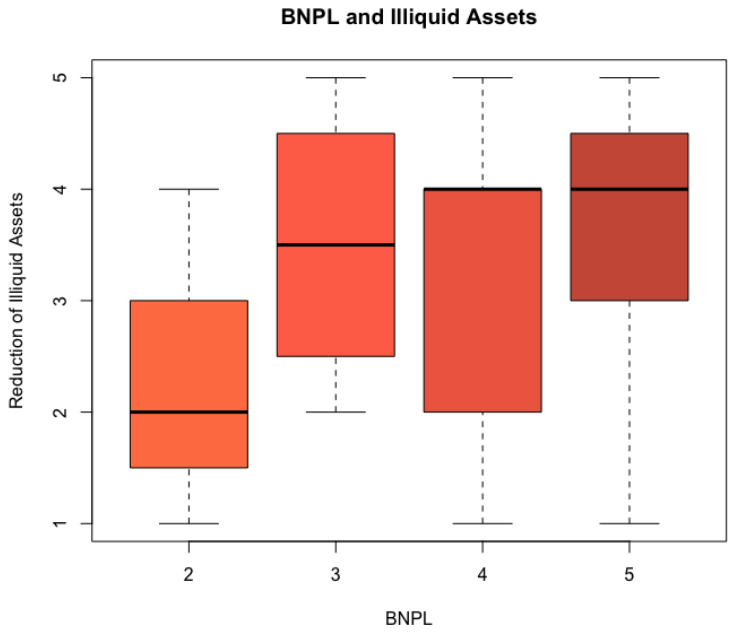

Figure 21: BNPL and Reduction of Illiquid Assets

Although at first impression there is no clear path between the two variables, contrarily as it was for the previous boxplots, by digging into the meanings of the graph some outcomes are identifiable. First and foremost, lots of combinations are possible, as shown by the long low tail of the last box. In other words, companies feel that BNPL could be the starting point for the reduction of illiquidity, even though the correlation demonstrates the opposite. In this case, the main objective should be to have quantitative data to give companies so that they would be able to understand the potentiality of this opportunity. One thing that is instead easily understandable from *Figure 21* is how the median increases. The analysis could be even described by the other way around, therefore the higher the number of illiquid assets that companies have, the more they would be inclined to adopt BNPL solutions. The latter is actually really positive for Dicopay due to the high number of organizations facing those types of problems.

From *Table 9*, efficiency starts to become relevant due to its correlation with BNPL solutions and the reduction of illiquid assets. The simplicity of Dicopay's app should be

exploited by the company such that its users would know exactly that it is more efficient for them to adopt the app. A correlation with the BNPL ($r = 0.36$, $p = 0.01$) means that there is a positive relationship between the two variables, such that 36% of the BNPL's outcome is represented by its efficiency in the payment system. On the other hand, a negative correlation with illiquidity ($r = -0.30$, $p = 0.04$) should be seen as negative, even though the p-value is high. In other words, possible users of Dicopay think that there would be either an increase in efficiency or a reduction in illiquidity. Nonetheless, in the researcher's eyes, it is assumed that the reduction of illiquid assets is the outcome of the higher efficiency of Dicopay's product, therefore it should be better analyzed this correlation.

Last but not least, it is relevant the correlation between "Cfproblem" and "Alternative", with a positive correlation ($r = 0.30$, $p = 0.03$). The latter shows that when companies struggle with their cash flow streams, then they are aware their current technique is not as successful as they thought initially, thus they are looking for alternatives and better solutions. Having companies inclined to shift from their traditional systems to the BNPl offered by Dicopay is extremely advantageous and it should be taken as the how-to in order to launch the product.

Roughly speaking, the final analysis shows that service companies are generally more interested in Dicopay's app than manufacturing ones. One thing that should be seen at this point is whether results change depending on the type of company. By looking at the hypotheses, the following table is the last one and it describes how legal companies are impacted by BNPL solutions:

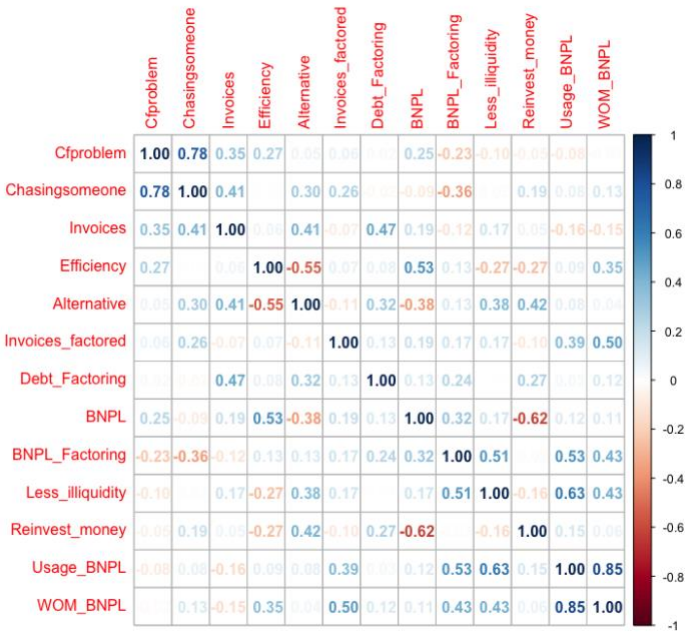

Table 10: Fifth Correlation Matrix

Some statements could be easily addressed in *Table 10*. First and foremost, some relevant correlations have not changed from *Table 9*, meaning that companies that struggle with their cash flow might face lateness in payments with the same correlation, and the Word of Mouth is still the consequence of BNPL utilization. The highest change from the situation of service companies is when it comes to illiquid assets, which are highly correlated with the use of BNPL. The correlation ($r = 0.63$, $p < 0.001$) is so high that allows the researcher to state that Dicopay's app would solve the problem of illiquidity that legal companies may face. Since it is the basis of this study, the researcher has decided to go into detail in this analysis by including a deeper investigation, thus:

```
Call:
lm(formula = Usage_BNPL ~ Less_illiquidity, data = mydata_subset_legal)

Residuals:
     Min       1Q   Median       3Q      Max
-0.76071 -0.53929  0.07143  0.23929  0.85000

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)       2.9821     0.4857   6.140 1.89e-05 ***
Less_illiquidity  0.3893     0.1230   3.164  0.00642 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4993 on 15 degrees of freedom
Multiple R-squared:  0.4003,    Adjusted R-squared:  0.3603
F-statistic: 10.01 on 1 and 15 DF,  p-value: 0.006416
```

Table 11: Utilization of BNPL and Reduction of Illiquid Assets

A similar analysis is the one conducted previously between cash flow problems and lateness in payments. In particular, the analysis shows a statistically significant effect of

the lateness of payments on cashflow problems ($\beta = 0.390$, $p < 0.01$), hence suggesting that thus the higher the usage of BNPL, the higher the reduction of illiquidity. Going on, being a bivariate analysis means that the Multiple R-squared shows that 40% of one variable is represented by the other one, and vice versa. Significance codes are the ones that show whether the analysis is significant or not, and the lower the value, the better. The presence of two asterisks means that the confidence level is at 99%, thus there is less than a 1% of probability that the relationship is purely casual. Therefore, a strong causal relationship is present between these two variables. Finally, also in this case then Standard errors and T-value have opposite directions, which shows almost the same significance code, thus the low probability of uncertainty and casualty.

Going on with the correlations described in *Table 10*, it is important to identify some other variables in order to then conduct a multivariate analysis. Another increase from the previous situation is how the higher the number of invoices, the higher the debt given to factoring, meaning that lawyers are inclined to exploit more factoring in their business. Finally, the researcher has pointed his attention to the value at the intersection between "Alternative" and "Efficiency" ($r = -0.55$, $p = 0.02$). The latter is again what Dicopay aimed at since it shows that if the current system is not considered efficient, people are looking for other solutions. In most cases, and as the presence of cash flow problems shows, it could be stated that the level of efficiency is not high, thus there is enough space for Dicopay to penetrate the market and create an uncontested market space.

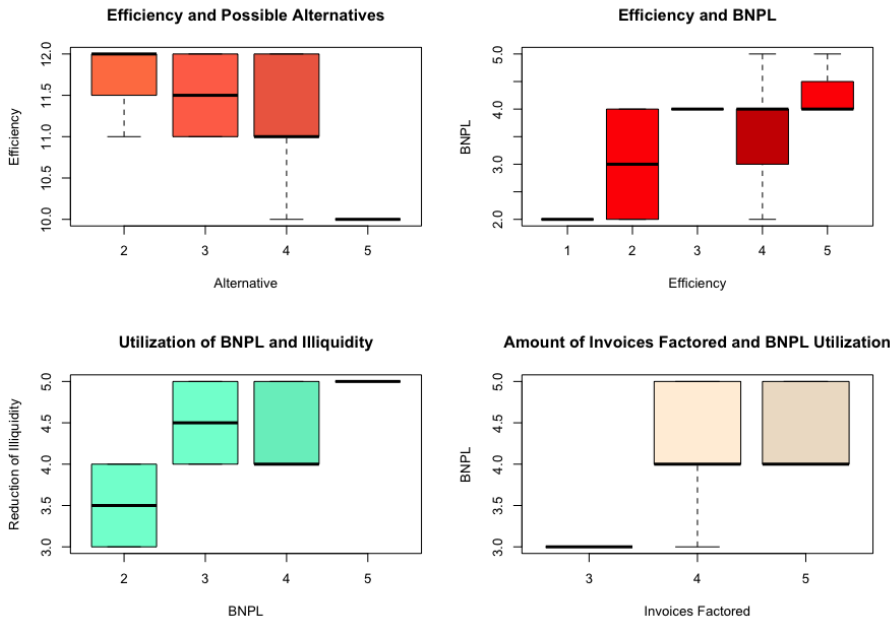

Figure 22: Representation of Interesting Correlations

From *Figure 22* there is a clear explanation of all correlations between variables. In particular, there should be seen how in almost all of the boxes, there are no upper and/or lower tails, meaning that all combinations are concentrated around the mean. This is of extreme relevance due to what could be the possible outcome for Dicopay. The absence of tails describes the possibility to have expected outcomes for the company, without having possible outsiders choosing completely different paths.

Roughly speaking, a series of variables are of relevance when looking at service companies and, more deeply, at the legal industry. The following analysis considers those meaningful data in order to conduct linear regressions by considering one dependent variable and a series of independent ones.

5.4. Multivariate Analysis

As previously mentioned, this analysis must consider a dependent variable and see whether it is affected simultaneously by multiple data. Due to the higher relevance of Dicopay's app on service companies, the used dataset would consider only those types of organizations, with the possibility of statistically generalizing results also for manufacturing companies. First of all, it should be identified a dependent variable, and the researcher has thought that perhaps it is better to plan two different linear regressions, by considering two different variables as the *X*: the cash flow problem and the reduction of illiquid assets. Those two aspects are indeed what the whole paper is about, therefore it is reasonable to use both of them.

