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Buy Now, Pay Later: International Market Analysis of the service providers

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ABSTRACT

This paper aims to provide an analysis of the current Buy Now, Pay Later (or BNPL) market. A digital payment method that has become widespread in recent years and allows customers to make purchases by deferring payment in convenient instalments. The reasons that led to this research mainly concern the need to quantify the current importance of BNPL and the composition of the related market. Furthermore, it is interesting to understand what are and what will be the effects of the diffusion of this new service both in the payment industry and in the credit industry. The main value of this paper is represented by the two researches conducted. The first contained in Chapter 1 (Literature) has the objective of defining the main characteristics of the BNPL mainly from the point of view of demand. The various aspects analysed concern the diffusion of the BNPL in the world, the customer profile and the type of use, the benefits generated by this payment method, the potential risks associated with this new form of credit, and finally the current legislative situation and its possible future developments. This section therefore reports the results obtained by researching and summarizing various reports, articles and news related to BNPL. The second research, reported in Chapter 3 (Analysis) is instead focused on the composition of the BNPL market from the point of view of supply. This analysis was conducted using data obtained from online databases, including Crunchbase, and information shared by the companies themselves via their websites and social media. This study was further divided into two sections, namely a census of the companies currently present in the BNPL market, and an analysis of the main characteristics of the identified companies and the services they offer. Finally, a further objective of this paper is to identify, through the data collected in the two researches carried out, what are the trends and possible evolutions of the BNPL industry and of the companies that compose this industry.

ABSTRACT in italiano

Questo elaborato ha come obiettivo fornire un'analisi dell'attuale mercato del Buy Now, Pay Later o BNPL. Un metodo di pagamento digitale diffuso negli ultimi anni che permette ai clienti di effettuare acquisti dilazionando il pagamento in comode rate. Le ragioni che hanno portato ad effettuare questa ricerca riguardano principalmente la necessità di quantificare l'odierna importanza del BNPL e la composizione del relativo mercato. Inoltre, è interessante comprendere quali sono e quali saranno gli effetti della diffusione di questo nuovo servizio sia nell'industria del pagamento, sia nell'industria del credito. Il valore principale di questo elaborato è rappresentato dalle due ricerche condotte. La prima contenuta nel Capitolo 1 (Letteratura) ha l'obiettivo di definire le maggiori caratteristiche del BNPL principalmente dal punto di vista della domanda. I vari aspetti analizzati riguardano la diffusione del BNPL nel mondo, il profilo dei clienti e il tipo di utilizzo, i benefici generati da questo metodo di pagamento, i potenziali rischi legati a questa nuova forma di credito, e infine la situazione legislativa attuale e i suoi possibili sviluppi futuri. Questa sezione riporta quindi i risultati ottenuti ricercando e riassumendo vari report, articoli e notizie riferiti al BNPL. La seconda ricerca, riportata nel Capitolo 3 (Analisi) è invece incentrata sulla composizione del mercato del BNPL dal punto di vista dell'offerta. Quest'analisi è stata condotta utilizzando dati ottenuti da database online, tra cui Crunchbase, e le informazioni diffuse dalle aziende stesse tramite i loro siti web e social media. Questo studio è stato ulteriormente suddiviso in due sezioni, ovvero un censimento delle aziende attualmente presenti nel mercato del BNPL, e un'analisi delle principali caratteristiche delle aziende identificate e dei servizi da loro offerti. Infine, un ulteriore obiettivo di questo elaborato è quindi quello di identificare, tramite i dati raccolti nelle due ricerche effettuate, quali sono le tendenze e le possibili evoluzioni dell'industria del BNPL e delle aziende che la compongono.

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EXECUTIVE SUMMARY

The payments industry in recent years has been transforming globally, new digital payment methods are emerging and are gradually stealing the place of traditional ones. Among the latest trends regarding digital payments stands out the boom of the "Buy Now, Pay Later", or BNPL. Buy Now, Pay Later is a type of short-term financing that allows consumers to spread the cost of a purchase over a predefined period of time, often interest-free. One of the first modern BNPL product was developed in 2005 by a Swedish company, Klarna. In the following years numerous BNPL services were launched, with characteristics and operating models in continuous evolution. The most common features of all these services are the zero or low cost for customers, the short-term repayments, the high accessibility and easiness of usage. The BNPL mechanism involves four actors, a customer, a retailer, a lender and a BNPL provider. The latter is the responsible of connecting all the other three actors, managing the customer's payment to the merchant with the found offered by the lender.

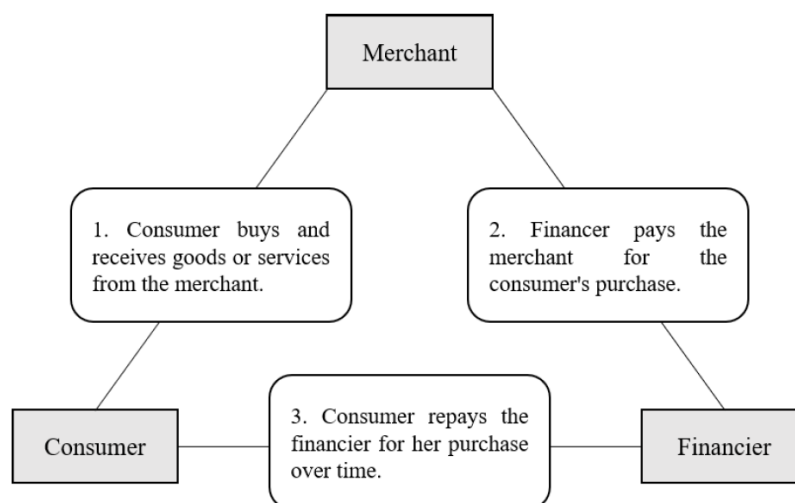


Figure 1 – BNPL typical process (Sng and Tan, 2022).

The BNPL market is currently valued at \$125.09 billion (market valuation in 2021) and is estimated to reach \$531.53 billion in 2025. While by 2030 it is forecasted to be worth around \$3.27 trillion (Howarth, 2022).

Studies estimates that 360 million people worldwide will use BNPL services in 2022. And that value is set to more than double over the next five years, reaching 900 million BNPL users in 2027 (Tetnowski, 2022).

The BNPL growing diffusion is strongly related to online sales, so the boom of ecommerce in the last years is one of the main causes of the penetration of this new payment method. The Covid-19 pandemic has significantly impacted everyday life and entire industries at a global level. The measures enforced to control the pandemic have triggered massive economic consequences, accelerating the use of online sales channels, digital payments, and embedded finance products. During this period ecommerce penetration of online sales over global retail sales passed from the 13,6% of 2019 to the 18% of 2020, and today it settles at 20,4% (International Trade Administration, 2021). This result is not only due to the temporary closure of the physical channels, but also to the increasing digitalization of customers and retailers. BNPL companies found themselves in the middle of this digital revolution and became strong contenders to traditional lending, helping customers during a period affected by unemployment and financial instability.

During 2021, BNPL was the fifth most used payment method for online purchases, representing the 3% of global ecommerce sales, and this penetration is forecasted to reach 5% by 2025 (Worldpay, 2022). BNPL penetration varies by countries. It became particularly popular in northern Europe countries, such as Sweden, Norway, or Germany but its penetration is also growing in the rest of the world. Currently BNPL is the second payment method used for online purchases in Germany, Netherlands, and Norway. While it is the first payment method in Sweden, where it represents 25% of all online sales (Worldpay, 2022). It is therefore currently possible to identify four leading BNPL geographical markets:

- Europe, that is probably the most important and mature market in this moment.
- United States, that is a fast-growing market with the highest market size.
- United Kingdom, a market characterised by a good and growing penetration.
- Oceanian areas, that presently is the second most important market in term of BNPL penetration.

As concern the typical customers, due to its digital nature and diffusion in online commerce, the BNPL is particularly popular among young individuals. Millennials and customers from Gen Z lead the ranking of major users. Despite that, BNPL in recent years is spreading even among the most mature people (Mambu and Deloitte, 2022). Furthermore, this payment method, despite its credit nature, is mainly diffused among individuals with good economic situation and stable annual income.

In fact, contrary to the common thought, i.e. that the BNPL is mainly used for unaffordable purchases, in reality about half of the customers who carry out BNPL transactions have sufficient funds to cover at least 5 times the amount of this transaction (CB Insights, 2021). Furthermore, the Average Order Value is lower than £100 (Tijssen and Garner, 2021), and the average monthly expenses are generally lower than \$250 (C+R Research, 2021). So, the BNPL is a payment method used principally for purchases of low-medium economic value and with a low monthly frequency, customers use BNPL on average from 1 to 4 times a year (Tijssen and Garner, 2021).

The reasons that drive customers to use this credit product are various, among the main ones it is possible to identify:

- It has low cost, especially compared to traditional credit product, such as credit cards.
- It is a simple mean to make unaffordable purchases.
- It helps to manage finances.
- It has a fast, easy, and intuitive process.
- It can be used also to customers with poor credit history or bad economic situation, thanks to the softer credit check applied and its high acceptance rate.

The beneficial effects created by this payment method have also an important impact to partner merchants. It is demonstrated that offering a BNPL option at the checkout brings several benefits for the retailers, among them the most relevant are:

- An increase in sales, caused by an increase in the conversion rate and average order value.
- An increase in the customers acquisition, due by the exposition of the retailer brand to new customers arriving from the BNPL providers' channels.
- An increase in customer satisfaction and loyalty.
- An increase in the cost savings, due to the reduction of fraud risk and the shifting of some activities like customer support or return management to the BNPL provider.

So, the BNPL products bring several benefits to their users and retailers, having positive effects on the overall welfare. Despite that, it is important to remark that, like any form of credit, BNPL could also bring risks to consumers. The most relevant is a risk of debt spirals across multiple BNPL providers. Currently customers can easily access to BNPL credit and additionally BNPL providers do not share information about existing transactions with customers, so there is a significant risk that users intentionally or inadvertently accumulate debt across multiple providers until it will become unaffordable. Another risk concerns the customers' defaults and missing payments. During 2021, 16% of UK BNPL users had missed a payment and 15% had missed more than one (Tijssen and

Garner, 2021). The situation is even worse in the US market where studies report that 43% of users in 2021 had made a late payment (Schulz, 2022) and 72% of consumers, who have used BNPL solutions and missed a payment, have reported a decline in their credit scores (Lux and Hepps, 2022). The default rates vary by BNPL provider, but are generally low, ranging from 1% to 5% (Tijssen and Garner, 2021). Although the customers default risk is limited, it can have a significant economic impact on financially weaker customers, also deteriorating their credit score and future ability to borrow. Finally, impulse purchasing represents the third main risk related to BNPL. Common criticisms of BNPL claimed that this payment method can cause an irresponsible spending, issue that can be particularly problematic especially for younger or financially vulnerable customers.

The risks related to BNPL are not only focused on customers, but they also affect BNPL providers. Until now BNPL leading firms has registered incredible levels of growth in term of users and market valuation, also facilitated by favourable market conditions. But now this favourable environment is changing, the competition is increasing (decreasing the revenue margin), the regulators are willing to introduces new strictest laws (increasing the cost needed to be compliant), and the fundraising became harder since investors are sceptical about BNPL profitability. The impact of these factors could be very drastic among BNPL pure players. Cost reduction, diversification and acquisitions are the main remedies for this possible future “crisis” of BNPL.

Most of the risk that threaten the BNPL users are caused by the scarce and extremely basilar regulations imposed at this industry. In fact, thanks to its nature and unique characteristics in the credit market – i.e. no cost applied to consumers, provision of credit for low value transaction, and short-term repayments – the BNPL is currently excluded from most of the laws applied to traditional credit products. For this reason, in the many countries where BNPL has become a rather widespread payment method, financial authorities and regulators are starting to discuss and introduce regulatory frameworks with the aim of increasing consumer protection. Currently, the most advantaged nations on this front are the United Kingdom and the European Union, which are evaluating possible regulatory frameworks to be introduced in the coming years. Other nations, like Australia had temporarily opted for a self-regulation of the BNPL providers, while all the remaining countries are instead more reluctant to urgently introduce laws that regulate the BNPL market, since the still limited diffusion of this payment method in the relative territories does not make it a significant risk.

Methodology

The aim of this research and analysis conducted is to create a census of the companies that operates

in the BNPL market and identify the main characteristics that define this industry. This objective was carried out by developing a database that contain all the relevant information about all the BNPL companies identified and the BNPL services offered on the market.

The first step of this process was the compilation of a list of all companies offering BNPL solutions. This census was developed between July 2022 and September 2022, and three main sources were used in this process: Crunchbase, an online platform that provide business information about private and public companies; the BNPL census conducted by Politecnico di Milano students in 2021; and online materials including reports, web articles, news reported by the Osservatori Digital Innovation of Politecnico di Milano, and other online databases. The result of this first step was the identification of a list of 300 different companies that offered BNPL products.

The second step of this research was the creation of an Excel database containing all the relevant information about the 300 companies listed in the census and the services that they offer. This database was fulfilled using three main sources: Crunchbase, the companies' websites, and the companies' social media (including LinkedIn, Facebook and Instagram). The first part of the database is an Excel paper that contains 27 different variables describing the 300 companies founded in the census. These variables describe features such as the company type, the date in which the company entered in the BNPL market, the areas of operations, the mechanism through which they offer the BNPL solutions, the type of BNPL solutions offered, the type of customers addressed, the channel where they operate, and other general characteristics of the solutions offered by these BNPL providers. The second part of the database is an Excel paper that contains different variables describing all the different services offered by the 300 companies founded in the census. The number of services analysed is 402, a value higher than the number of companies, since a firm can provide one or more BNPL services at the same time. These variables include data about the type of service offered, the repayment schedule, the revenue model, the fee structures and other characteristics of the BNPL services analysed.

The third and final step was finally an extraction of the most relevant information from the database created using pivot tables. Initially for each variable was created a graph representing the frequency of all the possible values that the considered variable could assume. Then the second step was the creation of additional graphs for each variable adding filters based on the values of other variables. Finally, among all graphs obtained, the most interesting and relevant were selected and reported in the Analysis Chapter.

Analysis

Currently 300 companies have been identified offering BNPL services across the market. These companies offer 402 BNPL services, which differ in repayment schedules or fee structure. BNPL is a rapidly growing market, in fact it is since 2013 that the number of companies joining this industry has been increasing year by year. As shown in the graph below, the greatest growth has been seen in recent years, from 2019 onwards.

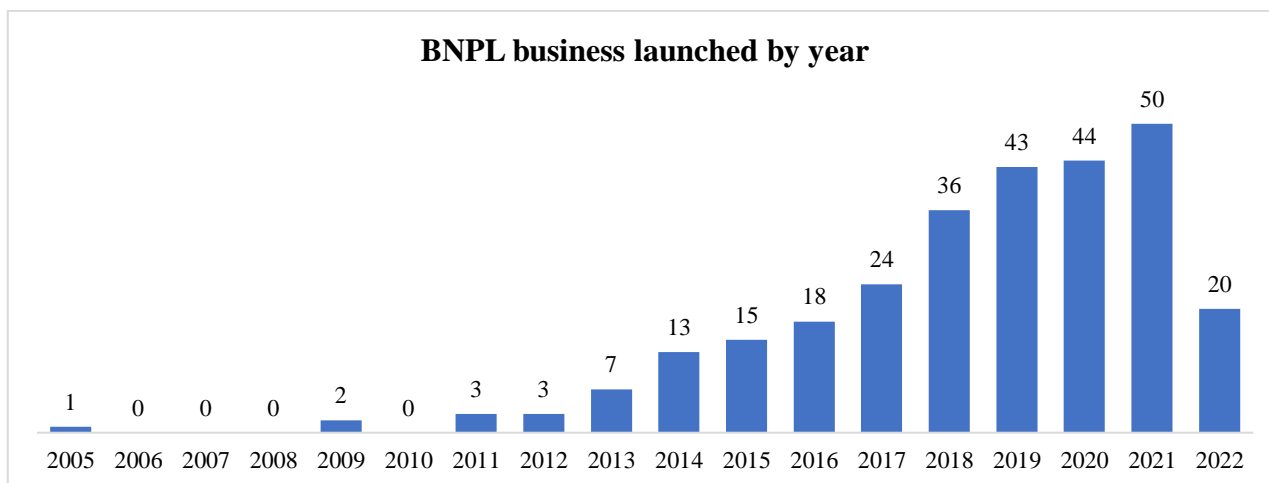


Figure 2 – Number of firms that launched their first BNPL product each year, from 2005 to half 2022. Basis of 279 companies for which is known when the first BNPL service is launched.

Currently almost 2/3 of the BNPL market is made up of FinTech companies, and most of them offer BNPL as their core business. The rest of the market is very fragmented made up of various types of companies. Despite this market composition, data about new entrants in the last years shows that BNPL is gradually becoming a topic of interest also for companies from other industry, such as traditional credit industry, payment industry or retail industry. Another important characteristic of the BNPL market concerns the important presence of start-ups. In fact, on a basis of 294 companies offering BNPL services, it was found that 126 of them are start-ups. This data shows how BNPL still has a young market, characterised by new companies and innovation.

Presently BNPL is a payment method widespread in almost the whole world, however there are great differences between the various countries both in terms of use by customers and in terms of the services offered. The following graph shows the number of companies offering BNPL solutions in different regions of the world. The darkest areas identify those countries that have a high number of BNPL providers, while the lighter areas identify those that have a low number of providers. The absolute leaders of this ranking are Europe and the United States, both registering the presence of 55 different BNPL providers in their territory.

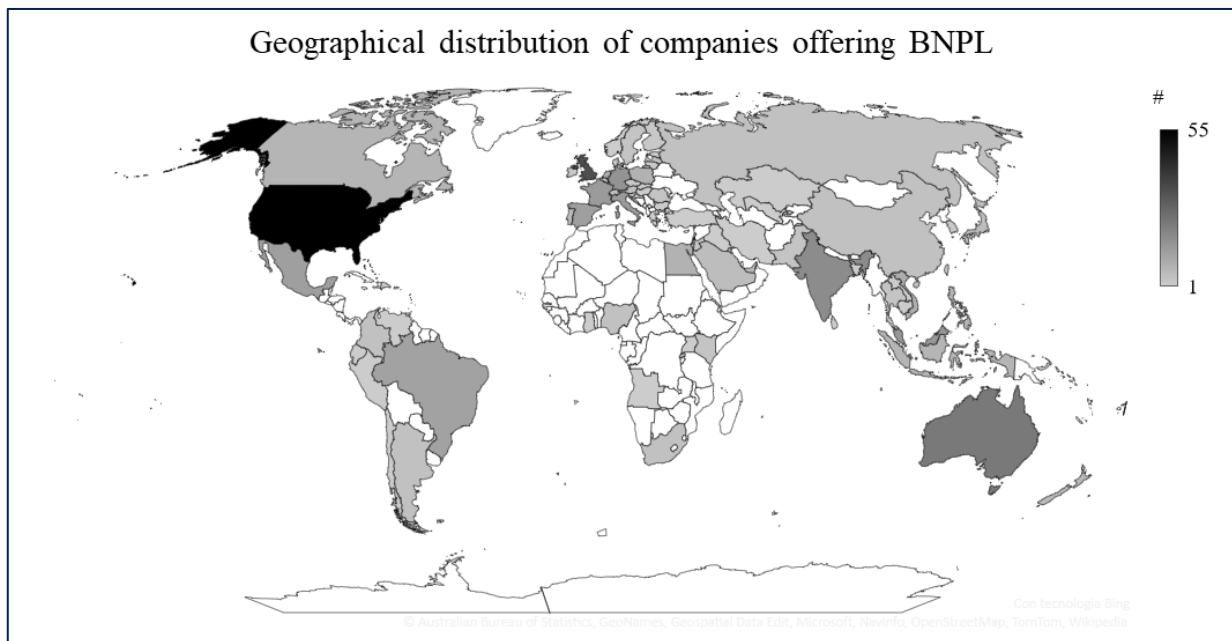


Figure 3 – Geographical distribution of BNPL providers. Graph obtained by a basis of 258 companies for which are known the areas of operations. The detail about companies present in the single countries are reported in the table below.

Comparing the number of new entrants on the BNPL markets in the different nations year by year, a strong increase in the number of BNPL players was recorder between 2019 and 2021 in almost all geographical areas. Confirming that the strong growth trend of BNPL not only from the point of view of demand, but also from the offer.

As concern the main characteristics of the BNPL companies analysed, it was found that most of them collaborate with partner merchants of various industries, integrating their BNPL option directly in the partner merchant checkout (even at POS). At the same time, however, BNPL options activated by card (virtual card, debit card or credit card) are spreading, allowing customers to carry out BNPL transactions with any merchant. Typically, the BNPL solutions were offered for online purchases, but an omnichannel offer has begun to spread more and more among BNPL companies. Currently in fact more than half of companies analysed operates on both online and physical channels. Finally, it was found that most companies operate in the B2C market, mainly offering deferred payment services in instalments. At the same time, it was registered an increase in companies that operates within business customers. In these cases, the offer varies (compared to the B2C market) to better adapt to the needs of B2B customers, in fact the BNPL providers in this market mainly offer options to postpone a payment that then will be made in a single solution.

Finally, as concerns the revenue models and the repayment schedules it was found that the main source of revenues for the BNPL providers are the partner merchant. In fact, 85% of services analysed apply fees to the retailer. These fees are computed as a percentage, generally between 1.5% and 7.4%,

applied to each BNPL transaction. On the other hand, the application of fee to customers varies by services depending on the repayment term of credit offered. The BNPL services can be divided into three main categories, short-term, mid-term and long-term solutions. The short-term options are the most diffused among providers, they are characterised by repayment terms that do not exceed 4 months and in most of the cases are offered for free to customers. The mid-term services are the second most spread options, they have a duration that range from 5 to 12 months and more than 2/3 of them apply fees or other costs to their customers. Finally, the long-term options are the less diffused among BNPL firms, although 25% of BNPL providers offer these services. The duration of these credit is higher than 12 months and the most common repayment terms are 24 or 36 months. Almost all these services apply fees or other costs to their users. Typically, the costs applied to customers are expressed in annual percentage rate and they range from 0% to 36%.

Conclusions

In conclusion, the BNPL is a market in expansion, both in terms of offer and demand. The usage of this payment method exploded especially during 2019 and 2020, in a period characterised by the Covid-19 pandemic that brings to definitive explosion of ecommerce, since the BNPL was created primarily as a credit product for making online purchases. The diffusion of this credit product changes in the different geographical areas. Europe, United States, United Kingdom, and Australia currently represent the most important BNPL markets both in term of usage by customers, that in term of number of provider active in the market.

The main limitations of this paper are mainly related to the absence of all the needed information in the sources utilised. In fact, missing data and incomplete data makes not possible to identify all the values for the variables reported in the database. The greater lack of information was found among the fees structure (especially the merchant fees), the variables analysed during the credit assessment and the consequences in case of customers' default.

Finally, it is hard to define the future of the BNPL market, but some relevant trend that describe the possible evolution of this industry can be identified. Among them the most relevant are the differentiation of BNPL pure players' business; the expansion of BNPL offers to physical channel and B2B customers; the introduction of new features like white labelled options; the expansion in new geographical markets; and the entrance in the market of established companies from the payment industry, the credit industry and the retail industry.

1. LITERATURE

The payments industry in recent years has been transforming globally, new payment methods are emerging and are gradually stealing the place of traditional ones. This revolution is mainly linked to a growing necessity of digitalization embraced by businesses, consumers and even institutions. Cash and other traditional payment methods are now giving way to new and technologically advanced methods, called digital payments.