Starting from the "cash flow problem" data, the variables considered are the ones that showed a minimum correlation with it. Obviously, the lateness in payment is part of the analysis, and then other independent variables are "Invoices", "Alternative" and "BNPL_Factoring". The following table describes the outcome:

```
Call:
lm(formula = sqrt(mydata_subset_service$Cfproblem) ~ mydata_subset_service$Chasingsomeone +
    mydata_subset_service$Invoices + mydata_subset_service$Alternative +
    mydata_subset_service$BNPL_Factoring)

Residuals:
     Min       1Q   Median       3Q      Max
-0.31212 -0.06722  0.00804  0.06507  0.35445

Coefficients:
                                 Estimate Std. Error t value Pr(>|t|)
(Intercept)                     1.797e+00  3.505e-01   5.127 7.03e-06 ***
mydata_subset_service$Chasingsomeone  9.064e-02  1.214e-02   7.468 3.14e-09 ***
mydata_subset_service$Invoices       -1.036e-04  5.999e-05  -1.727   0.0914 .
mydata_subset_service$Alternative     2.916e-02  2.930e-02   0.995   0.3252
mydata_subset_service$BNPL_Factoring  3.586e-02  2.077e-02   1.727   0.0916 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.1245 on 42 degrees of freedom
Multiple R-squared:  0.6862,    Adjusted R-squared:  0.6563
F-statistic: 22.96 on 4 and 42 DF,  p-value: 4.153e-10
```

Table 12: First Linear Regression

As previously done, the researcher has decided to use a bullet point to highlight all the outcomes from *Table 12*. Hence:

- Pr(>ltl) presents a different situation from the ones above since it shows two significant values and two high values suggesting a no influence of those variables.
- Being a linear regression means that readers should pay attention to the Adjusted R-Squared (r = 0.6563). It gives a clear understanding of how, although some of the contemplated inputs are not related to the lateness in payments, the chosen ones are still the biggest part of the "Cfproblem" combination.
- The low value of the overall p-value (P < 0.001) gives then the final description of how variables are interrelated. In other words, The cash flow problem is the consequence of changes in the independent variables considered.

By looking then at the second linear regression, the reduction of illiquid assets is considered as the dependent variable. Therefore, from the fourth correlation matrix the relevant data have been chosen, and the outcome is the following one:

```
Call:
lm(formula = sqrt(mydata_subset_service$Less_illiquidity) ~ mydata_subset_service$Usage_BNPL +
    mydata_subset_service$WOM_BNPL + mydata_subset_service$Efficiency)

Residuals:
     Min       1Q   Median       3Q      Max
-0.49532 -0.07576  0.04869  0.16031  0.46738

Coefficients:
                                Estimate Std. Error t value Pr(>|t|)
(Intercept)                      1.64939    0.24773   6.658 4.03e-08 ***
mydata_subset_service$Usage_BNPL  0.12373    0.08874   1.394   0.1704
mydata_subset_service$WOM_BNPL    0.02980    0.07753   0.384   0.7026
mydata_subset_service$Efficiency -0.08533    0.04046  -2.109   0.0408 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2095 on 43 degrees of freedom
Multiple R-squared:  0.2896,    Adjusted R-squared:   0.24
F-statistic: 5.843 on 3 and 43 DF,  p-value: 0.001935
```

Table 13: Second Linear Regression

Due to the correlation in the previous section, the first assumption would have been to have different values from the linear regression. In particular, although some values have statistical significance, others have low values and therefore the conclusions are different from the ones regarding the first linear regression.

First of all, the significance codes explain how the probability that the combination of values is due to chance is high. The latter is further confirmed by the Pr(>ltl), which can't be considered statistically significant because all elements are high, except for the value with the efficiency variable (p = 0.04). Going on, what is better than the Pr is the standard errors column, where values are low. Nevertheless, by combining the latter with the t-

value, it appears that sometimes independent variables can affect the dependent one by chance, therefore there is a probability to have a non-causal relationship. For what concerns the adjusted R-squared, the value is not high but still significant. In other words, the value (r = 0.24) means that the joint impact of the independent variables on the reduction of illiquid assets is lower than the individual impact that all those data have on it. For example, the adoption of the BNPL solution offered by Dicopay could have a higher reduction of illiquidity compared to when users speak about it to others, therefore when the Word of Mouth is present.

In conclusion, the two linear regressions have been done to show whether Dicopay could jointly think at different values to tackle the market and penetrate it successfully. At this point in the analysis, what should be identified is the combination of the literature review with the results found in the analysis. Hence, there must be a combination of what previous studies have explained with the results shown by the researcher, and this is what the next section is all about.

6. DISCUSSION AND CONCLUSIONS

This section aims to explain the findings of this thesis by answering the research questions and simultaneously testing the hypotheses. The discussion is done in order to see whether the results differ from the background explained in the literature review. The conclusions consider the main results of the data analysis, trying to qualitatively assess the numbers obtained through the statistical analysis. Finally, managerial implications and future studies are suggestions on how the results of this study can be used and/or improved by someone else.

6.1. Discussion of the Results

The data analysis has been conducted by going from generic to specific and by trying to explain that Dicopay could be extremely impactful in the market. A series of different results have come up and they show that the offered solution could determine a beneficial outcome for all adopters of this new platform. In this section, the goal is to demonstrate then that there is a correlation between previous studies and the primary data analyzed. The latter is done in order to answer the research questions and see whether hypotheses are tested.

The first thing to do then is to combine outcomes with the studies and leave the answers to the research questions at the end of this section. For this reason, the literature review is followed precisely by trying to identify the frameworks that would further confirm the outcomes of this study. The initial takeout should be to see whether the outcome of this study is effectively reliable. Bahrami et al. (2020) have proven that statistical analysis regarding factoring could help companies and people to lower problems in financing and/or payment processes. In other words, Dicopay should look at the results and see how to target market segments to lower the problem of illiquidity for companies.

For instance, Papadimitriou et al. showed in 1994 that SMEs need finances to run their business and, especially in the very first stages, they have moved from traditional lending to new forms of financing, including factoring solutions. Indeed, as the results from the survey can highlight, the sample is close to this solution, and most of the companies adopt factoring systems to send out their invoices. Nevertheless, the main problem arising when it comes to the launch of a new solution in the financial market is convincing people to

move from what they are currently adopting to the new offer, as shown by Dahlberg and Öörni (2008).

Old habits die slowly, meaning that new solutions should try to let people understand that they could be better off by shifting from the past to the future, and disruptors must be patient in waiting their time instead of trying to become successful from the beginning. The results in the previous section demonstrate that the main outcome in the factoring industry is that people are not 100% convinced by what their adoption is, thus they are actually looking for possible alternatives that would give them better financial stability. One possible suggestion that Haddad and Hornuf (2021) have given is that FinTech startups could easily tackle and successfully penetrate the market if they require fewer credit checks. Dicopay should consider the possibility to start running the market without requiring people to have a precise financial situation. The survey has shown indeed that people would not be inclined to change their payment habits if the new solution is stricter than the current adoption.

By considering the literature review with the sample chosen and the resulting analysis, one difference is given by how respondents would consider the possibility to adopt Dicopay's solution anytime they have financial problems. In particular, all studies in the literature review point out a clear situation in which a FinTech Startup could be profitable, but none of those has ever highlighted financial problems as one of the scenarios. What the survey has instead shown is that the moment that companies and/or independent contractors look for new alternatives is exactly the moment in which they have financial problems. Although the latter could be considered an obvious statement, it is extremely interesting to see how people look for alternatives, not among the solutions offered by incumbents. The idea is that, since solutions from already active players in the market have not been used before, it means that these are not profitable in companies' eyes, and that is the main reason why they would be able to move to new solutions.

Another important consideration shown by the sample is that nowadays all systems adopted are technologically advanced. In addition, respondents come from the whole of Europe, not only from Sweden, meaning that all solutions like the one of Dicopay that adopts AI in all processes could be successful not in one specific geographic area. Saetra (2021) proved indeed that the adoption of AI is what adopters aim at, and the reason is that they know exactly that its utilization could ease their entire payment and/or financing processes. Further confirmation is given by the study of Paternoster et al. (2010) in which

it is said that disruptors in the financial market are the ones who successfully offer new software or applications.

Dicopay is an app that, although some competitors offer the same solution, does not have similar characteristics because it is completely automatized. The latter is what Potapenko (2010) highlights as the main source of competitive advantage, and results have shown that people with lateness in payments usually face cash flow problems, and they are inclined to embrace BNPL solutions. In other words, Dicopay has to move towards the resolution of cash flow problems, and only by successfully targeting the right market segments the company would be able to create an uncontested market space.

The title of this study is pretty clear, and the meaning is that Dicopay aims at tackling the illiquid assets problem arose by Klapper in 2006 for the first time. Illiquid assets are, in Klapper's eyes, non-collected revenues from already paid costs in the production processes. The sample has shown a high level of correlation between the reduction of illiquid assets and the adoption of BNPL solutions, which could already address some results, for instance, the possible impact of Dicopay in the Factoring system. Klapper (2006) has shown also how in the factoring system the main warranty is not anymore composed of real estate assets, but instead, it is a combination of receivables. The sample chosen has further confirmed this new trend since most companies adopting factoring solutions consider non-recurrent assets as the main warranty for factors.

The *finance gap* highlighted by Soufani in 2012 shows again how FinTech startups must move towards a different direction from the one of traditional lending. Precisely, SMEs must have the possibility to get finances even though they do not have equity capital, and the data analysis has proven that most SMEs with financial instability are inclined to adopt Dicopay's solution. Soufani (2012) addressed also that SMEs are the ones who necessitate faster collect money from operational activities, and it could be said that the very first stage of companies' life is the one in which they require more finances. The data analysis has proven multiple times that the number of operating years is impactful in companies' financial situations, since for instance, lateness in payments happens more in the first years.

The data analysis has further suggested that Soufani (2012) was right when he said that SMEs are more inclined to adopt factoring solutions when they have more invoices launched. As the sample has shown indeed, the higher the number of invoices, the better it is for companies to adopt factoring solutions, meaning that Dicopay could be successful

for both new and already established companies. Nonetheless, a particular outcome in this sense is that organizations with high amounts of invoices are not well-matched with BNPL solutions. Hence, Dicopay should try to highlight to them that its offer is what could solve cash flow problems due to lateness in payments when sending invoices to consumers.

Another conclusion regarding the cash flow problem is the one given by Grüschow et al. (2015), suggesting that lateness in payments not only reduces the availability of cash but also creates higher working capital. The sample has answered the survey by considering this aspect, and results have shown that, although this is a consequence of lateness in payments, it is not as high as the creation of illiquid assets. Consequentially, a BNPL solution would help companies reduce both illiquid assets and working capital, with a higher outcome on the former. Peiguang (2015) suggested that Artificial Intelligence could be useful not only to create smooth payment processes but also to predict whether customers would pay late. What is clear from the data analysis is that efficiency in the production process is one of the relevant characteristics for companies, meaning that if AI would help to ensure efficiency, then people would not search for alternatives and they would stick to the adopted system. Another clarification of how successful Dicopay's app could be is that the adoption of AI in a BNPL solution could end up having transactions that are 80% faster than before, as highlighted by Rohaime et al. in 2022. Therefore, having this level of efficiency would reduce the need to search for alternatives by companies and thus the creation of a great network in which people interact through the use of this app.

The main problem that arises when it comes to the adoption of this level of Artificial Intelligence is the possibility to lower security and privacy to then increase the amount of information of all people included in the transactions. Desai et al. (2021) have studied a way to protect the private information of contractors through cryptography. Nonetheless, although theoretically, this confidentiality could push people to adopt these new solutions, the sample does not care that much about privacy, and they are more interested in solving illiquidity problems and facing fewer costs upfront.

Going on, Dicopay must aim at showing what are its best characteristics, and in this case, the best way is to show that simplicity is what characterizes the company's app. By doing so, there will be a reduction of the *opaque* transactions highlighted by Udell in 2015, since both parts of the transaction would be aware of how and when the payment is done

through the app. For this reason, there will be not only an increase in liquidity from companies that use this BNPL solution but also an increase in other positive features like the easiness of payments, which is still relevant from the results obtained by the survey. Klapper (2006) focused his attention on how new solutions should be reliable in order to make companies inclined to adopt them. Nonetheless, although the survey has considered this characteristic, results in the data analysis do not include reliability as a variable of relevance. With that being said, it means that the researcher has chosen a sample that sees other variables as more relevant than reliability.

As previously introduced, people tend to adopt *non-recourse factoring* since one of the aspects that the sample has proven is that the costs in these types of transactions are of extreme relevance and companies look for it. Battaiola et al. (2019) have anticipated what the survey has given as a result, thence the inclination to adopt factoring solutions as soon as the fees and the warranties are not strict. Conversely, companies are aware that factoring is an alternative to traditional lends, and for this reason, they would prefer to spend less money and give fewer warranties.

By having a focus on the BNPL aspect, it has been said in the background section that the main barrier, in this case, is the psychological aspect of facing costs afterwards. As reported by Siemens (2007), companies and customers feel better when they face costs before collecting revenues, which is the opposite of the offer from Dicopay. Nonetheless, it is reported from the data analysis that people are actually interested in this offer, such that they would be inclined to adopt a BNPL solution in case they have cash flow problems resulting from lateness in payments. Indeed, people have demonstrated to be more pushed by economic reasons than psychological ones, such that they would rather feel worse but with economic stability (Okada & Hoch, 2004).

Another aspect that should be considered is the necessity to preserve the trustworthiness of the organization, and it has to be maintained because people are afraid of potential frauds, as shown by *Table 7* in the previous section. Blach (2020) has pointed out that platforms face several barriers when trying to successfully penetrate the market, and some of those have been recalled also by the sample. To be more precise, high costs, unclear terms and conditions, and difficulty in implementation of the platform, are all situations that, based on the statistical results shown above, could easily give people the right to not adopt the new solution.

The last aspect that should be identified is with regard to the Blue Ocean Strategy, and in this case, the data analysis has given useful information to Dicopay in order to see how to start running the business. The first thing to do is to show people the value innovation brought by the app, thus the possibility to have a BNPL solution with lower fees than the ones of competitors, and with the utilization of AI in the whole production process. Kim & Mauborgne (2015) tried to explain that companies that want to become successful in the market from the beginning, have to follow a precise strategy aimed at creating an uncontested market space. The latter means being close to customers that could get the most out of the use of the solution provided. The data analysis has proven that not all companies react the same when it comes to Dicopay's solution, and that is the main reason why there have been different answers from the survey. On the contrary, a common path has been identified, and it is the one of looking for alternatives when people face lateness in payments and resulting illiquidity of assets. The movement from generic to specific of the data analysis has had the goal of demonstrating that there are industries and companies that could be more affected by the use of a BNPL solution, and that legal companies could be a great starting point to create an uncontested market space.

6.2. Conclusions of the Study

The purpose of this section is to answer the research questions and see whether hypotheses are tested. To be precise, the previous discussion has shown readers that results are in line with the previous studies, while here the aim is to see if the previous assumptions of the researcher have been addressed.

The first research question is related in general to illiquid assets, and the goal is to see effectively what the real impact of this situation is. In order to answer this research question, the bivariate and multivariate analyses are useful, and although from the former the conclusion is that illiquid assets are extremely damageable for SMEs, from the linear regression it has been demonstrated that it is not so high as it should have been. Nevertheless, by considering illiquid assets also the cash flow problem arising from lateness in payments, the answer is different and here it could be said that this problem must be solved since it is a great issue that SMEs have to deal with.

For what concerns the second research question, it has been shown that there is a strong correlation between illiquid assets and the possibility to start using a BNPL solution. In particular, a correlation higher than 0.5 explains that companies would be inclined to adopt the Dicopay solution, and thus solving both lateness in payments and resulting

illiquidity. In this case, a BNPL solution is not only effective in terms of direct usage but it has been highlighted also the propensity of companies to create Word Of Mouth and let then other organizations know about the new platforms. For this reason, Dicopay must identify which are companies facing this problem to then start looking for ways to create interactions with them. By doing so, there will be a great network and thus the BNPL provider would be able to successfully penetrate the market and solve cash flow problems resulting from delayed payments.

The second research question has then two sub-questions, that have the goal to see how Dicopay could start in order to reach the desired network effects. Regarding the first sub-question, the data analysis per se has the answer. Precisely, while moving from generic to specific, the researcher has pointed out that service companies are the ones that could better exploit the solution offered by Dicopay. For this reason, all companies that provide services rather than goods as the core business, are the ones that would get the most out of the use of a BNPL solution. Then, the data analysis has pointed out that legal companies only have a higher impact on the overall service industry, thus the target here could be to be as much reliable as possible for lawyers, such that they would start adopting this solution to then create Word of Mouth and successfully penetrate the market. By doing so, Dicopay would be able to successfully penetrate the market and create the uncontested market space that the Blue Ocean strategy aims at. It is even peculiar to do so and there would be no competition because other companies providing this sort of solution have not started by targeting a precise segment.

In conclusion, service companies and, more precisely, the legal industry, have to carefully consider the possibility to move from their actual provider to Dicopay. The latter shift would help them to reduce the illiquid assets and not face anymore consumers paying late.

By looking at the hypotheses, it is clear how these have been the basis for the entire data analysis, and that they have been tested to see whether the researcher's assumptions were true. Starting from the null hypothesis, it has been demonstrated that illiquid assets are damageable for SMEs. In particular, all companies facing illiquidity due to lateness in payments have issues in terms of cash flow, impossibility to reinvest money, interest expenses due to possible finances, and so on and so forth. For this reason, illiquid assets are an issue that SMEs must deal with.

The second hypothesis is tested, and it is seen from the bivariate analysis that there is a strong correlation between illiquid assets and the inclination to adopt a BNPL solution. Hence, organizations may solve this issue through the use of Dicopay's app.

For what concerns the last hypothesis, the bivariate analysis is useful to understand that service companies are actually the ones more affected by a BNPL solution. In particular, it has been shown that all correlations increase by some percentages, and that is the reason why the linear regressions have been focused only on service companies rather than on the entire sample. Finally, the legal industry is one of the most influenced ones, thus also the third hypothesis is tested.

6.3. Managerial Implications

The purpose of this study has been to make people understand the potential impact of a solution like the one of Dicopay. There are two main implications that companies could consider when reading this paper.

The first managerial implication is from a Dicopay perspective, and it refers to the findings and what data have shown. Precisely, all companies offering a BNPL solution in the future must focus on organizations that face cash flow problems. By doing so, there would be the possibility for them to tackle the market and successfully penetrate it, otherwise, they would be just a normal Startup that necessitates time in order to become successful in the market. In other words, and as suggested by the Blue Ocean Strategy, startups in the factoring system must aim at creating an uncontested market space by giving people a precise reason to start adopting their solution, and this is done by not following competitors.

The second managerial implication is from a customer's point of view. In this case, companies adopting a factoring solution must be psychologically inclined to move from their typical utilization to a new one that has better outcomes. A BNPL solution is demonstrated to be more profitable, thus companies must move towards those kinds of systems to solve cash flow problems, especially in the very first ages of their businesses.

6.4. Limitations and Future Studies

This study has proven that the factoring system lacks a BNPL solution that could help companies reduce the presence of illiquid assets in their pockets. Although it can be considered a paper that points out a series of relevant information, on the other hand, it has some limitations that future studies could avoid and/or fulfil.

The first limitation is given by the assumptions of the researcher since it has considered cash flow problems resulting from lateness in payments, but these problems are a consequence of other financial situations too. For this reason, it has to be said that, on the one hand, Dicopay's app could help companies, on the other, it does not set to zero cash flow problems for companies.

Another limitation resides on the sample chosen. This study, as said multiple times, is focused only on SMEs, but it does not see whether Dicopay or other solutions like it could be helpful for big corporations. Therefore, future researchers could see if this solution could be beneficial also for organizations governing the market.

Finally, the last limitation is in regard to the geographical dispersion of this study. The sample is composed of companies working in the European Continent, while it might be useful to see what other companies think in the United States of America since that continent is where Dicopay has been founded.