The term digital payments represent the transfer of value from a payment account to another using a digital device. Among the latest trends regarding digital payments stands out the boom of the "Buy Now, Pay Later", or BNPL. It is a business closely linked to the ecommerce world and for this reason became extremely popular in the last years among consumers, allowing them to buy products by deferring the payment on various instalment options, with interest rates low or none.

The following chapters will focus on an in-depth analysis of BNPL, mainly considering its characteristics, its penetration and the benefits generated by this new form of credit. Finally, the legislative side and the risks linked to this payment solution will also be analysed.

1.1 BNPL INTRODUCTION & STATISTICS

Buy Now, Pay Later is a type of short-term financing that allows consumers to spread the cost of a purchase over a predefined period of time, often interest-free. Despite the diffusion of this payment method occurred in recent times, the provision of consumer credit is an age-old phenomenon from the early forms of pawnbroking, instalment sales and moneylending, to the development of hire-purchase structures in the early 19th century. The true global diffusion of the BNPL took place almost two centuries later, in the 21st century. In fact, following the digitization and the growing use of online commerce, new type of companies, called FinTech, began to provide solutions that allowed merchants to offer instalment plans directly integrated in the payment flow of their online stores. One

of the first modern BNPL providers is a Swedish company, Klarna. Its first ever transaction took place on 10 April of 2005, at a bookshop called Pocket Klubben. In the following years numerous BNPL services were launched, with characteristics and operating models in continuous evolution.

1.1.1. General features

There are no strict standards that defines what are the characteristics and functioning mechanisms of a BNPL service, as each company offers a different service from the others. However, despite that, it is possible to identify some fundamental and recurring features that allow to define a credit product as Buy Now, Pay Later.

The first feature is the cost-effectiveness for the consumer, in fact most of the times the cost incurred by end customers to use the service is zero or involves very low commissions. This is because the costs of the “loan” in most cases are shared between customers and merchants or are exclusively borne by the latter. This feature also differentiates BNPL from other financing methods, including personal loans and credit cards which generally include interest charged mainly to end customers and are therefore more expensive for them.

The second characteristic is the short duration of the loan, in fact in most cases the payment is deferred in a few months, 3 or 4 for low-mid purchases, or in 12 months for more expensive purchases. This point also marks a difference with traditional financing methods which usually have a longer duration, e.g., for personal loan the duration ranges from 1 to 10 years.

The third fundamental feature is accessibility, in fact, unlike in other types of credit, BNPL companies usually does not carry out hard credit checks but uses softer controls which allows customers with non-perfect economic situation or poor credit history to access a financing. Furthermore, the real-time credit assessment requires only few minutes to approve the credit extension, thanks to the several innovative approaches for customers evaluation developed by BNPL companies, such as aggregating owned users’ data to build proprietary credit information and assessment models. This makes BNPL credit approval process one of the faster over the credit industry, in contrast with traditional financing methods, where the application procedure is more complex and much longer for customers. Finally, BNPL services are typically integrated at the partner merchant website checkout, so for the customers it is easy to select and use BNPL as any other common payment method such as credit cards, debit cards or digital wallets.

1.1.2. Process

As for the above features, there is not a unique functioning method for all BNPL services. Despite that, it is possible to outline the more recurrent criteria that can be found in most of the BNPL products. The classic BNPL mechanism is similar to that of a platform, since the BNPL provider acts as a mediator between the several actors involved in the process. This mechanism includes four roles or parts:

- Merchants who sell products or services and wish to offer their customers the possibility of deferring payments, without assuming the risks relating to the collection of credit.
- Customers who purchase goods and services from merchants and wish to make a deferred payment.
- Lenders, they typically are banks or financial company that provides the money for the loan.
- BNPL provider, who is the responsible for connecting the other three actors involved in the service and managing the customers' debt repayment.

The process starts when a customer decides to buy a product on an ecommerce website. For various reasons – such as high cost or low credit card availability – the customer decides to take advantage of the possibility offered by the merchant to purchase the product in instalments by selecting it as a payment method at checkout. At this point, the BNPL provider enters into the process by carrying out a check on the purchaser's credit and solvency capacity. These checks, usually, have no impact on the customer's credit profile and in a few minutes, they offer an acceptance or refusal response to the service. Therefore, if the credit request is accepted, the order is confirmed and the BNPL provider, with the funds made available by the lender, transfers the total amount of the purchase, less any commissions, to the merchant within a couple of days. Subsequently, it will be up to the BNPL provider to manage the collection of instalments paid by the customer to repay the lender.

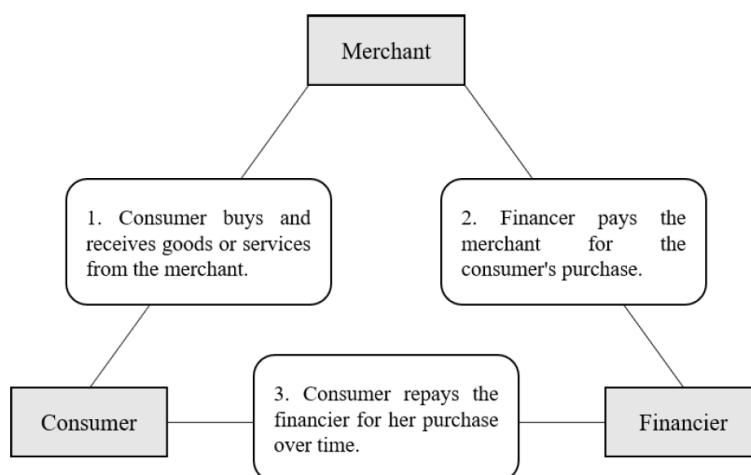


Figure 4 – BNPL typical process (Sng and Tan, 2022).

BNPL services can be divided into two main types based on the repayment length. The first category is characterised by short duration, no longer than 4 months, and typically have no cost for the customers. Among them, the most common surely are “Pay in 3” and “Pay in 4”, in which the customers can spread the costs of their purchases into 3 or 4 instalments. The second category is characterised by longer duration and usually require monthly repayment plus interests, computed as a percentage of the instalment due each month. The duration of these contract usually ranges from 12 to 36 months, and generally are offered for more expensive purchases.

1.1.3. Market size and driver for diffusion

BNPL is one of the latest trends in the payments market, in 2020 its market was valued at \$87.2 billion. It grew to \$125.09 billion (+43%) in 2021 and is estimated to reach \$179.5 billion in 2022. By 2025, this value is predicted to almost triple to \$531.53 billion, and by 2030 the BNPL market is forecasted to be worth around \$3.27 trillion (Howarth, 2022).

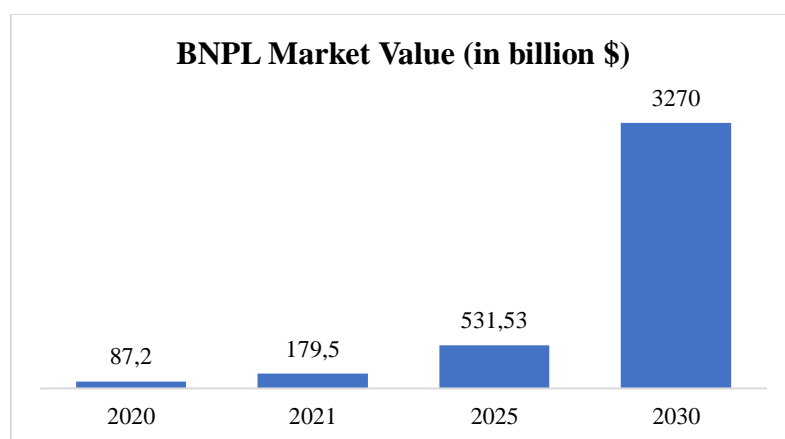


Figure 5 - BNPL Market Value (Howarth, 2022).

A study from Juniper Research estimates that 360 million people worldwide will use BNPL services in 2022. And that estimation is set to more than double over the next five years, reaching 900 million BNPL users in 2027, an increase of 157% (Tetnowski, 2022).

To understand the growing diffusion of this new payment method, first of all it is necessary to analyse its context. BNPL is strongly related to online sales, so the growth of ecommerce in the last years is one of the main causes of the penetration of this new payment method.

The Covid-19 pandemic has significantly impacted everyday life and entire industries at a global level. The measures enforced to control the pandemic have triggered massive economic consequences, accelerating the use of digital payments and embedded finance products. The

ecommerce share on total retail sales was increasing year by year even before the pandemic, however, is during the spread of Covid-19 that ecommerce recorded its greatest growth. During this period ecommerce penetration over global retail sales passed from the 13,6% of 2019 to the 18% of 2020 (International Trade Administration, 2021). This result is not only due to the temporary closure of the physical channels, but also to the increasing digitalization of customers and retailers. Many customers, especially the younger, start to use ecommerce for a significant part of their purchases due to its benefits such as a wide selection or lower prices. While retailers, even those most reluctant to digital, during this period of economic difficulty, have understood the importance of using online sales channels and have started investing in them. Proof of this is the fact that ecommerce growth has not slowed down in the years following the pandemic and is expected to reach 21,80% of total retail sales by 2024 (International Trade Administration, 2021).

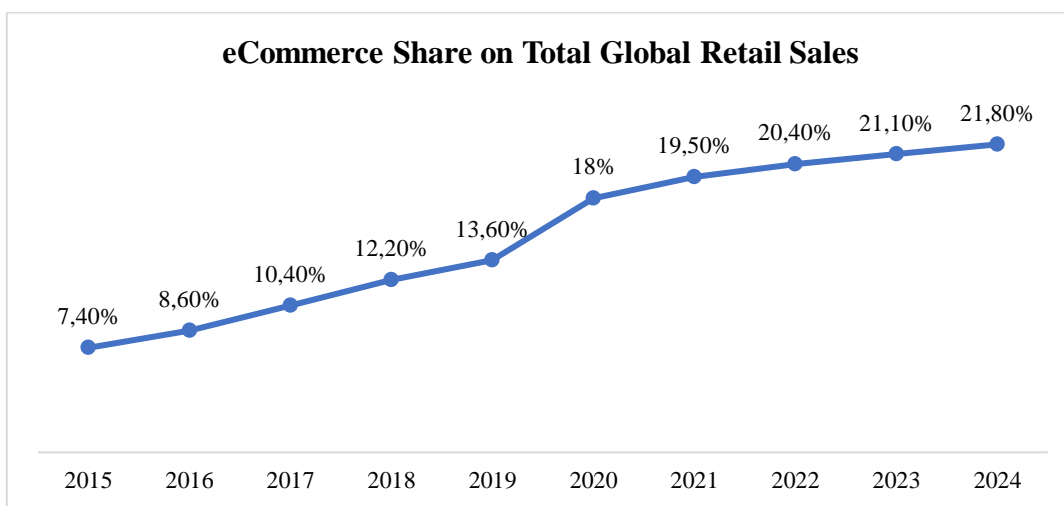


Figure 6 – eCommerce penetration over global retail sales (International Trade Administration, 2021).

Growth of ecommerce and digitalization has enabled the emergence of numerous new FinTech companies. These companies have, in turn, driven innovation and helped merchants build new markets and offer new and improved form of payments. BNPL companies found themselves in the middle of this digital revolution. They became strong contenders to traditional lending, helping customers during a period affected by unemployment and financial instability.

The graphs below show the most diffused payment methods for ecommerce and POS purchases at a global level. BNPL show a good penetration among ecommerce, it resulted to be the fifth most used payment method, accounting for 3% of sales in 2021, and it is predicted that this value will grow to 5% by 2025. A particularly significant result considering that for most of the other payment methods, except for digital wallets, a decline is expected in the coming years.