7. APPENDIX A – R SCRIPT

```r
#Load data into R
library(readxl)
mydata <- read_excel("BNPLFINALE copy.xlsx")
View(mydata)

0#load packages
library(data.tree)
library(dataframes2xls)
library(describedata)
library(describer)
library(DescriptiveStats.OBeu)
library(estimatr)
library(evaluate)
library(etable)
library(ggplot2)
library(gravity)
library(knitLatex)
library(knitr)
library(latex2exp)
library(latexdiffr)
library(latexpdf)
library(markdown)
library(magrittr)
library(MatrixModels)
library(pdfetch)
library(performance)
library(png)
library(plyr)
library(pwt10)
library(rematch)
library(rematch2)
library(rmarkdown)
library(stargazer)
library(tidyr)
library(tidyselect)
library(tidyverse)
library(tinytex)
library(tools)
library(xml2)
library(XML)
library(correlation)
library(corrplot)

#change all variables into numeric elements
class(mydata$Cashflow)
mydata$Cashflow <- as.numeric(mydata$Cashflow)
mydata$Cfproblem <- as.numeric(mydata$Cfproblem)
mydata$Chasingsomeone <- as.numeric(mydata$Chasingsomeone)
mydata$Invoices <- as.numeric(mydata$Invoices)
mydata$Customers <- as.numeric(mydata$Customers)
mydata$Efficiency <- as.numeric(mydata$Efficiency)
mydata$Alternative <- as.numeric(mydata$Alternative)
mydata$Factoring <- as.numeric(mydata$Factoring)
```

```r
mydata$Type_Factoring <- as.numeric(mydata$Type_Factoring)
mydata$Adoption_factoring <- as.numeric(mydata$Adoption_factoring)
mydata$Invoices_factored <- as.numeric(mydata$Invoices_factored)
mydata$Debt_Factoring <- as.numeric(mydata$Debt_Factoring)
mydata$Alternative_Factoring <- as.numeric(mydata$Alternative_Factoring)
mydata$BNPL <- as.numeric(mydata$BNPL)
mydata$BNPL_Factoring <- as.numeric(mydata$BNPL_Factoring)
mydata$Competitive_rates <- as.numeric(mydata$Competitive_rates)
mydata$Easiness <- as.numeric(mydata$Easiness)
mydata$Fast_funding <- as.numeric(mydata$Fast_funding)
mydata$Flexibility <- as.numeric(mydata$Flexibility)
mydata$No_guarantees <- as.numeric(mydata$No_guarantees)
mydata$sixty_days <- as.numeric(mydata$sixty_days)
mydata$More_Cashflow <- as.numeric(mydata$More_Cashflow)
mydata$More_payments <- as.numeric(mydata$More_payments)
mydata$More_Sales <- as.numeric(mydata$More_Sales)
mydata$Better_Customer_Experience <- as.numeric(mydata$Better_Customer_Exp
erience)
mydata$Less_illiquidity <- as.numeric(mydata$Less_illiquidity)
mydata$Reinvest_money <- as.numeric(mydata$Reinvest_money)
mydata$Sales <- as.numeric(mydata$Sales)
mydata$Fee <- as.numeric(mydata$Fee)
mydata$Frauds <- as.numeric(mydata$Frauds)
mydata$negative_CF <- as.numeric(mydata$negative_CF)
mydata$Administrative_Taxes <- as.numeric(mydata$Administrative_Taxes)
mydata$Unclear_terms <- as.numeric(mydata$Unclear_terms)
mydata$Unused_system <- as.numeric(mydata$Unused_system)
mydata$Usage_BNPL <- as.numeric(mydata$Usage_BNPL)
mydata$WOM_BNPL <- as.numeric(mydata$WOM_BNPL)

#pie charts for the introduction of the data analysis
require(MASS)
library(MASS)

table1<-table(mydata$Company)
cols <- c("darkblue","lightyellow")
labs <- c("manufacturing companies", "service companies")
pct <- round((table1/margin.table(table1)*100),1)
lbls <- paste(pct,"%")
pie(table1, main="Companies", labels=lbls, col=cols)
legend(0.6, -0.6, cex = 0.8, legend=labs, fill = cols)

table2 <- table(mydata$Industry)
cols <- c("darkblue", "lightyellow", "red", "orange", "pink", "green", "br
own", "turquoise")
labs <- c("Automotive", "Fashion", "Food and Beverage", "Consulting", "Leg
al", "Logistic, E-commerce", "Healthcare", "Other")
pct <- round((table2/margin.table(table2)*100),1)
lbls <- paste(pct, "%")
pie(table2, main = "Industries", labels = lbls, col = cols)
legend(1.0, -0.6, cex = 0.8, legend=labs, fill = cols)

Hist1 <- hist(mydata$Employees,
              main = "Size Of The Companies",
              xlab = "Number of Employees",
              ylab = "Frequency",
```

```
              col = "Darkblue")

Hist2 <- hist(mydata$Start,
              main = "Launch of the Business",
              xlab = "Years",
              ylab = "Frequency",
              col = "Darkblue")

#summary of data
summary(mydata$Company)
summary(mydata$Industry)
summary(mydata$Employees)
summary(mydata$Cashflow)
summary(mydata$Cfproblem)
summary(mydata$Chasingsomeone)
summary(mydata$Invoices)
summary(mydata$Customers)
summary(mydata$Cashflow)
summary(mydata$Cfproblem)
summary(mydata$Less_illiquidity)

is.na(mydata$Company)

#Monovariate analyses
plot(density(mydata$Cashflow),
     main = "Cash Flow Management")
plot(density(mydata$Cfproblem),
     main = "Cash Flow Problem")
plot(density(mydata$Chasingsomeone),
     main = "Lateness in Payments")
plot(density(mydata$Usage_BNPL))
plot(density(mydata$Less_illiquidity))
plot(density(mydata$Invoices))
plot(density(mydata$negative_CF)) #skewed to the left meaning that there a
re more lower values than higher ones, which is a positive thing.
plot(density(mydata$More_Cashflow)) #relevant because of left skeweness

describe(mydata$Cfproblem)
describe(mydata$Chasingsomeone)
describe(mydata$Efficiency)
summary(mydata$Cashflow)
summary(mydata$Cfproblem)
summary(mydata$Efficiency)
summary(mydata$Less_illiquidity) #on consumers' eyes, it is profitable for
companies to use Dicopay's product
summary(mydata$BNPL)
summary(mydata$Easiness) #mean is high, which is a good thing since it is
the most important aspect for Dicopay.


ggplot(x=Invoices, y=Customers, data = mydata, geom = "line")

#boxplots
Graph1 <- boxplot(mydata$Cfproblem ~ mydata$Cashflow,
                  data = mydata,
                  main = "Companies and Cash Flow",
```

```
                  xlab = "Cash FLow",
                  ylab = "Company",
                  col = c("coral", "coral1", "coral2", "coral3"))

hist(mydata$Cfproblem)

plot(Cfproblem ~ Efficiency, data = mydata)

#Cfproblem and Chasingsomeone
cor(mydata$Cfproblem, mydata$Chasingsomeone) #highly correlated

Graph2 <- boxplot(mydata$Cfproblem ~ mydata$Chasingsomeone,
                  data = mydata,
                  main = "CF and lateness in payments",
                  xlab = "Lateness",
                  ylab = "Cash-Flow",
                  col = c("red", "red1", "red2", "red3"))

CF_Chasing <- lm(Cfproblem ~ Chasingsomeone, data = mydata)
summary(CF_Chasing)

#Computing relevant correlations for p value
N_Employees <- lm(Cfproblem ~ Employees, data = mydata)
summary(N_Employees)

CF_invoices <- lm(Cfproblem ~ Invoices, data = mydata)
summary(CF_invoices)

Start_Employees <- lm(Start ~ Employees, data = mydata)
summary(Start_Employees)

Alternative_fact <- lm(Alternative_Factoring ~ Factoring, data = mydata)
summary(Alternative_fact)

BNPL_Fact <- lm(BNPL ~ BNPL_Factoring, data = mydata)
summary(BNPL_Fact)

Debt_Invoices <- lm(Debt_Factoring ~ Invoices_factored, data = mydata)
summary(Debt_Invoices)

Factoring_Invoices <- lm(Factoring ~ Invoices_factored, data = mydata)
summary(Factoring_Invoices)

Invoices_BNPL <- lm(Invoices_factored ~ BNPL, data = mydata)
summary(Invoices_BNPL)

BNPL_Adoption <- lm(BNPL ~ Usage_BNPL, data = mydata)
summary(BNPL_Adoption)

Frauds_Taxes <- lm(Frauds ~ Administrative_Taxes, data = mydata)
summary(Frauds_Taxes)

Frauds_Illiquidity <- lm(Frauds ~ Less_illiquidity, data = mydata)
summary(Frauds_Illiquidity)

BNPL_WOM <- lm(Usage_BNPL ~ WOM_BNPL, data = mydata_subset_service)
```

```r
summary(BNPL_WOM)

CF_lateness <- lm(Cfproblem ~ Chasingsomeone, data = mydata_subset_service
)
summary(CF_lateness)

Illiquidity_BNPL <- lm(Usage_BNPL ~ Less_illiquidity, data = mydata_subset
_service)
summary(Illiquidity_BNPL)

Simplicity <- lm(Efficiency ~ BNPL, data = mydata_subset_service)
summary(Simplicity)

Simplicity_Illiquidity <- lm (Efficiency ~ Less_illiquidity, data = mydata
_subset_service)
summary(Simplicity_Illiquidity)

CF_alternative <- lm(Cfproblem ~ Alternative, data = mydata_subset_service
)
summary(CF_alternative)

Less_BNPL <- lm(Less_illiquidity ~ Usage_BNPL, data = mydata_subset_servic
e)
summary(Less_BNPL)

Simplicity_Alternative <- lm(Efficiency ~ Alternative, data = mydata_subse
t_legal)
summary(Simplicity_Alternative)

#Linear Regression
par(mfrow = c(3,1), mar = c(2,2,1,1))
plot(Cfproblem ~ Chasingsomeone, data = mydata)
abline(CF_Chasing$coefficients, col = "red")
#Residual Patterns
plot(CF_Chasing$residuals, main = "Residuals")
#Quantiles distribution
qqnorm(CF_Chasing$residuals)
qqline(CF_Chasing$residuals)

#creating subsets
mydata_manufacturing <- subset(mydata, Company == 1)
view(mydata_service)

#Analyzing the subset
cor(mydata_service$Cfproblem, mydata_service$Chasingsomeone)
cor(mydata_service$Cfproblem, mydata_service$Invoices) #relevant

mydata_legal <- subset(mydata, Industry == 5)
cor(mydata_legal$Chasingsomeone, mydata_legal$Alternative) #slightly relev
ant
cor(mydata_legal$Alternative, mydata_legal$BNPL) #relevant
cor(mydata_legal$Efficiency, mydata_legal$More_Cashflow) #slightly relevan
t
cor(mydata_legal$Less_illiquidity, mydata_legal$Usage_BNPL) #relevant
cor(mydata_legal$BNPL, mydata_legal$negative_CF) #slightly relevant in neg
ative, meaning that the CF increases
```

```r
#correlation table
mydata_subset <- mydata[, 4:9]
class(mydata_subset$Invoices)
mydata_subset$Invoices <- as.numeric(mydata_subset$Invoices)
view(mydata_subset)
corrplot(corr = cor(mydata_subset), method = "number")

#useful boxplots by seeing correlation from the previous table
par(mfrow = c(1,3))
Graph3 <- boxplot(mydata$Employees ~ mydata$Start,
                  data = mydata,
                  main = "Companies' launch and relative employees",
                  xlab = "Employees",
                  ylab = "Start",
                  col = c("coral", "coral1", "coral2", "coral3"))

Graph4 <- boxplot(mydata$Cfproblem ~ mydata$Employees,
                  data = mydata,
                  main = "Employees and Cash Flow",
                  xlab = "Cash flow problem",
                  ylab = "Employees",
                  col = c("red", "red1", "red2", "red3"))

Graph5 <- boxplot(mydata$Chasingsomeone ~ mydata$Employees,
                  data = mydata,
                  main = "Lateness in Payments and Employees",
                  xlab = "Lateness in Payments",
                  ylab = "Employees",
                  col = c("yellow", "yellow1", "yellow2", "yellow3"))

#computing assumption 1
par(mfrow = c(1,1))
cor(mydata_manufacturing$Start, mydata_manufacturing$Employees)
Graph6 <- boxplot(mydata_manufacturing$Employees ~ mydata_manufacturing$St
art,
                  data = mydata,
                  main = "Companies' launch and relative employees",
                  xlab = "Employees",
                  ylab = "Start",
                  col = c("coral", "coral1", "coral2", "coral3"))

Graph7 <- boxplot(mydata_subset2$Invoices_factored ~ mydata$Factoring,
                  data = mydata,
                  main = "Factoring and number of invoices",
                  xlab = "Invoices Factored",
                  ylab = "Factoring",
                  col = c("yellow", "yellow1", "yellow2", "yellow3"))

#Analyzing the second correlation table
mydata_subset2 <- mydata[, 12:20] #creating a subset
view(mydata_subset2)
corrplot(corr = cor(mydata_subset2), method = "number") #Correlation table

par(mfrow = c(1,1))
Graph6 <- boxplot(mydata_subset2$BNPL ~ mydata_subset2$BNPL_Factoring,
```

```
                  data = mydata_subset2,
                  main = "BNPL and Factoring correlation",
                  xlab = "BNPL",
                  ylab = "Factoring",
                  col = c("coral", "coral1", "coral2", "coral3"))

#Analyzing the third correlation table
mydata_subset3 <- mydata[, 28:39]
view(mydata_subset3)
corrplot(corr = cor(mydata_subset3), method = "number")

#Analyzing the hypotheses
#Creation of subset with only service companies
mydata_restricted <- read_excel("BNPLsubdata.xlsx")
view(mydata_restricted)
mydata_subset_service <- subset(mydata_restricted, Company == 2)
view(mydata_subset_service)
corrplot(corr = cor(mydata_subset_service[, 3:15]), method = "number")
class(mydata_subset_service$Invoices)
mydata_subset_service$Invoices <- as.numeric(mydata_subset_service$Invoice
s)

Graph7 <- boxplot(mydata_subset_service$BNPL ~ mydata_subset_service$Less_
illiquidity,
                  data = mydata_subset_service,
                  main = "BNPL and Illiquid Assets",
                  xlab = "BNPL",
                  ylab = "Reduction of Illiquid Assets",
                  col = c("coral", "coral1", "coral2", "coral3"))

#Creation of subset with only the legal industry
mydata_subset_legal <- subset(mydata_restricted, Industry == 5)
view(mydata_subset_legal)
class(mydata_subset_legal$Invoices)
mydata_subset_legal$Invoices <- as.numeric(mydata_subset_legal$Invoices)
corrplot(corr = cor(mydata_subset_legal[, 3:15]), method = "number")

BNPL_Illiquidity <- lm(Usage_BNPL ~ Less_illiquidity, data = mydata_subset
_legal)
summary(BNPL_Illiquidity)

par(mfrow = c(2,2))
Graph8 <- boxplot(mydata_subset_legal$Alternative ~ mydata_subset_legal$Ef
ficiency,
                  data = mydata_subset_legal,
                  main = "Efficiency and Possible Alternatives",
                  xlab = "Alternative",
                  ylab = "Efficiency",
                  col = c("coral", "coral1", "coral2", "coral3"))

Graph9 <- boxplot(mydata_subset_legal$Efficiency ~ mydata_subset_legal$BNP
L,
                  data = mydata_subset_legal,
                  main = "Efficiency and BNPL",
                  xlab = "Efficiency",
                  ylab = "BNPL",
```

```
                  col = c("red", "red1", "red2", "red3"))

Graph10 <- boxplot(mydata_subset_legal$Usage_BNPL ~ mydata_subset_legal$Le
ss_illiquidity,
                  data = mydata_subset_legal,
                  main = "Utilization of BNPL and Illiquidity",
                  xlab = "BNPL",
                  ylab = "Reduction of Illiquidity",
                  col = c("aquamarine", "aquamarine1", "aquamarine2", "aqu
amarine3"))

Graph11 <- boxplot(mydata_subset_legal$Invoices_factored ~ mydata_subset_l
egal$Usage_BNPL,
                  data = mydata_subset_legal,
                  main = "Amount of Invoices Factored and BNPL Utilization
",
                  xlab = "Invoices Factored",
                  ylab = "BNPL",
                  col = c("antiquewhite", "antiquewhite1", "antiquewhite2"
, "antiquewhite3"))

#MULTIVARIATE ANALYSIS
#Load necessary libraries
library(corrplot)
library(ggplot2)

#Cash flow problem as the dependent variable
lm_test1<- lm(sqrt(mydata_subset_service$Cfproblem)~mydata_subset_service$
Chasingsomeone+mydata_subset_service$Invoices+mydata_subset_service$Altern
ative+mydata_subset_service$BNPL_Factoring)
summary(lm_test1)
plot(lm_test1)

#Reduction of illiquid assets as the dependent variable
lm_test2 <- lm(sqrt(mydata_subset_legal$Less_illiquidity)~mydata_subset_le
gal$Usage_BNPL+mydata_subset_legal$WOM_BNPL+mydata_subset_legal$BNPL_Facto
ring)
summary(lm_test2)
```

8. APPENDIX B – SURVEY

Start of Block: General Information On The Company

InformedConsent. Welcome! You are about to take part in survey that poses no known risks. In compliance with the EU Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 (general data protection regulation) related to the protection of personal data, we remind you that the information provided will be processed only for scientific research and non-commercial purposes and in an aggregate manner ensuring the most complete anonymity. Anyone over the age of 18 can participate. The depositary of the data processing is Prof. Cinzia Calluso and Fabrizio Lanna from the Department of Business and Management, LUISS University, Rome (Italy). For any information on research, please contact the e-mail address: fabrizio.lanna@studenti.luiss.it

Please provide ALL required information. There are NO right or wrong answers. You can stop at any time during the experiment if you feel uncomfortable. To proceed, press the "next" button. By pressing "next" button you consent to the processing of your data.

Question 1: Can you please select which type of company are you?

- ○ Manufacturing company (1)
- ○ Service company (2)

Question 2: Can you please select in which industry do you work?

- ○ Automotive industry (1)
- ○ Fashion industry (2)
- ○ Food and beverage industry (3)
- ○ Consulting industry (4)
- ○ Legal industry (5)
- ○ Logistic, E-commerce industry (6)
- ○ Healthcare, bio-pharma industry (7)
- ○ Other (8) _____

Question 3: Can you please select how many employees work in your company?

- ○ 1-10 (1)
- ○ 11-20 (2)
- ○ 21-30 (3)
- ○ 31-40 (4)
- ○ 41-50 (5)
- ○ More than 50 (6)

Question 4: When did your company start its business?

- ○ Less than 1 year ago (1)
- ○ 1 - 2 years (2)
- ○ 3 - 5 years (3)
- ○ More than 5 years ago (4)

End of Block: General Information On The Company

Start of Block: General Information On Invoices adoption

Question 5: How important is cash flow management for your business?

- ○ Not at all (1)
- ○ Slightly unimportant (2)
- ○ Neither important nor not important (3)
- ○ Somewhat important (4)
- ○ Strongly important (5)

Question 6: Have you ever faced a cash flow problem in your business?

- ○ Never (6)
- ○ Rarely (7)
- ○ Sometimes (8)
- ○ Often (9)
- ○ Always (10)

Question 7: How often have you had to "chase" someone for lateness in payments?

- ○ Never (1)
- ○ Rarely (3)
- ○ Sometimes (4)
- ○ Often (5)
- ○ Always (6)

Question 8: How many invoices do you generate each month on average?

_____

Question 9: How many customers do you invoice each month on average?

_____

Question 10: How different are the invoices (systems) that you send out?

- ○ Every invoice I send out is the same (1)
- ○ I send out a few different "types" of invoices (2)
- ○ Every invoice I send out is different than the last (3)

Question 11: How do you currently generate invoices? (a software/service, pen and paper etc...).

_____

Question 12: Before you started using this method of generating invoices, what did you use?

_____

Question 13: How productive or efficient do you think it is the system that you currently adopt?

- ○ Inefficient (1)
- ○ Slightly inefficient (2)
- ○ Neither efficient nor inefficient (3)
- ○ Somewhat efficient (4)
- ○ Very efficient (5)

Question 14: To which extent would you consider an alternative to the system that you are currently using?

- ○ Extremely Unlikely (8)
- ○ Unlikely (9)
- ○ Neutral (10)
- ○ Likely (11)
- ○ Extremely Likely (12)

Display This Question:

If Question 14 = Extremely Unlikely

Or Question 14 = Unlikely

Question 15: Can you please explain why?

_____

End of Block: General Information On Invoices adoption

Start of Block: Questions on Factoring

Question 16: Have you done factoring?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Question 16 = No

Question 17: You reported that you have never used factoring, please explain why.

- ○ I never found a trustable factor (1)
- ○ I never had the necessity to use factoring (2)
- ○ I never used invoices as a source of payment (3)
- ○ other (4) _____

Display This Question:

If Question 16 = Yes

Question 18: What type of factoring have you used?

- ○ Recourse factoring - real estate assets as collateral (1)
- ○ Non-recourse factoring - sold only the invoice without collaterals (2)

Display This Question:

If Question 16 = Yes

Question 19: Why have you decided to start adopting factoring solutions?

- ○ I did have working capital and/or cash flow problems (1)
- ○ My bank offered me this solution (2)
- ○ I trusted NBFC (Non-Banking-Financial-Company) that offered me factoring (3)
- ○ I considered factoring a good alternative to short-term bank loans (4)
- ○ Other (5) _____

Display This Question:

If Question 16 = Yes

Question 20: How many times do you factor invoices?

- ○ Never (1)
- ○ Rarely (2)
- ○ Sometimes (3)
- ○ Often (4)
- ○ Always (5)

Display This Question:

If Question 16 = Yes

Question 21: How much debt factoring did you use annually?

- ○ Less than €50,000 (1)
- ○ €50,000 - €100,000 (2)
- ○ €100,000 - €200,000 (3)
- ○ €200,000 - €300,000 (4)
- ○ More than €300,000 (5)
- ○ N/A (6)

Display This Question:

If Question 16 = Yes

Question 22: Have you ever thought of an alternative factoring solution to the one that you are currently adopting?

- ○ Yes (1)
- ○ No (2)

End of Block: Questions on Factoring

Start of Block: Buy-Now-Pay-Later Solution

Question 23: A Buy-Now-Pay-Later solution could be easily explained by the consumer who pays later the amount of money for something purchased in advance.
How familiar are you with Buy-Now-Pay-Later solutions?