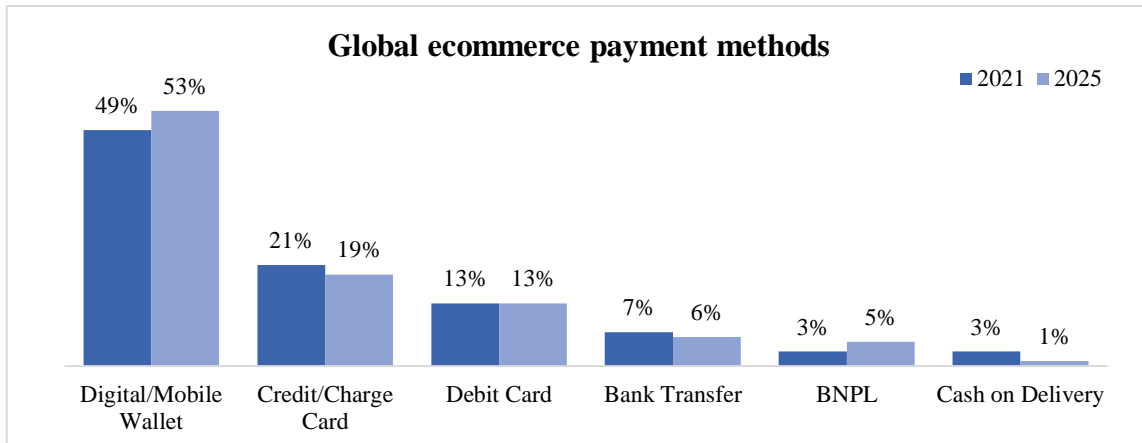


Figure 7 – Payment methods more diffused in global ecommerce (Worldpay, 2022)

The growth of BNPL is even more impressive considering that BNPL accounted for just 0.4% of global ecommerce payments in 2016. While it is during the initial phases of the pandemic in 2019, when the BNPL has spread by quadrupling its share to 1.9% (Fong, 2021). These results are mainly driven by two markets, the European one in which BNPL accounts for 8% of online payments, and the North American one in which it stands at 4%. In both markets BNPL is the fourth most used payment method in online purchases and a great growth is expected that will respectively lead to a share of 12% in Europe and 9% in North America. In other areas BNPL penetration is still low, 1% in Asia-Pacific, Middle East and Africa, while it does not even reach 1% in Latin America. But even in these cases growth is expected, which will lead to a 2% penetration in Asia-Pacific and Latin America by 2025 (Worldpay, 2022).

On the other hand, considering the most common payment methods in physical stores, the BNPL records a very low penetration figure. In fact, in 2021, only 1% of payments globally were made through BNPL. However, even in this case, BNPL is one of the few payment methods among those reported for which growth is expected in the coming years.

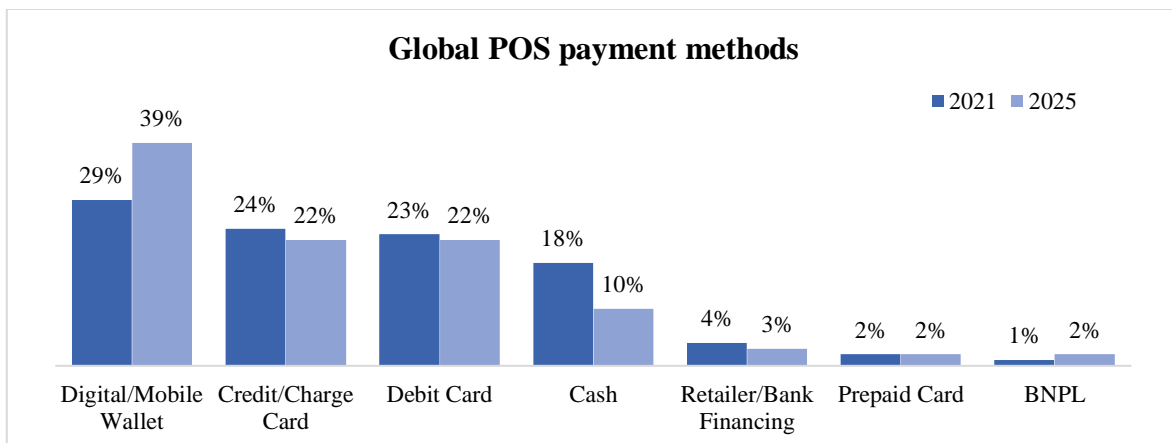


Figure 8 - Payment methods more diffused in global POS (Worldpay, 2022).

These data show how the more traditional payment methods are giving way to new digital payment methods, including digital wallets and BNPL, both in physical and digital channels. Moreover, it is possible to observe how BNPL is currently mainly linked to ecommerce, but despite that many players are focusing on omnichannel, trying to reap the share also in the POS payments market.

1.1.4. Geographical diffusion

BNPL penetration, measured in term of percentage of ecommerce payments, varies by countries. It became particularly popular in northern Europe countries, such as Sweden, Norway, or Germany but its penetration is also growing in the rest of the world, as shown in the table below.

	2016	2019	2020	2021
Sweden	12%	25%	23%	25%
Germany	3%	18%	19%	20%
Norway	5%	13%	15%	18%
Finland	-	8%	12%	13%
Netherlands	6%	8%	9%	12%
Denmark	5%	7%	8%	12%
Australia	-	8%	10%	11%
New Zealand	-	-	10%	10%
Belgium	5%	6%	7%	9%
United Kingdom	1%	3%	5%	6%
France	1%	2%	4%	4%
Singapore	-	-	3%	4%
Italy, United States	-	1%	2%	4%
Malaysia	-	-	-	4%
Japan	-	2%	3%	3%
India, Indonesia	-	-	3%	3%
Canada	-	-	-	3%
Philippines	-	-	3%	2%
Spain	-	1%	2%	2%
Poland	-	-	2%	2%
Republic of Ireland	-	-	-	2%
Global	0.4%	1.6%	2.1%	3.0%

Table 1 - BNPL penetration over ecommerce sales by different countries, in percentage (Fong, 2021).

As can be seen from the table, the first six positions are all occupied by countries of northern Europe where the BNPL began its diffusion earlier. Already in 2016, BNPL accounted for more than 10% of ecommerce payments in Sweden, and exceeded the 5% threshold in Norway, Netherlands, Denmark, and Belgium. Currently BNPL is the second payment method used for online purchases in Germany, Netherlands, and Norway. While it is the first payment method in Sweden (Worldpay, 2022). It is important to consider that in the European area the economic and cultural differences between the various countries can be significant, this explains why countries belonging to the same geographical area have such different values. An example is Poland, for which the BNPL penetration level is 2%, one tenth of that of neighbouring Germany.

This great difference between northern European countries and the rest of the world may be due to various factors, among them the most important are probably two. The first one is the propensity towards digital and innovation. In 2016 the European Commission published the European framework for the evaluation of the innovation. It highlights that innovation in Europe has gained ground compared to Japan and the United States, and in particular the Nordic countries, including Sweden, Denmark, Finland, Germany, and Netherlands, are the leaders in European innovation (TechEconomy, 2016). As for digitization, according to the 2016 Boston Consulting Group's Digitizing Europe study, the economies of the Nordic countries are characterized by a relatively small population with high levels of digitization and an innovative market. Furthermore, in 2017 the World Economic Forum created the Digital Evolution Index and analysed digital evolution in 60 countries, evaluating about 170 indicators. Most of the countries in the north Europe are defined as “Stall Out”, that mean countries with a high rate of digital advancement, strive to reinvent themselves and encourage innovation (Marino, 2017).

The second fundamental factor to explain this gap is a time factor, in fact in the European Nordic countries, real BNPL services started to spread around 2005, with the birth of Klarna. As for the rest of the world, however, the diffusion of real BNPL services takes place around the following decade. In fact, the first large B2C BNPL providers, like Affirm and Zip, were founded between 2011 and 2013.

Going back to analysing the subsequent positions in the ranking, it is possible to identify four geographical areas of interest in the diffusion of BNPL.

- Europe is probably the most important and mature market in this moment. In European market BNPL solutions have found fertile ground, and now they are accounting for 8.1% of European ecommerce spend (Worldpay, 2022). As discussed before, the penetration is particularly high

in Nordic countries like Sweden, Norway, and Germany. But also for southern Europe – including France, Italy, and Spain – the BNPL usage is growing. Italy and France recorded a 4% penetration, while Spain a lower 2%. All those countries registered a growth from 2019, but only in Italy the penetration increased between 2020 and 2021. The overall European market was dominated for long period by the BNPL giant Klarna, but new global and local players have recently emerged and grown in popularity, including Scalapay, Alma, Twisto, and Clearpay.

- The United States are the largest BNPL market, in term of market value. Despite that the BNPL penetration in US is only at 4%. This is because here BNPL services have spread only in recent years, however, recording a fast growth, going from the 1% of 2019 to the 4% of 2021. This growth is expected to continue, with BNPL payments reaching 10% of ecommerce payments by 2024 (Accenture, 2021). A very important result considering also that the value of retail ecommerce in the US is much higher than the one of the other countries in the table. In fact, in 2021 it is around \$843.15 billion, while the remaining nations do not exceed \$169.02 billion - ecommerce sales in the United Kingdom (Oberlo, 2022). Although BNPL is currently a small portion of the overall payments in the US, it is already significant in some key categories, such as online fashion retail that register a BNPL penetration of 12% (Accenture, 2021). To date, the US market has been largely dominated by five major BNPL players - Afterpay, Klarna, Affirm, Sezzle, and Quadpay. While new entrants like Sunbit, Scratchpay, and Uplift are gaining successful results by targeting niche segments.
- The United Kingdom alone is one of the most important BNPL market, with 6% of share. This penetration is still lower compared to neighbouring countries of North Europe, but also in this case the growth is constant over the years, starting from 1% of the 2016. Last year, almost a third of UK consumers used BNPL services and studies estimates that transactions will grow 29% year-on-year doubling the market share by 2024 (Worldpay, 2022). In this market can be found five leading BNPL players – Klarna, PayPal and the Australians Afterpay, Laybuy and Zip.
- The last market is made by the Oceanian areas, which includes Australia and New Zealand. In this area the penetration of BNPL is high, 10-11%, not much lower compared to some north European countries, in the period from 2019 onwards. Here, among the most relevant BNPL players, it can be found the Australian native Afterpay, Laybuy, Openpay, and Zip.

For what concerns other geographical areas, the BNPL diffusion in Asia is still relatively low, registering an overall penetration of 1% (Worldpay, 2022). However, focusing on individual countries, it is possible to identify some relatively important BNPL markets. These include Singapore,

Malaysia, Japan, India, Indonesia and the Philippines. In these countries it is possible to observe variegated situation characterised by different penetration ranging between 2% and 4%, but unlike occidental markets the level of growth is lower. Only Singapore records a growth greater than 1% between 2020 and 2021. Finally, for which concern the rest of the world – in particular South America, Africa, Middle East, and Russia – the current penetration of BNPL is very low, 1% or less (Worldpay, 2022). A possible cause can be found into the fact that all these areas show a low level of digitization or an economy that is still developing.

1.1.5. Customer Profile

Due to its digital nature and its diffusion in online commerce, the BNPL has been a payment method appreciated mainly by young people since its inception, in fact, Gen Z customers lead the ranking of major users. Despite that, BNPL in recent years is spreading even among the most mature people. The graph below shows the penetration of BNPL among US customers from different generation.