- ○ Not familiar at all (1)
- ○ Slightly familiar (2)
- ○ Moderately familiar (3)
- ○ Very familiar (4)
- ○ Extremely familiar (5)

Question 24: To which extent would you consider an alternative that matches factoring system with the Buy-Now-Pay-Later solution to improve your cash flow management?

- ○ Not at all (8)
- ○ Probably not (9)
- ○ Possibly (10)
- ○ Very probably (11)
- ○ Definitively (12)

Question 25: What features or benefits of a factoring system that offers a Buy Now Pay Later solution would be most important to you? Please rate each option, from 1 to 5, where 1 correspond to "not important at all" and 5 corresponds to "extremely important"

	1 - Not important at all (1)	2 (2)	3 (3)	4 (4)	5 - Extremely important (5)
Competitive rates and fees (1)	○	○	○	○	○
Easy application process (2)	○	○	○	○	○
Fast funding (3)	○	○	○	○	○
Flexible repayment terms (4)	○	○	○	○	○
No personal guarantees required (5)	○	○	○	○	○

Question 26: How likely are you, as a producer, to use a Buy Now Pay Later solution that allows consumers to pay back within 60 days?

- ○ Extremely unlikely (1)
- ○ Somewhat unlikely (2)
- ○ Neither likely nor unlikely (3)
- ○ Somewhat likely (4)
- ○ Extremely likely (5)

Question 27: What benefits do you see in using a Buy Now Pay Later solution for your business? Please rate each option, from 1 to 5, where 1 correspond to "not beneficial at all" and 5 corresponds to "extremely beneficial".

	1 - Not beneficial at all (1)	2 (2)	3 (3)	4 (4)	5 - Extremely beneficial (5)
Improved cash flow (1)	○	○	○	○	○
Faster payments from customers (2)	○	○	○	○	○
Increased sales (3)	○	○	○	○	○
Better customer experience (4)	○	○	○	○	○
Reduction of illiquid assets (5)	○	○	○	○	○
Possibility to reinvest money (6)	○	○	○	○	○
Higher sales (7)	○	○	○	○	○

Question 28: To what extent would you be willing to pay a fee or percentage of the transaction to use a Buy Now Pay Later solution?

- ○ Not at all (1)
- ○ A small amount (2)
- ○ A moderate amount (4)
- ○ Even a large amount (5)

Question 29: What concerns do you have about using a Buy Now Pay Later solution matched with a factoring system? Please rate each option, from 1 to 5, where 1 correspond to "not concerned at al" and 5 corresponds to "extremely concerned"

	1 - Not concerned at all (1)	2 (2)	3 (3)	4 (4)	5 - Extremely Concerned (5)
Potential fraud or chargebacks (1)	○	○	○	○	○
Negative impact on cash flow if customers don't pay on time (2)	○	○	○	○	○
Added administrative tasks (3)	○	○	○	○	○
Unclear terms and conditions (4)	○	○	○	○	○
Unused payment system (5)	○	○	○	○	○

Question 30: How likely are you to use a Buy-Now-Pay-Later solution in your business?

- ○ Extremely unlikely (1)
- ○ Somewhat unlikely (2)
- ○ Neither likely nor unlikely (3)
- ○ Somewhat likely (4)
- ○ Extremely likely (5)

Question 31: How likely are you to recommend a Buy-Now-Pay-Later solution to other businesses in your industry?

- ○ Extremely unlikely (1)
- ○ Somewhat unlikely (2)
- ○ Neither likely nor unlikely (3)
- ○ Somewhat likely (4)
- ○ Extremely likely (5)

End of Block: Buy-Now-Pay-Later Solution

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9. SUMMARY

This section aims at summarizing all the relevant aspects covered all along the thesis. The idea is to give a broad perspective of all information adopted from the introduction up until the case focus, in the first part. Going on there is the data analysis, which is then adopted with the literature review to discuss about the topics and conclude with answering the research questions and the hypotheses. Finally, some recommendations and future studies are explained.

9.1. Introduction

If there is one thing that will surely make or destroy small businesses, that is cash. Over the years, the World has seen an incredible number of startups launching their business, where only a few of them have been actually able to successfully compete in the market. In order to understand how to reduce financial distress, it is firstly relevant to highlight how this issue is the consequence of a series of business choices. A possible problem at the basis of such financial distress may derive from the cash flow problem, that arises when consumers are given time to pay the invoices. In other words, companies have already offered their services, while consumers still have to pay, thus organizations may find themselves in the situation of not having money to finance their own activities because of lateness in invoice payments.

Invoices are solutions given to consumers, allowing them to have a precise period, which usually goes from 30 to 120 days, to pay producers. By doing so, there will be a time in which companies have spent their money, but they have not yet collected the revenues; thus, there exists a cash flow problem arising because of **illiquid assets** (Klapper, 2006). invoices are the transaction used in the factoring system, in which there are three parties: the factor, the adherent and the debtor (Negescu-Oancea, Burlacu, Mitrita, Buzoianu, 2020). The former provides the service and gives the adherent the money through invoices payments, the adherent is the seller of goods and/or services, while the debtor is the buyer and the one who has to pay back the factor (Negescu-Oancea et al., 2020).

Another aspect that is implemented into this factoring solution is the *Buy-Now- Pay-Later* (BNPL) solution (Fisher et al., 2021). The latter is the financial intermediation where consumers purchase goods immediately, but the payment is delayed. The combination of BNPL with the factoring, as the Start-up under consideration has created, determines the

situation where the factor pays the adherent at the moment in which the debtor takes the product, while the debtor still has time to pay the money back (Fisher et al., 2021).

A Stockholm-based startup that has found a way to give entrepreneurs money right after they have offered their products/services, without obliging consumers to pay immediately. The organization is called Dicopay, and it has some aspects that will make it a disruptor. In particular, Dicopay's most powerful characteristic is simplicity, in terms of payment systems, and easiness of understanding. In particular, it is an app where invoices can be directly sent through the app and, at the moment the consumer accepts the payment, producers immediately receive back the money, while the consumer still has sixty days to pay.

This study is composed of close interactions with the company, pointing attention to how to remove illiquid assets coming from the aforementioned situation. To be more precise, it appears that people do not have enough information regarding the problem, and to make Dicopay successful, it is of extreme relevance that possible users understand the dilemma. After that, the second focus has to be on trying to explain whether or not Dicopay is able to reduce the cash flow problem in Sweden and then perhaps in the entire World. Finally, the discussion would consider some ways through which Dicopay could exploit the Blue Ocean Strategy in order to create an uncontested market space.

Based on all previous statements, the following research questions are linked in order to then have a precise impact on reality. Hence, four research questions will be addressed:

RQ1: To what extent is the illiquid assets problem relevant for small businesses?

RQ2: How could the Buy-Now-Pay-Later Solution help solve the illiquid assets problem?

RQ2.1: What companies would have the most use of a Buy-Now-Pay-Later factoring solution and why?

RQ2.2: Among these companies, which would be a good starting point for Dicopay to build an uncontested market space?

Consequentially to the research questions, the following are the hypotheses that have been tested through the data analysis:

H1: Illiquid Assets are not damageable for small organizations.

H2: A Buy-Now-Pay-Later solution would solve liquidity problems for small organizations.

H3: Lawyers or other service providers may be more affected by a factoring solution than manufacturing companies.

9.2. Literature Review

FinTech is the terminology adopted to describe new ways through which financial intermediation can take place (Papadimitriou et al., 1994). From time to time the issue for these types of startups has always been the same: make customers inclined to move from traditional commercial banks (Papadimitriou et al., 1994). In particular, when companies are the target customers, banks usually rely more on large organizations compared to small businesses (Papadimitriou et al., 1994). Haddad and Hornuf (2021) have focused their attention on how innovative financial startups can break the market. Findings suggested that FinTech startups could ease the performance of financial intermediation, not only in terms of profits but even regarding the market size (Haddah & Hornuf, 2021). The more FinTech startups enter the market, the lower would be the systematic risk, and this is explained by the use of the marginal expected shortfall (Haddah & Hornuf, 2021).

The main barrier that financial startups have to face is not related to the regulation, rather the problem is about convincing consumers to change their habits regarding payment solutions (Dahlberg & Öörni, 2008). According to Dahlberg and Öörni (2008), old habits die slowly, but the shifts in finances must be analyzed practically, not theoretically as it has been done by previous researchers. In other words, consumers' choices have to be detected on a flow method, therefore taking into consideration a period of time to see if that sample has actually shifted from traditional lending to new technologies offered (Dahlberg & Öörni, 2008).

Artificial Intelligence (AI) has great potential, it can improve the World, and it can ease personal and professional intermediation (Saetra, 2021). By definition, AI can be any technology or software that represents one of the following characteristics: decision-making, prediction, audio/visual recognition, automatic knowledge extraction, interactive communication, logical reasoning, and data analysis (Saetra, 2021). The impact of AI reflects on three different levels: macro, meso and micro (Saetra, 2021). It could have for example a positive financial impact on a precise region, which then reflects among and within countries (macro and micro effects, respectively) (Saetra, 2021). Furthermore, the first usage of the internet has been the case of Nacional Financiera (Nafin) development

bank in Mexico, which eased the factoring services to SMEs (Klapper et al., 2005). Another relevant aspect of the factoring system is the amount of accounts receivables, which is measured on precise quantitative formulas, followed by the ownership of receivables that moves from borrowers to factors (i.e., lenders) (Udell, 2015).

Factoring companies provide credits to consumers when they have to pay producers (Papadimitriou et al., 1994). The importance of these solutions has been displayed among many studies, for instance, the analysis of how in 1991 these businesses reached $260 billion worldwide, with a high percentage of the total in the United States of America (Papadimitriou et al., 1994). Some advantages are the outcome of factoring structures, starting with the absence of the same supervision established on commercial banks (Papadimitriou et al., 1994). For this reason, the profitability of purchasing accounts receivables is high for factoring companies and not for banks as collateral warranty (Papadimitriou et al., 1994). If on one hand factoring is said to be different from bank loans, it should be clear out that there are three major asymmetries between these two types of financing approaches (Vasilescu, 2010). The first is the importance given to receivables, considered to be a financial asset; the second is that factoring cannot be considered as a loan, while it is the acquisition of a receivable; finally, factoring involves not two parties, but three (Vasilescu, 2010). Regarding the last aspect, it functions in a way such that the business gives its receivables at a precise discount (Vasilescu, 2010). Factoring differs from commercial banks even in what concerns the functions (Vasilescu, 2010). In particular, financing is the first, but not the only aim, due to the presence of service providing and protection against bad debts (Vasilescu, 2010). The main reason why factors are so common among companies, especially SMEs, is that the adherent does not have to pay at the moment of the contract sealing (Vasilescu, 2010). Precisely, there is a maturity of invoices and consumers have to pay at the chosen maturity, therefore it gives time to them to collect the required money to pay invoices (Vasilescu, 2010).