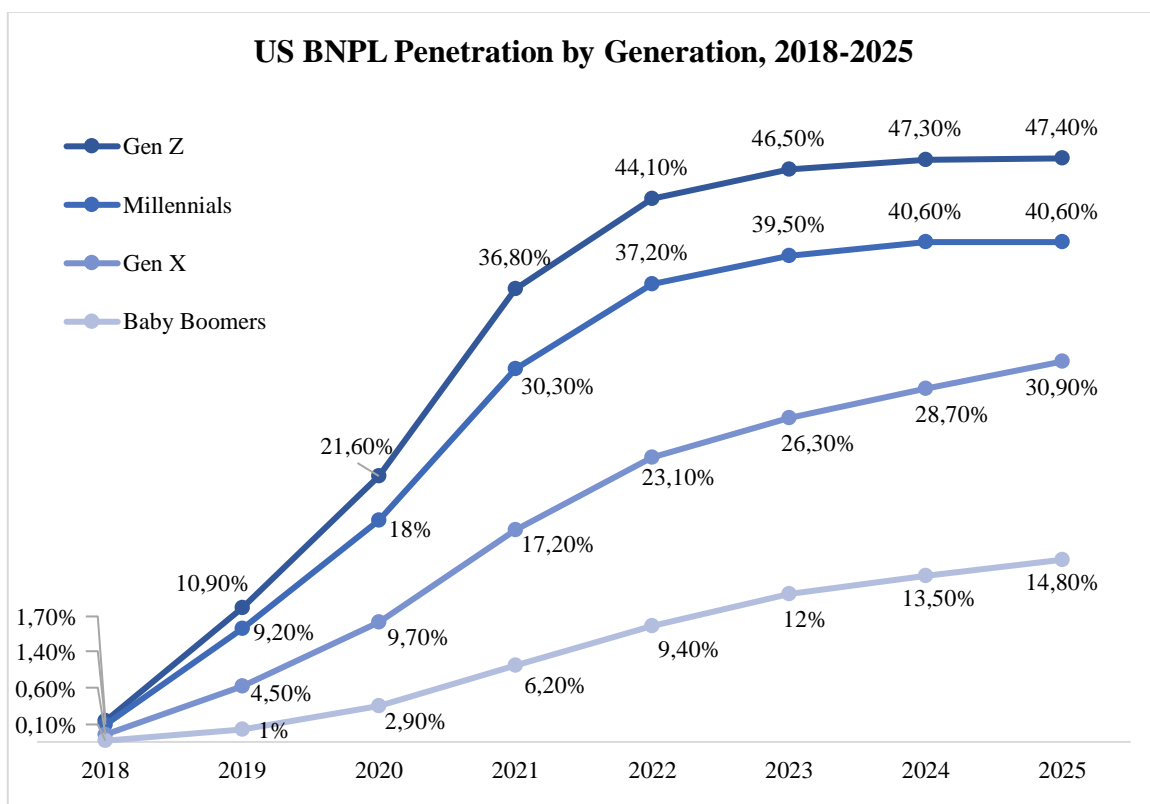


Figure 9 – BNPL penetration for consumers from different age group in the US (Mambu and Deloitte, 2022).

People from Gen Z are the most likely to use BNPL services, in fact 36,8% have used it one or more time during 2021. Similar results can be found among Millennials, where the penetration of BNPL stands at 30,3%. Both groups have seen a great growth in the use of BNPL in recent years, especially

between 2020 and 2021 where was recorded an increase of 15,2 and 12,3 percentage points respectively. This growth is expected to continue in subsequent years, in fact it is estimated that 47.4% of Gen Z and 40.6% of Millennials in 2025 will be BNPL users. Shifting the attention towards Gen X – i.e. those born between 1965 and 1980 – it is possible to note how the growth in the use of BNPL is similar to that which occurred in the two subsequent generations, but resulting in a smaller extent. In 2021, 17.2% of people from Gen X have used BNPL services and this figure is expected to reach 30.9% in 2025. The people less accustomed to the use of BNPL are the Baby boomers, i.e. people aged between 56 and 74 years, in fact only 6,2% are BNPL users. These customers are still tied to more traditional forms of payment and are less inclined to use online commerce than the new generations. Despite that, even among Baby boomers there is an increasing use of BNPL services over the years and it is expected that by 2025 the penetration will reach 14.6%.

BNPL is generally considered to be a service that points principally younger generations with limited spending power, who typically use it to spread payments of expensive or unaffordable purchases. This belief is partially wrong, in fact, if it is true that many young people use BNPL due to their limited finances, it is also true that this payment method is more widespread among customers with stable earnings and a good economic situation. More or less 50% of households with an annual income between \$50,000 and \$75,000 are BNPL users, this indicator drops to 47% among those who have an annual income between \$30,000 and \$50,000, while for those who earn less than \$30,000 per year the penetration of the BNPL drops to 39%. Finally, it is interesting to note that even among the wealthiest people – annual income over \$100,000 – BNPL is still very widespread, with a penetration of 41% (Schulz, 2022).

1.1.6. Usage

Despite BNPL, as a form of credit, is often used for otherwise unaffordable purchases, recent studies show that in most cases customers opt for the use of BNPL even though they are largely able to pay the full purchase price. Data collected by the major BNPL players show that more or less one BNPL user over four do not have enough money in the bank to cover the price of its purchase, while over half of users could cover an amount equal or higher than five times the purchase price. (CB Insights, 2021).

The data summarized in the following figure show how BNPL is not only a form of credit to be used for unaffordable purchases but is also considered by many as a real alternative to traditional payment methods, especially for online purchases.

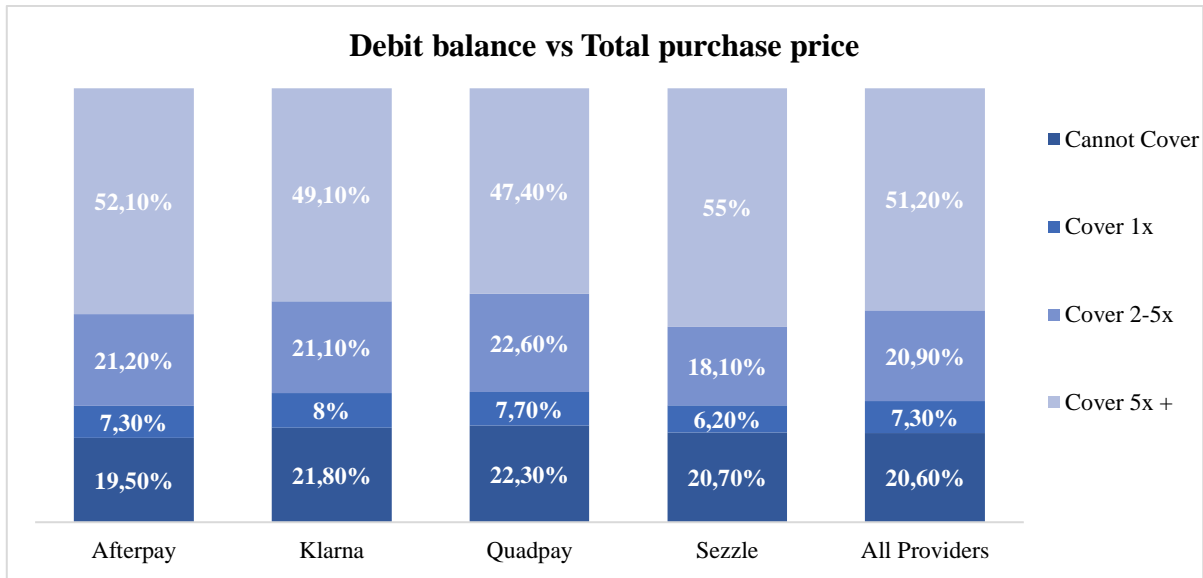


Figure 10 - Consumers available money vs BNPL purchase amount (CB Insights, 2021).

Another important factor to analyse is the intensity of usage. Studies show as the average monthly BNPL expense is typically lower than \$250, in fact in 76% of the cases observed the monthly expenditure does not exceed this threshold. Moreover, it is interesting to note that for 26% of BNPL users the average expenditure does not exceed \$50 per month. On the other hand, the cases in which the average expenditure exceeds \$500 per month are rare, in fact this happens only for 7% of customers, and only in 2% of cases is recorded an average expenditure greater than \$1000 (C+R Research, 2021).

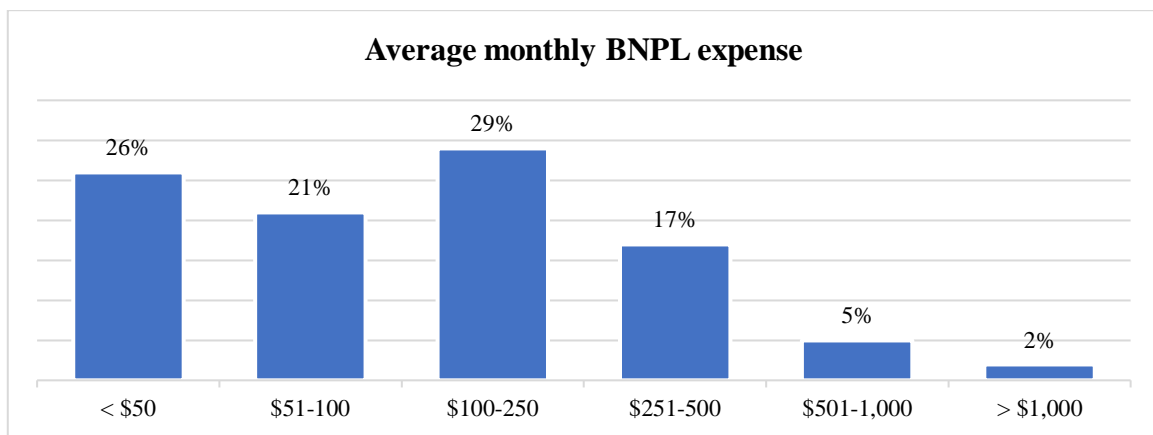


Figure 11 - Average monthly expenses paid with BNPL (C+R Research, 2021).

These data show how the BNPL is a payment method used principally for purchases of low-medium economic value and with a low monthly frequency. In fact, usually only 10% of BNPL users use this payment method more than once a month, while the vast majority of customers – 71% – use BNPL on average from 1 to 4 times a year. Since these statistics are highly influenced by the ecommerce usage, it is interesting also to have a focus on the usage of BNPL for online purchases. The results

are impressive, in fact, 47% of customers said that they use BNPL for most of their online purchases, and 12% use this payment method all the time (C+R Research, 2021).

These data about frequency of use and average expense are strongly affected by users age, in fact it is possible to observe how on average younger customers use BNPL with high-frequency and for low-value purchase. The AOV of customers aged between 18 and 24 is £41, while it almost double, reaching £81 for those between 25 and 34. Older consumers tend to have more purchasing power and have the financial means to make the smaller purchases. So, typically, they approach BNPL from a different mindset, using it to pay for larger and less frequent purchases. To demonstrate this, the highest AOV, £99, is registered among customers between 35 and 44 years, and the situation is quite similar for older customers, £96 AOV for the age group that range from 45 to 54, and £91 AOV for those who have 55 years or more (Tijssen and Garner, 2021).

These BNPL purchases are related to goods or services from many different categories, the graph below shows the most common of them.