An advantage of the factoring solution is the link of the value of the assets using a precise formula, instead of present or historical value measurements (Klapper, 2006). Developed and developing countries have understood, from time to time, the relevance of this type of payment system, especially for SMEs and startups that struggle to reach finances from banks (Klapper, 2006).

Many studies have pointed out how factoring is a great solution for SMEs who usually face the so-called finance gap, meaning the impossibility to reach the required finances

through bank loans because of financial instability (Soufani, 2012). The main reason why there is this finance gap is the absence of equity capital, reducing then the trustability of SMEs in banks' eyes (Soufani, 2012). Soufani (2012) has tried to tie up this statement in the UK market, explaining how in this market there is a great necessity for small organizations to use factors to obtain the required finances to run their businesses. The solution addressed was based on a differentiation of companies that used factoring solutions in the UK based on size, history, type and sector of the organization, and legal structure (Soufani, 2012). The first outcome obtained through the aforementioned separation suggested that the smaller the size, the higher their propensity to get finances through factors (Soufani, 2012).

There are different reasons why factoring is so common in some countries, and all is in its advantages (Vasilescu, 2010). It is firstly extremely easy to get finances for SMEs not only because of the lower credit check but also due to the low debt level analysis (Vasilescu, 2010). The factoring is then, as previously explained, only a receivable asset that is given to the factor, thus it does not create any debt, contrary to bank loans (Auboin et al., 2016).

There are two historical configurations of factoring solutions: recourse and non-recourse (Battaiola et al., 2019). The former represents a traditional commercial loan where the invoice is a collateral, while the latter gives payments to suppliers in a precise time in exchange for a fee (Battaiola et al., 2019). A modern way of using factoring is the reverse, where it is the buyer who proposes to the supplier the use of invoices, allowing the buyer to have lower costs and immediate money to pay the supplier (Battaiola et al., 2019). History has shown that people tend to stick with intermediaries, especially if the cost-efficiency trade-off is profitable (Battaiola et al., 2019). Therefore, the solution to all these threats could be owning a portfolio of invoices by a precise factor, allowing it to keep tracing the sellers' transactions, thus dramatically reducing the risk of double factoring (Battaiola et al., 2019).

Another financial tool that has taken hold in the last decade is the Buy-Now-Pay-Later (BNPL) solution (Fisher et al., 2021). Through this transaction, consumers get immediately the product and pay only a fraction of the total amount at the moment of the purchase, while the remaining amount of money is paid afterwards without additional fees (Fisher et al., 2021). The seller in this case is paid after a precise maturity by the provider of the BNPL offer (Fisher et al., 2021). This type of transaction is predominantly

done through the help of a third party, an intermediary who works between the consumer and the supplier (Guttman-Kenney et al., 2023). Guarantees on the repayment change based on the lender, and a common provider of BNPL solutions is Klarna, which operates in both UK and Scandinavian markets (Guttman-Kenney et al., 2023). Buyers who use Klarna have indeed thirty days to repay with the option of the payment split in three subsequent instalments (Guttman-Kenney et al., 2023). Profits for lenders are mainly based on fees that usually go from 3% to 6% but, for instance, PayPal does not charge any fee for late transactions (Guttman-Kenney et al., 2023). The idea underlying Klarna and other BNPL providers is that consumers have to be able to pay suppliers at a later stage without borrowing money through other sources of financing (Guttman-Kenney et al., 2023).

The adoption of BNPL solution is based on demographic characteristics, age first and foremost (Gerrans et al., 2021). In particular, youngsters in the range of 18 to 34 years old stand for more than 60% of all BNPL transactions (Gerrans et al., 2021). The latter is the result of financial instability and non-trustworthiness that younger people tend to have compared to older ones (Gerrans et al., 2021). Another reliable explanation is instead focused on youngsters' propensity to easily learn how to use apps, which are providers' main ways of adopting BNPL solutions (Gerrans et al., 2021). Nonetheless, most of the time apps allowing BNPL financing are owned by banks, thus they give the possibility to consumers to have access to credits that they can use to buy goods and services within a precise range of money (Gerrans et al., 2021).

If it is said that the main benefit for producers to adopt BNPL is the increase of sold products and services, Siemens (2007) pointed out the negative outcome resulting from the lateness in payments. The first element is psychological rather than purely economical, such that consumers and producers tend to value more things where costs are faced prior to the benefits (Siemens, 2007). By focusing on producers, they tend to feel better off if they have receivables compared to having debts (Siemens, 2007). Following the same consideration, the increase in credit and debit cards has improved the number of BNPL transactions, in which consumers tend to consider the upcoming payment a loss because it happens long after the usage of the product (Siemens, 2007).

Old and new companies always focus on the characteristics of the market to formulate their business models and upcoming strategies, and this is the main reason for stagnation and the impossibility to reach competitive positions (Kim & Mauborgne, 2015). Kim and

Mauborgne (2015) have explained the main differences in the outcomes of red and blue oceans. The former represents the incumbents who follow the industry boundaries, while the latter considers all the companies not already active in the market who can create an uncontested market space (Kim & Mauborgne, 2015). Therefore, getting crowded in the economic environment becomes irrelevant in the Blue Ocean, where rules and status are waiting to be set (Kim & Mauborgne, 2015).

The reason why this strategy can be so successful in specific markets is that users tend to focus on value innovation (Kim & Mauborgne, 2015). The latter means that through innovation it is possible to end up building value for both buyers and the company itself, thence ending up with an uncontested market space (Kim & Mauborgne, 2015). Value is in this sense built by focusing on utility, costs and price at the same time (Kim & Mauborgne, 2015).

9.3. Case Focus

Platforms depend on what they serve, and nowadays there are different groups of systems based on their offer. For instance, social media platforms are perhaps the greatest ones in terms of usage, where almost the entire World is connected through socials. A more recent phenomenon regards the new payment platforms, namely PayPal and Klarna, in which two different groups of people (i.e., "sides" of the platform) are interconnected (De Reuver et al.,2018). The latter is extremely relevant in all daily-basis activities, since it has changed the way people pay and get finances, and that is the main reason why these platforms have been considered to be disruptions. All these financial disruptors have, as a common denominator, the digitalization of their businesses, which fastens all the stages of the value chain and allows the reduction of geographical distances (De Reuver et al., 2018). Precisely, platforms like PayPal do not require at all proximity between the sender and the receiver, thence it eases the enlargement of the whole business.

Being digital means that the platform works smoothly through standardized data and/or information that are run by the system. Therefore, the main limitation of the application of AI on platforms is the impossibility of perfectly customizing all activities. Nevertheless, the aforementioned constraint is surely less relevant than all positive outcomes, starting from the speed and efficiency that dramatically increase (Kallinikos et al., 2013). The functionality of any type of digital platform depends on the presence of clouds, databases and precise analytical solutions (Hein et al., 2020). The goal of platforms is to give people an easier way to interact with each other, thus giving them a

standardized way of performing, for instance, transactions. competitiveness depends on the presence of the disruptive company in the market, even though one consequence is sure and it does not change: competitors have to adapt their business model if they aim at remaining competitive over the long run. Looking at the differences based on the size, outcomes are pretty easy to forecast: if disruptors are incumbents, then they could only increase their market share and profits over competitors. If instead, startups are the ones who launch a new digital platform, then they could easily create their uncontested market space if the launch is sustained by a successful strategy that targets the right consumers.

Financial ecosystems are therefore the ones characterized by what Bose et al. (2019) have called a tangle of interconnections, where people iterate their activities to get the best out of a single transaction. Platforms that sell financial solutions to people are then able to compete in the market only through the presence of specific transactions between users. From time to time, platforms selling financial solutions have increased in terms of number and size, such that nowadays traditional commercial banks have much less relevance in the financial market compared to the past.

Although the digitization of platforms has become a relevant aspect of daily economic activities, there have been bigger impacts of this evolution in some activities of the market. Precisely, FinTech has determined the evolution of a series of platforms that eased the intermediation between suppliers and consumers in general, while there has not yet been a clear evaluation of digital platforms on other sides of the market, likely the asset management (Haberly et al., 2019). Haberly et al. (2019) have then tried to come up with the so-called Global Financial Network (GFN), where different sides of the financial market interact with each other, with the aim of building an ecosystem.

Business platforms have usually a peculiar structure, where the first characteristic resides in the verticality of the organization. Being an app means that most of the time employees work horizontally with the aim of improving the utilization of the app by the largest number of users possible. In other words, the value chain of traditional businesses, also in the financial industry, is replaced by a more agile structure (Agyei-Boapeah et al., 2022). there are different types of platforms based on their service offered, but sometimes these separate industries can collapse and be present in a precise app. By paraphrasing it, a single platform could represent itself as part of a series of different industries, and this is due to innovations that could be easily implemented. Nevertheless, for the purpose of this study, it is relevant to see thoroughly the financial platforms and how they are

structured. Most of the time, these are Blockchain-based, where general information is placed at the center of the ecosystem. The latter is extremely beneficial for both parts of the ecosystem since it reduces the need to have financial intermediaries. This phenomenon is called *Decentralized Finance*, and it is what platforms working in this industry are trying to reach (Agyei-Boapeah et al., 2022). The presence of simple electronic interfaces has made possible the reduction of costs for both parties of a single transaction due to the absence of the *middleman*.

Platforms' success is based on their level of closeness. Every ecosystem is considered to be closed when it forbids usage for people that are not subscribed to the system (Agyei-Boapeah et al., 2022). In this case, on one hand, it protects the entire software from potential threats, on the other hand, in order to become a subscriber, usually there is a fee that most of the time people do not want to face. Open platforms are instead the ones that do not have any kind of restriction on their use, thus people could start using them at any moment. Theoretically, openness means more possibility to increase the number of users. Nonetheless, especially when it comes to the financial industry, platforms tend to be closed, and the reason resides mostly in the higher profits earned by this structure (Agyei-Boapeah et al., 2022). The level of closeness or openness is relevant in terms of usage, participation, monetization and regulation (Agyei-Boapeah et al., 2022).

In order to start using Dicopay, there are some steps that entrepreneurs and individual contractors have to go through. First of all, once the app has been downloaded, there must be an onboarding process through which AI analyzes the reliability of those contractors. If the onboarding is passed, then the second step is phone verification, which consists of verifying whether the phone number is used, and the person actually uses that number. This step is mainly done to see if the downloader is a human or a machine. The following steps are the ones that require the most time because now the bank that works as a deposit for the contractor must accept Dicopay as the basis for transactions. Once these stages are finalized, all people can start sending and receiving invoices within the Dicopay app, and it is at that moment, the platform becomes peculiar. Precisely, all transactions follow the steps explained below:

- **Sending of the invoice**: the producer sends the invoice to the consumer in the app.