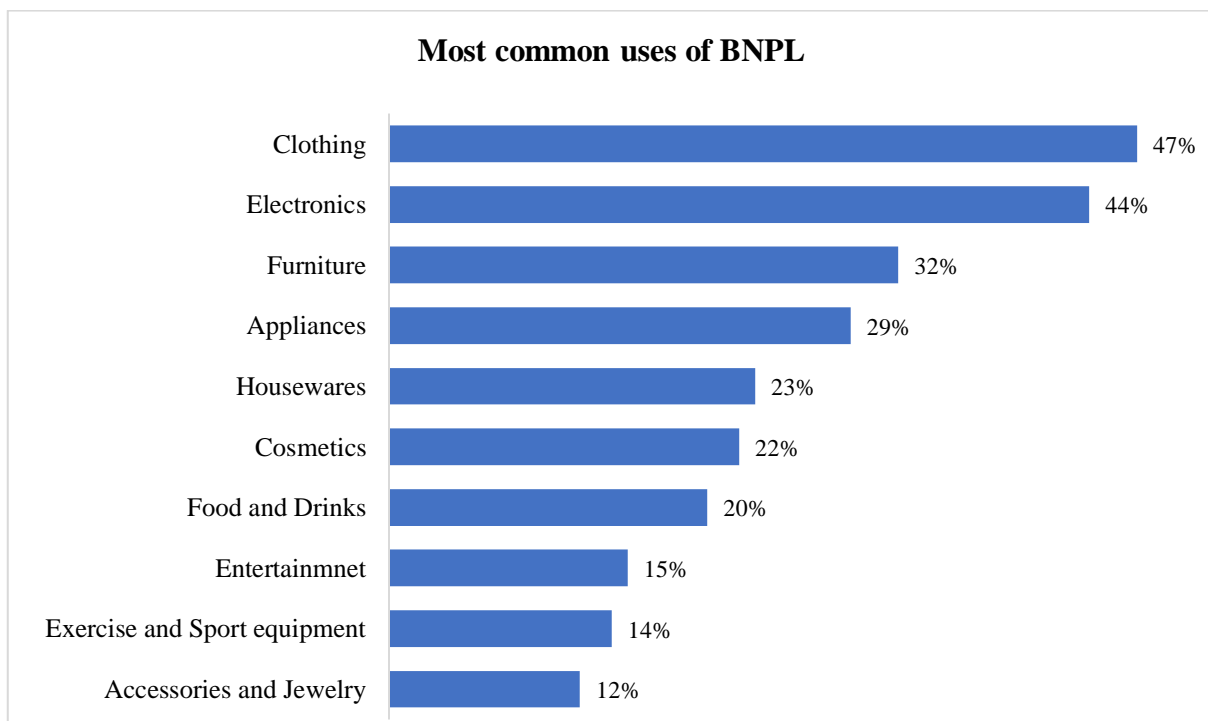


Figure 12 - Most common category of goods or services paid with BNPL (Haughn, 2022).

The data reported show the percentage of purchases done using BNPL payments over all the purchases done for different categories of goods and services. Clothing and electronics are the most common items purchased with BNPL payments, while among others important results are registered also for furniture, appliance, housewares and cosmetics.

There are various reasons that lead customers to opt for a BNPL service, among them the most common are the following.

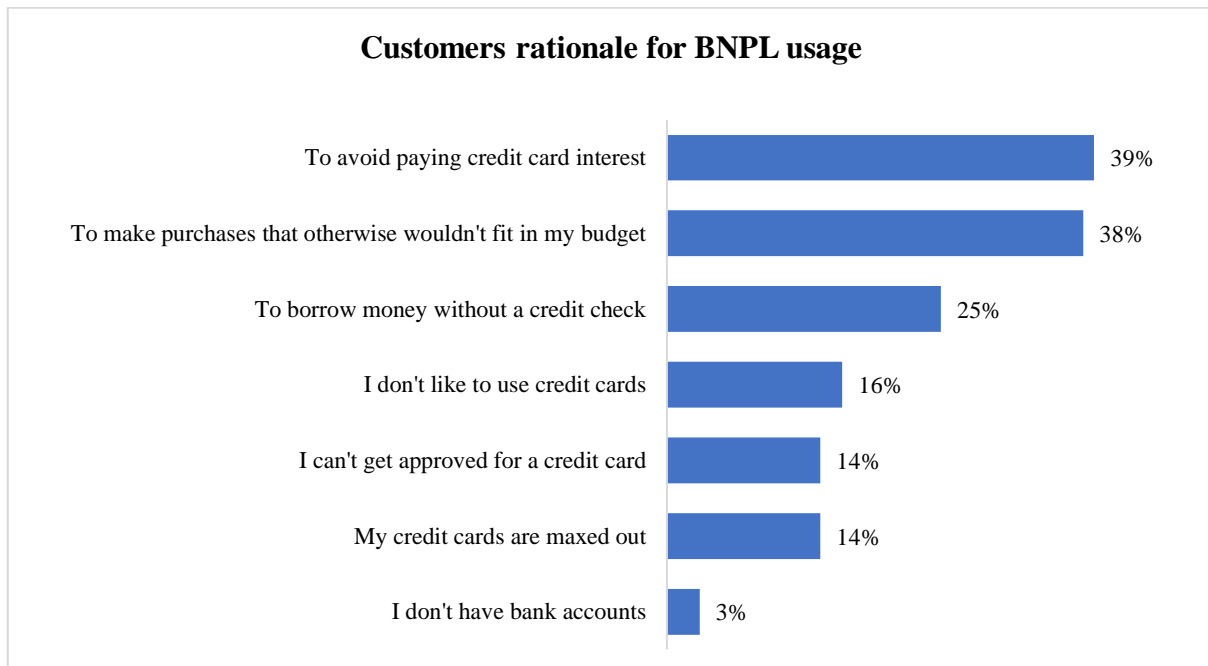


Figure 13 - Customers rationale for BNPL usage (CB Insights, 2021).

As shown by the graph the most common reasons to use BNPL are mainly related to dissatisfaction with alternative payment methods, especially credit card, and the unaffordability of the purchases. 39% of the customers, sees BNPL as a cheaper alternative to credit card. In addition, the fact that BNPL services do not conduct hard credit checks that would have an impact on credit history is particularly appreciated by 25% of customers. Finally, it is interesting to note that for many people the BNPL is the only viable solution to make online purchases in instalments, in fact 28% of customers report that they have not been approved for a credit card or that the limits of the card held are maxed out.

The reasons described above are the result of an investigation carried out on a limited sample of customers, therefore they represent only a small proportion of the rationale for customer BNPL usage. Many additional studies related to this topic are conducted in recent times. Among them, a research published by Which? identified that among all factors that influenced consumers' use of BNPL, there are two sets of factors that are particularly relevant. The first set is related to the affordability, clarity, and ease of BNPL usage, while the second set is related to users' financial situations.

Factors composing the first set:

- Low cost: BNPL services are usually offered at small or no cost to customers.
- Clarity over repayment schedules: users know exactly when payments are due, so they can choose repayment schedule that best fit for them, e.g. schedule based on their pay periods. For many people this factor is a key differentiator between BNPL and credit cards.
- Ease of use: BNPL process is quick, simple and clear. This makes BNPL a fast and frictionless payment method.
- Clear communication from BNPL providers: customers appreciate the communication of BNPL providers, particularly the use of reminders and notifications when payments were due, and the flexibility to defer repayment without having to contact the provider directly.
- Perceived safety: BNPL is perceived as a safer way to pay since it seems to put an additional distance between the consumer and a potential scammer. In fact, it is common for customers the belief that BNPL providers checked the legitimacy of merchants' businesses before allowing them to use their payment options. Furthermore, the fact that the customer receives the goods before the full payment, makes consumers safer about their purchases.

Factors composing the second set:

- Needing to spread payments: BNPL is perceived as an easy and low-cost form of financing, therefore customers who do not have enough financial resources for their purchases see BNPL as the best solution.
- Wanting to spread payments: some customers, despite being able to afford products, decide to opt for BNPL since they prefer to defer payments related to large expenses. These people typically saw BNPL as a money management tool.
- Perceived affordability: it is common among consumers to perceive large expenditure divided into smaller instalments as more affordable, even if the total amount paid was the same. In fact, individuals prefer to deal with monthly or weekly payback rather than paying the whole amount, so the cost of the goods essentially became anchored to the lower instalment cost. As a result of this, some customers were less hesitant to make purchases that otherwise they would have considered unaffordable or unnecessary.
- Lack of access to alternative credit: individuals that have poor credit history or past debt problems, have limited or no access to affordable credit solutions. For these consumers, BNPL represents an expedient way of making purchases that would otherwise be unaffordable.

Combining all the above factors with the frequency, intensity and nature of customers' BNPL usage highlighted in the previous paragraphs, it is possible to identify four specific patterns of behaviour of BNPL users.

	Frequency of use	Access to alternative ways to pay	Engagement with term and conditions	Perceptions of BNPL products and brands
Spending Smoothers	Medium/high	High	Low	Very positive
Experimenters	Low	High	Low	Positive
No Choicers	Low/medium	Low	High	Very positive
Plate Spinners	Medium/high	Medium	Low	Positive/ Very positive

Table 2 - Behavioural patterns of different types of BNPL users (Which?, 2022a).

Spending Smoothers: largest subgroup in the sample, they typically have steady source of income and consider BNPL an affordable way to manage the cost for medium-value items, £50-£150. Spending Smoothers commonly uses BNPL regularly, but not habitually. They decide whether to use the BNPL from time to time, basing their decision on financial circumstances. These users typically have only one BNPL purchases “active” at time and used it for items that were outside of their daily purchases, but which were not unexpected or impulsive. Spending Smoothers frequently shown a strong affinity for BNPL and are advocates for trusted brands. In relation to terms and conditions, they tend to engage with them just superficially, presuming that they would be able to make repayments in any case.

Experimenters: the second common group is composed by individuals that have used BNPL only once or are very infrequent users. Experimenters have many similarities with Spending Smoothers. Typically, they use BNPL to amortize the cost of purchases with medium cost and outside of their usual spending. Furthermore, they also present low engagement with terms and conditions. However, unlike the Spending Smoothers, Experimenters have more distant relationships with BNPL.

No Choicers: small but still significant group of BNPL users, they use BNPL since they have limited access or prefer to avoid traditional form of financing. This group include consumers with a particular condition – such as poor credit histories, very low income, or thin credit files – that make them not eligible for other types of credit. Although they do not use BNPL intensively, regularly, or for more than one purchase at a time, they exhibit the strongest affinity and reliance on it. This group is the most engaged with BNPL terms and conditions, in order to make informed decisions about whether or not they could afford the credit offer. They are very careful about their finance, and are extremely mindful about not missing payments, to avoid any additional charges.

Plate Spinners: the most precarious users of BNPL. They represent the smallest group in the sample, Plate Spinners typically have complex financial conditions and low or inconstant incomes. They usually are young and have low experience about credit use. In general, these people use multiple BNPL providers, the choice between them usually depended on the repayment schedule proposed. It is not uncommon for Plate Spinners to make multiple purchases selecting different BNPL providers at the same time. People in this group typically have missed payments on their bills or credits, have income reductions, and have gone through a life event in the previous 12 months. For them BNPL represents a practical solution to preserve their lifestyle during difficult times. This group reported the most frequent BNPL usage, typically focused on food or groceries delivery apps.

1.1.7. Comparison with traditional credit products

As discussed in the previous chapters BNPL has many points of difference with traditional credit products and are exactly these differences that have driven the spread of this innovative form of credit. In the table below are reported the five major areas of differentiation between BNPL and traditional credit such as personal loans.

	Traditional credit products	BNPL
Eligible clients	Consumers comply with traditional credit decision criteria that typically involves hard credit check.	Consumers comply with innovative and more inclusive credit decision criteria, usually based on soft credit check.
Nature of transaction	Deliberated and intentional decision. The contractual relationship for the credit product is established at a different moment from the one of the purchase.	Decision mostly impulsive and made during the purchase. A one-time relationship referred exclusively to a specific transaction is established.
AOV & Duration	Used for purchases with high AOV and longer repayment terms.	Used for purchases with low-medium AOV and shorter repayment terms.
Journey simplicity	Complex and time-consuming journey, since requires compliance with consumer credit regulations.	Easy and fast journey since it is not affected by consumer credit regulation.
Pricing / Revenues	Interest rate and fee typically charged to the customer.	Interest rate and fee typically charged to the merchant.

Table 3 - BNPL comparison with Traditional credit products.