- **Acceptance of the invoice**: the consumer accepts the invoice, and there are several ways the user can use it, but the video recording seems to be the one that

Dicopay wants to speculate as the best. Here consumers must take a video on Dicopay where they accept the payment.

- **Purchasing of the product or service**: once the invoice has been confirmed, the product or service is given to the consumer.

- **Money transaction**: being a BNPL solutions provider means that the producer does not have to wait sixty days to get the money back. For this reason, at the moment of the acceptance of the invoices from consumers, the bank transfers immediately the money into producers' profiles.

- **Repayment from consumers**: buyers accept the invoices especially because they do not have anything to lose. In particular, if on one hand, Dicopay takes the 3% out of all commissions, on the other consumers still have sixty days to pay back the money. This stage is also completed through Dicopay, where consumers have the possibility to repay either all at once or in smaller amounts in different periods.

9.4. Methodology

Since the research project is based on quantitative aspects of a case study, the ontological position is objectivism, discussing reality as an observable object with rules. Objectivism is sealed by numbers as the basis of the entire discussion, thus there will be statistical and mathematical explanations of the conclusions addressed by the study. The reason why the analysis is conducted through an objectivism-positivism approach is that data are from the real world regarding the cash-flow problem resulting from a precise action: the delay in invoices' payments. Once this is done, through the analysis conducted using the software *R* (R Core Team, 2014), there will be insights explaining which segments of the market could be more positively influenced by the Dicopay app. The last part of the analysis is related to the Blue Ocean Strategy, and how the company could implement it in order to aggressively penetrate the market and become competitive from the beginning.

The quantitative approach has some theories that allow the data analysis, and therefore the perspective used is one of the researchers, and then the main focus of quantitative studies is to gather and further analyze numbers. By combining the quantitative approach with the philosophical aspects of social sciences, numbers allow the researcher to be completely objective, therefore explaining reality without identifying a new theory (Bell et al., 2019). Thus, the deductive approach is guaranteed and there can be found answers to the research questions and the hypotheses without assuming new theories as the basis.

Roughly speaking, the research strategy is quantitative since the focus is on testing data rather than generating new ones. The testing of data will then be the basis to see the real impact of Dicopay's app. The following sections explain how data will be gathered and how to narrow the analysis to see the potential impact of the product under consideration. Nonetheless, the potential impact of the app is even identifiable through the use of secondary data.

As identifiable through the combination of the proposed title with the history regarding Dicopay, and as previously anticipated, the paper is a case study, known to be one of the best designs to assess business and management current circumstances (Bell al., 2019). First of all, the reason behind this decision is given by the in-depth analysis of the cash-flow problem and how a specific company could solve the aforementioned issue through its innovation (Crowe et al., 2011). A common mistake in academic papers is to consider case studies only qualitative reports, therefore through semi-structured interviews the interviewer is able to gather information about the company, but this is not the status quo (Bell et al., 2019). Knights and McCabe (1997) have stated how the qualitative approach to a case study is sometimes lacking objectivity, thus it does not light up the important features of the organization under consideration, such that quantitative methods could be better suited. By then combining the research design with the strategy, the case study pops up to be deductive, therefore theories have been taken for granted and then data are based on them. Not all case studies are the same, such that their design is the consequence of their focus.

It is when collecting the primary data that there could be difficulties since there are a series of independent variables that must be considered and lots of barriers that must be overwhelmed. The first and perhaps toughest drawback is how to get in contact with companies. To do so, the best way may be to use Dicopay's network, which has been piece by piece built on small companies. Since they know what the project is about, the use of Dicopay's name will make them feel more comfortable sharing the necessary information. Nevertheless, the analysis must not be limited to companies that have already agreed on this way of making transactions, because otherwise outcomes will be biased and results would not be generalizable.

The survey is composed through Qualtrics and it has 31 questions divided into the following four blocks:

- First part: general information on the company, likely size, number of employees, sector, and type of company. This part is relevant in order to test hypotheses and research questions regarding how to competitively target the market. This is relevant to make possible the creation of clusters for the subsequent data analysis, and it does not contain only quantitative questions.

- Second part: number of invoices used, how invoices are created and number of consumers. These are open-ended questions in order to present to the researcher big data that could be then analyzed. The objective here is to see the potential impact of Dicopay's app, and whether those segments have alternative payments already in use.

- Third part: factoring. The main objective is to see how many times invoices are factored and what are the main reasons people decide to use factoring as a source of financing.

- Fourth part: BNPL solution. The goal is to show companies' inclination to start using the Dicopay app to launch invoices and get paid immediately.

The next sections of the data analysis are structured as a sort of storytelling, in which the researcher explains deeply each step of the analysis in order to have enough data to answer the research questions and subsequently test the hypotheses. In particular, the analysis is from generic to specific, in which the first analysis is based on the whole dataset, and then the analysis shifts to subsets to find precise arguments to the paper's focus. The assumption is to use univariate analysis to describe data and see whether there is useful information to dig in. In other words, some variables in the univariate analysis have been used to describe the sample, its structure and how it should be used in order to go on with the assumptions. For instance, the differentiation between service and manufacturing companies, as well as the pie-chart adopted to visualize in which industries companies are working. In conclusion, univariate analysis aims at explaining the first section of the survey, thence the general information on the companies considered in the sample (see *Appendix B*) and how they react in the market by looking at the cash flow problems and other relevant situations.

Going on, both bivariate and multivariate analyses are considered to deeply analyze the illiquid assets and see whether Dicopay's app could solve it. The bivariate analysis is done by creating tables of correlations among the several variables in the different

sections of the survey. Although from Table 1 there is the description of the dataset by differentiating the dependent from the independent variables, the bivariate analysis has been statistically computed in order to see correlations and significance also among the independent variables only. The reason why the researcher has decided to do so can be explained by saying that the objective has been to find variables that affect each other. In particular, the bivariate analysis is computed to then create the multivariate, and in the latter, there are variables that are correlated among each other. Precisely, the multivariate analysis is used once the bivariate has explained correlations between variables. As can be seen from the R script (see *Appendix A*), all calculations have been done with the aim of finding variables that could explain the dependent variables. For this reason, the following sub-sections must be read by remembering that the univariate and bivariate analyses have found the relevant data that must be considered in the linear regressions in order to address the research questions and further test the hypotheses.

9.5. Conclusions

This section aims to explain the findings of this thesis by answering the research questions and simultaneously testing the hypotheses. The discussion is done in order to see whether the results differ from the background explained in the literature review. The conclusions consider the main results of the data analysis, trying to qualitatively assess the numbers obtained through the statistical analysis.

Old habits die slowly, meaning that new solutions should try to let people understand that they could be better off by shifting from the past to the future, and disruptors must be patient in waiting their time instead of trying to become successful from the beginning. The results in the previous section demonstrate that the main outcome in the factoring industry is that people are not 100% convinced by what their adoption is, thus they are actually looking for possible alternatives that would give them better financial stability. One possible suggestion that Haddad and Hornuf (2021) have given is that FinTech startups could easily tackle and successfully penetrate the market if they require fewer credit checks. Dicopay should consider the possibility to start running the market without requiring people to have a precise financial situation. The survey has shown indeed that people would not be inclined to change their payment habits if the new solution is stricter than the current adoption.

Dicopay is an app that, although some competitors offer the same solution, does not have similar characteristics because it is completely automatized. The latter is what Potapenko

(2010) highlights as the main source of competitive advantage, and results have shown that people with lateness in payments usually face cash flow problems, and they are inclined to embrace BNPL solutions. In other words, Dicopay has to move towards the resolution of cash flow problems, and only by successfully targeting the right market segments the company would be able to create an uncontested market space.

The title of this study is pretty clear, and the meaning is that Dicopay aims at tackling the illiquid assets problem arose by Klapper in 2006 for the first time. Illiquid assets are, in Klapper's eyes, non-collected revenues from already paid costs in the production processes. The sample has shown a high level of correlation between the reduction of illiquid assets and the adoption of BNPL solutions, which could already address some results, for instance, the possible impact of Dicopay in the Factoring system. Klapper (2006) has shown also how in the factoring system the main warranty is not anymore composed of real estate assets, but instead, it is a combination of receivables. The sample chosen has further confirmed this new trend since most companies adopting factoring solutions consider non-recurrent assets as the main warranty for factors.

The data analysis has further suggested that Soufani (2012) was right when he said that SMEs are more inclined to adopt factoring solutions when they have more invoices launched. As the sample has shown indeed, the higher the number of invoices, the better it is for companies to adopt factoring solutions, meaning that Dicopay could be successful for both new and already established companies. Nonetheless, a particular outcome in this sense is that organizations with high amounts of invoices are not well-matched with BNPL solutions. Hence, Dicopay should try to highlight to them that its offer is what could solve cash flow problems due to lateness in payments when sending invoices to consumers.

By having a focus on the BNPL aspect, it has been said in the background section that the main barrier, in this case, is the psychological aspect of facing costs afterwards. As reported by Siemens (2007), companies and customers feel better when they face costs before collecting revenues, which is the opposite of the offer from Dicopay. Nonetheless, it is reported from the data analysis that people are actually interested in this offer, such that they would be inclined to adopt a BNPL solution in case they have cash flow problems resulting from lateness in payments. Indeed, people have demonstrated to be more pushed by economic reasons than psychological ones, such that they would rather feel worse but with economic stability (Okada & Hoch, 2004).

In conclusion, it could be said that:

- Illiquid assets are extremely damageable for SMEs, from the linear regression it has been demonstrated that it is not so high as it should have been.
- All companies that provide services rather than goods as the core business, are the ones that would get the most out of the use of a BNPL solution. Then, the data analysis has pointed out that legal companies only have a higher impact on the overall service industry, thus the target here could be to be as much reliable as possible for lawyers, such that they would start adopting this solution to then create Word of Mouth and successfully penetrate the market. By doing so, Dicopay would be able to successfully penetrate the market and create the uncontested market space that the Blue Ocean strategy aims at. It is even peculiar to do so and there would be no competition because other companies providing this sort of solution have not started by targeting a precise segment.

All companies facing illiquidity due to lateness in payments have issues in terms of cash flow, impossibility to reinvest money, interest expenses due to possible finances, and so on and so forth. For this reason, illiquid assets are an issue that SMEs must deal with.

The second hypothesis is tested, and it is seen from the bivariate analysis that there is a strong correlation between illiquid assets and the inclination to adopt a BNPL solution. Hence, organizations may solve this issue through the use of Dicopay's app.

For what concerns the last hypothesis, the bivariate analysis is useful to understand that service companies are actually the ones more affected by a BNPL solution. In particular, it has been shown that all correlations increase by some percentages, and that is the reason why the linear regressions have been focused only on service companies rather than on the entire sample. Finally, the legal industry is one of the most influenced ones, thus also the third hypothesis is tested.