An interesting case involve the comparison between BNPL and credit cards. In the past credit cards are the most widespread payment methods used to defer the cost of a purchase over monthly instalments. Today the situation is changing, credit cards are gradually losing popularity and BNPL is slowly emerging in the credit market. A study from The Ascent found that 67% of BNPL users think that BNPL services could replace credit cards in the coming years (Hodge, 2022). Data taken

from research conducted by Bain in the UK shows that currently BNPL usage is slowly surpassing credit cards one, especially among young people. In fact, 42% of customers between 18 and 24 are BNPL users, while only 31% of them are credit card users. The use of BNPL is also widespread among people aged 25 to 34, and from 35 to 44 years – a penetration of 49% and 46% respectively is recorded. This value of penetration decreases as the customer age increase, in contrast credit cards are still highly diffused among older customers. More than 60% of customers with more than 35 years are credit card users, and this penetration records its peak (74%) in the age group between 65 and 74 years. These data highlight how most aged customers are still distant by new digital solutions, particularly BNPL, preferring to use more traditional credit like credit card. In contrast credit card users are decreasing, especially among people aged between 18 and 24, for which the BNPL users surpassed the credit card ones by eleven percentage points.

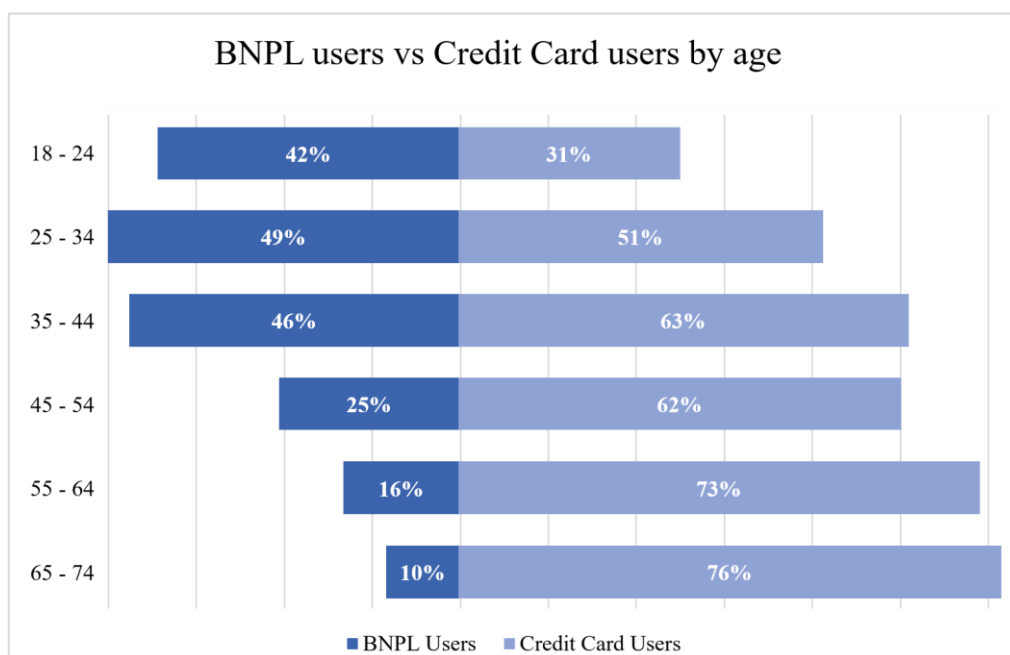


Figure 14 - BNPL vs Credit card usage among consumers form different age groups (Tijssen and Garner, 2021)

The reasons that lead customers, especially the younger ones, to prefer BNPL options, are mainly related to the cheapness, simplicity, and accessibility of this form of credit. Market research shows that 45% of customers prefer BNPL to credit cards because it is easier to make payments, 36% of customers because BNPL have lower interest rates, while 33% of them because BNPL have softer approval process. The flexibility of BNPL services is also highly appreciated, being nominated by 44% of the interviewees (C+R Research, 2021). Another characteristic in favour of the BNPL is the trustworthiness related to fair business practices. In fact, an analysis among American consumers shows that 31% of them consider BNPL to be more trustworthy than credit cards, while only 22% have the opposite opinion (Backman and Caporal, 2022).

BNPL therefore seems to be considered as a substitute for credit cards and a threat to the companies that offer them. Although this consideration is valid for many customers, recent studies show that for some people BNPL is not a substitute for credit cards but a complement. Credit card users pay off their balances each month, BNPL could help them reducing the monthly balances by breaking up the larger purchases into smaller, more manageable payments without additional fees or interest. It was found that in the UK, during 2021, 19.5% of credit cards registered at least one BNPL transaction on them. Additionally, TransUnion reports that in US individuals for which a BNPL lender searched their credit files, on average, do not appear to be reducing their credit card statement balances (Guttman-Kenney, Firth and Gathergood, 2022).

Therefore, although the BNPL represents a threat to credit card companies, it can also become an opportunity to increase the services offered and expand their customer base. The best choice for credit card providers is probably to embrace BNPL and integrate it into their cards, developing proprietary solutions or collaborating with BNPL companies. The availability of the interest-free instalments can expand overall consumer credit instead of cannibalizing revolving credit.

1.1.8. BNPL introduction by banks and credit card companies

As discussed above, the BNPL is slowly gaining momentum in the credit market, especially as regards medium-low value online purchases. On the contrary, companies that offer more traditional forms of credit are recording significant drops in share. It is estimated that \$8-10 billion of annual revenue has already been diverted from banks to BNPL FinTech and it is expected that BNPL will continue to erode unsecured retail credit revenue (IBS Intelligence, 2022). This happened since traditional players like banks or credit card providers have generally viewed BNPL as a competitive force threatening their business, but actually BNPL represents a great opportunity for these players and not taking it could prove to be a great loss. Consumers without a credit card, unbanked, underbanked and millennials constitutes new segments that traditional players could target by offering BNPL solutions. This could enlarge their customer base and could help drive financial inclusion. Furthermore, by adding BNPL to their offers, banks and credit card providers will take another step towards competing with digital wallets – such as GooglePay, ApplePay, and WeChatPay – that are becoming the leaders in the global payment market.

Additionally, in this field banks could start from a position of advantage in several aspects, compared to FinTech. First, banks enjoy a strong and long relationship with their customers, this implies higher level of trust by customers. A recent PYMNTS' study found that 60% of millennials, and 54% of

Generation Z consumers are more interested in a bank backed BNPL option rather than in a FinTech's one (PYMNTS.com, 2022). Second, banks already have full knowledge of their customers' credit histories thanks to data collected during their relationships. So, they could offer more appropriate and personalized credit products based on better credit scoring processes. Additionally, using banking app it is possible to provide customers with a comprehensive view of their credit situation. Finally, another important advantage of banks concerns the future regulations that will be imposed on BNPL markets. Banks, being already subject to strict financial regulations, would not encounter the difficulties that FinTech will encounter in their transition from an unregulated to a regulated market.

Until now, usually banks and credit card companies have related to BNPL services only through partnerships or as clients. Some of them have even actively pushed back against BNPL players, one example is Capital One, which stopped customers from using BNPL on their credit cards. In recent years, however, many of the major players in the credit market have begun to acquire or develop BNPL solutions. Square spent \$29 billion to buy Afterpay, PayPal is paying \$2.7 billion for Japanese upstart Paidy, and Discover invested \$30 million in Sezzle. Visa and Mastercard recently started offering instalments on their networks in several markets. JPMorgan Chase, American Express and Citi are providing their credit card users the possibility to shift selected purchases into an instalment payment plan (Protiviti, 2022).

In conclusion, the latest trends in the BNPL market show how players from traditional credit industry are starting to develop or acquire BNPL solutions, managing to compete in a short time with pure BNPL providers. Furthermore, banks and credit card providers are well positioned against FinTech in a market threatened by more regulation and lower margins. So, they can leverage their existing compliant operating models, large individual and merchant customer bases, and lower funding costs to succeed in BNPL market.

1.2 BNPL BENEFITS

The impressive growth and diffusion of BNPL as a payment method is mainly due to three reasons: (i) the growing use of ecommerce, (ii) the decrease in the use of traditional credit products, (iii) the innovative and functional features that characterize this new payment method. This chapter will focus on the latter, identifying which are the most appreciated BNPL features by two of the main participants involved in the process, consumers and merchants.

1.2.1. Consumers point of view

When defining the reasons for the diffusion of BNPL it is important to compare it with other type of credit, in order to understand why customers preferences is shifting towards this new form of credit. Bain & Company, a consulting firm, compares the Net Promoter Score of three different credit products – BNPL, credit card and overdrafts – founding that BNPL has the highest NPS, with 30 points on a –100 to 100 scale. This value is significantly higher than the NPS of other products, 6 for credit cards and -15 for overdrafts (Tijssen and Garner, 2021). This data underlines the fact that customers have an excellent opinion of BNPL services, far superior to those relating to other forms of credit.

This preference can be explained by various factors, the most relevant identified by the Bain research are four. The first one is related to the cost savings. In fact, the absence or low value of fees and interest is the most appreciated benefit from customers, 52% of them consider it as one of the top reasons for using BNPL. An additional benefit is related to missed payments, in fact late fees imposed by BNPL providers are generally lower, and capped in some cases, rather than the ones imposed by credit cards. The graph reported in the following page compares the potential costs for customers for a £75 purchase done with BNPL versus the same purchase done with credit card.

The second factor is related to the fact that BNPL services help customer to manage their finances, especially for important purchases. This is the second most common reason for the BNPL use, since 40% of customers cited this option as their main driver for the choice of BNPL. Furthermore, 77% of respondents agree to the fact that BNPL is a useful tool for managing their finances and they are more likely to use it for things that they need rather than for superfluous purchases. The third factor is the BNPL affordability. Sometimes customers couldn't afford the whole price of a purchase upfront, so BNPL is a useful means to make unaffordable purchases. This reason is shared by 34% of respondents, and this percentage grow to 48% among customers with low income or bad economic situation.

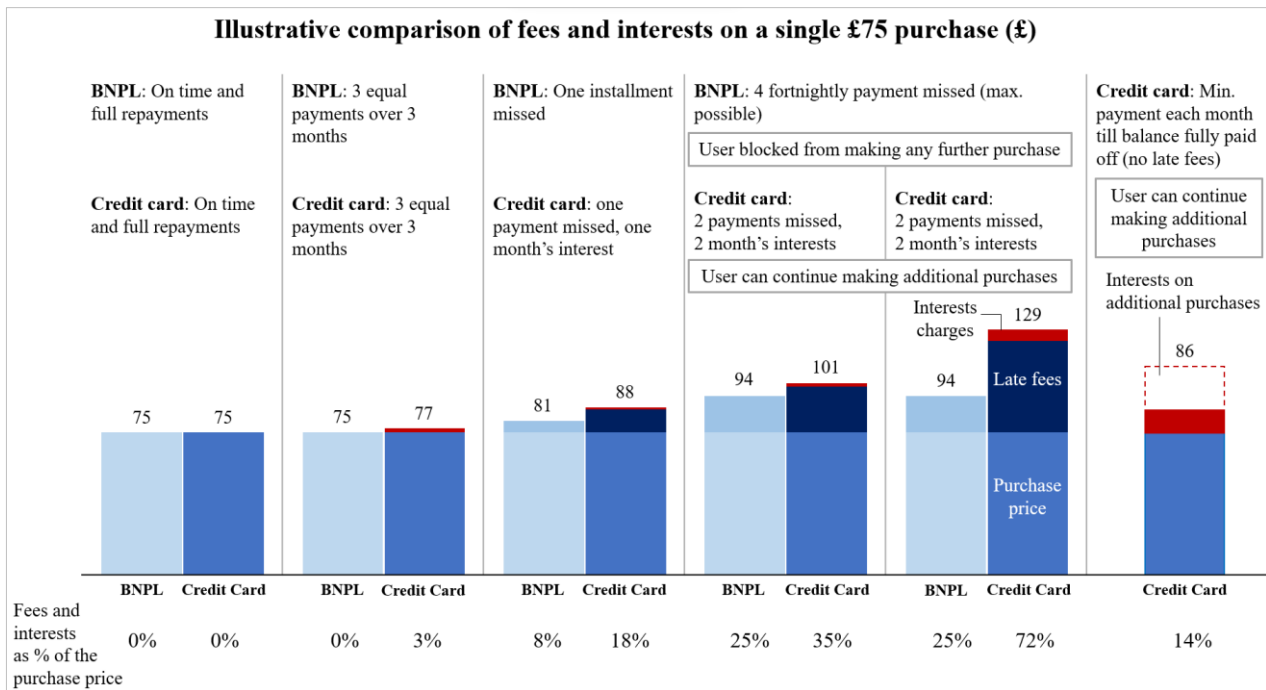


Figure 15 – BNPL vs Credit card fees and interests comparison (Tijssen and Garner, 2021). Notes: BNPL late fees are assumed to be £6 and capped at 25% of the order value (late fee applied by Clearpay) while credit card late fees are assumed to be £12, and APR is assumed to be ~18% (2020 average).

The last factors are the BNPL convenience and ease of use (Tijssen and Garner, 2021). These characteristics are made up by a set of different features that characterize BNPL services, among them the most important are:

- Intuitive navigation and interface, intuitive workflows, and instant credit decisions, that create a delightful experience for its users, especially if they are young and digital-native consumers. Additionally, functionality like in-app reminders of upcoming payments or temporarily snoozing payments makes managing debts hassle-free and transparent.
- Wide availability, since presently BNPL payments are offered by almost all ecommerce.
- Exclusive discounts and offers provided by merchants on BNPL firms' apps and websites, in order to increase their sales.
- Helpful and effective customer service, generally more appreciated by customers than the one provided by traditional credit companies.
- Possibility to try before buy. Thanks to the postponed payment and to the easy return process offered by BNPL providers, many customers use BNPL to try goods before paying.
- Easier tracking of online purchases, by linking transactions to specific items purchased. In contrast, bank or credit card statements usually display transactions only by merchant.

1.2.2. Merchant point of view

As shown in the previous paragraph, BNPL provide important benefits to customers. But the beneficial effects created by this payment method have also an important impact to partner merchants. The most relevant are related to sales, customer acquisition, customer experience, and cost savings. In the following graph are reported the benefits most appreciated by merchants.

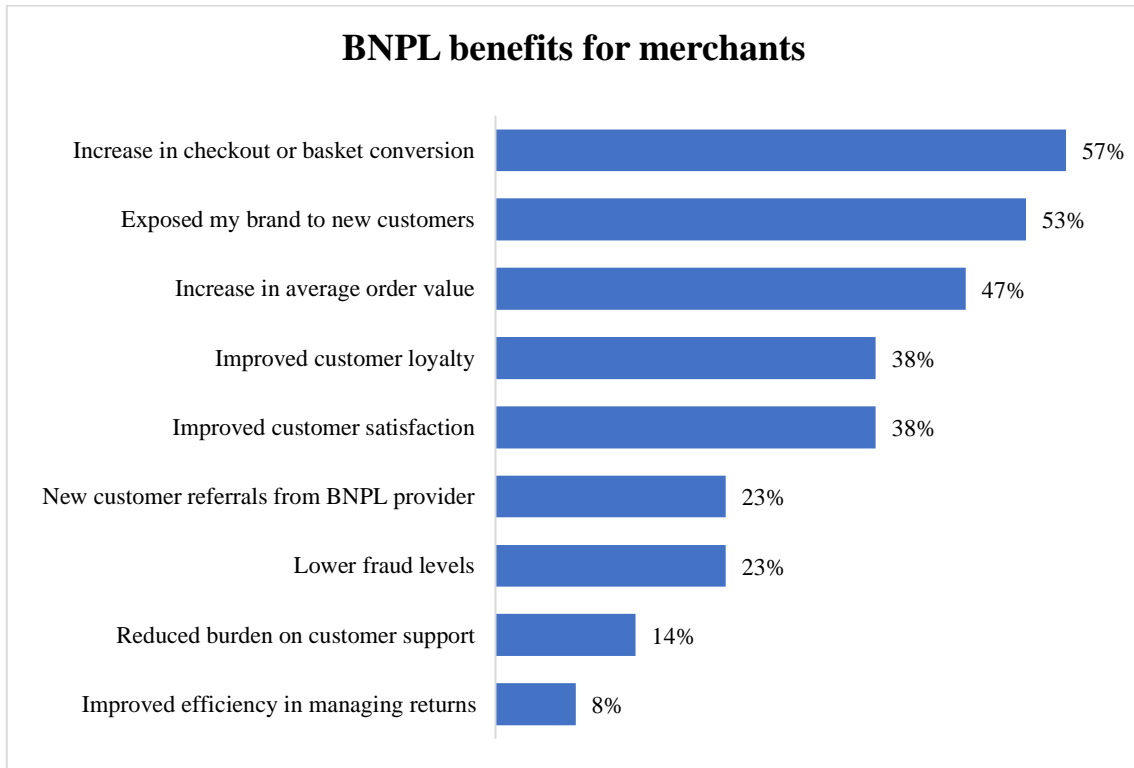


Figure 16 – BNPL survey on the benefits for merchants (Tijssen and Garner, 2021).

The benefit most shared by merchants concerns the increase in sales, BNPL solutions act on this metric in two ways. Firstly, increasing checkout or basket conversion, by making purchases more affordable consumers are less likely to abandon their cart. Secondly increasing the average order value, since spreading payments over multiple instalments allows customers to buy more expensive goods or services. According to RBC Capital Markets, BNPL increases retail conversion rates, i.e. the percentage of visitors who effectively make a purchase, by 20% to 30%. Offering BNPL as a payment option increases the chances of a potential customer to complete the purchase since it allows to overcome some obstacles to purchasing, such as budget constraints or not having a credit card. BNPL also has a positive impact on the average purchase value by increasing it from 30% to 50%. In fact, customers will be more likely to spend on more expensive items as the deferred payments and low or null interest rates makes the purchases look more affordable (Perlin, 2021).

The second most important benefit is the customer acquisition. For retailers can be difficult to increase their customer base, but thanks to partnership with BNPL companies, they can expose their

brands to new customers using partners' apps and websites as a showcase, or they can invest in co-branded marketing activities to boost brand awareness and inform customers that they offer BNPL payments. A recent survey by Accenture found that merchants offering BNPL solutions have enjoyed 13% more new customers (Accenture, 2021). The presence of well-known and trustworthy BNPL brands at checkout can give credibility and trustworthiness to merchants, and that is helpful especially for smaller or new-born retailers that are still building their brand awareness.

The third benefit mentioned regards the customer experience. BNPL options act on this field in two ways, increasing customer satisfaction and increasing customer loyalty, thanks to the fast and frictionless checkout experience offered.

The fourth benefit cited by merchants is a cost reduction. This originates from:

- Fraud levels reduction: retailers typically have an average fraud rate of 1.5% (in proportion to sales) but considering BNPL payments this percentage fell to 0.6% since BNPL providers takes on the risk of payment and lending. In fact, merchants are usually paid by the BNPL provider within a couple of days from the purchase, so even in the case that customers will not be able to pay their instalments, the merchants will not be plagued by non-payments and will not have to manage the credit collection.
- Better customer support: BNPL companies have strong customer support teams who can assist customers on everything is related to the payment.
- Easier return systems: the management of the return and the refund of payments are entrusted to the BNPL provider. This benefit is shared only by 8% of merchants since the many dependencies and third parties involved, such as shipping company for the delivery, should be coordinated by the retailer.

Additional beneficial features, not cited by respondents, that should be taken into consideration are the ease of integration, enabled by API technology, and the data sharing between merchants and lenders throughout the customer journey. For merchant is very easy and usually free to integrate BNPL payments in their checkout since BNPL API can be rapidly integrated in most ecommerce platforms, such as Shopify or Magento. BNPL companies does not produce only the above cited monetary benefits, but they are also able to generate powerful insights from the data collected from both customers' and merchants' side. In fact, BNPL providers collect and provide to the retailers, important information about customers characteristics (such as age, gender, location or credit score), customers preferences (considering aggregated data on past purchases, item viewed, social sharing, etc...), and customer habits. Those shared information are necessary for merchants to deeply

understand their target customer segments, develop targeted marketing campaigns and better meet customer needs.

In conclusion the benefits described above are sufficient to explain why merchants gladly accept the higher fees requested by BNPL providers compared to other type of payments. In fact, on average, fees for accepting credit card payments are around 1.5%, while fees charged by BNPL providers are more than three times higher, e.g. the average fee paid by merchants surveyed by Bain is 4.84% (Tijssen and Garner, 2021). In the table below is reported an example of the revenue structure of a BNPL transaction compared to a credit card transaction. It shows that the economic benefits generated for merchants are greater, although the costs of BNPL is higher.

	Credit card	BNPL
Basket Value (Base basket of €300 with BNPL increasing AOV by 30%)	€300	€390
Merchant fee	1,5%	5%
Merchant's net revenue	€295,50	€370,50

Table 4 - Economic impact of a €300 transaction (Tijssen and Garner, 2021).

1.2.3. Summary of BNPL benefits

As shown so far, the BNPL is therefore a powerful tool capable of generating customer and industry welfare. The following table summarizes the main benefits reported, integrated with other "secondary" but still significant benefits.

Customers	Merchants
Low/No cost financing	Increase sales
Lower late fees, compared to other credit products	Increase conversion rate
Help managing finances	Increase average order value
Help customers in financial difficulties for their essential purchases	Reduced cart abandonment
Spread the cost of unaffordable purchase	Increase customer purchases
Clear repayment schedules and fees	Increase customer loyalty and repurchase
Clear communication from BNPL providers	Increase customer satisfaction
Easy process	Facilitate customers acquisition
Intuitive navigation, interface and workflows	Expose brand to new customer
Wide availability on ecommerce websites	Increase trustworthiness of merchants
Soft credit check	Collect and provide useful data and insights about customers
Instant credit decision	Easy API integration
Available also to customers with poor credit history	Facilitate customer support

Customers	Merchants
Avoid hard credit check that have an impact on credit profile	Facilitate return management
Make possible to make online purchases also to customer without credit card or bank account	Lower fraud levels
Effective customer service	The credit collection is in charge to the BNPL provider
Useful upcoming payment reminders	Merchant is not exposed to the risk of missing payments or customer default
Possibility to temporarily snooze payments	
Discounts and offers	
Easier tracking of online purchases	
Possibility to try before buy	
Reduced returns-related friction	
Increase perceived security of online purchases	
Lower perceived risk of getting into debt	

Table 5 - Summary of BNPL benefits

1.3. BNPL RISKS

Up to now only the positive aspects of BNPL have been considered and discussed, but it is important to remark that, like any form of credit, BNPL could also bring risks to consumers. Most of the risks generated are caused by the mild and limited regulations imposed on this new form of credit, especially compared to traditional credit products such as credit card or personal loans. The following chapter will be focused on the main problems for customers that could arise from a little conscious use of the BNPL, and the threats that frighten the main BNPL players in the near future.

1.3.1. Risks for customers

BNPL products hide many potential risks for its customers, the most relevant will be described in this chapter. The first is a risk of debt spirals across multiple BNPL providers. Currently customers can easily access to BNPL credit and additionally BNPL providers do not share information about existing transactions with customers, so there is a significant risk that users intentionally or inadvertently accumulate debt across multiple providers until it will become unaffordable. This situation is also influenced by the fact that many customers do not consider that BNPL is a credit product. Studies shows that more than half of BNPL users with an age from 18 to 34 do not consider BNPL as a form of debt. Presently, the risk of incurring in unaffordable debt is low, in fact only 9% of users report that they struggle to make the repayments (Tijssen and Garner, 2021). However, the negative consequences for this “small” group of customers can be alarming. Many BNPL firms have in fact already taken action in this regard, such as blocking customers with unpaid balances to make additional purchases. These solutions provided by BNPL firms are still not sufficiently effective, as in general they can be avoided by customers simply by changing providers.

The second is a risk of defaults and missing payments. During 2021, 16% of UK BNPL users had missed a payment and 15% had missed more than one. Among the latter, 50% missed the payments for mistake or oversight, while 44% of them because they could not afford it (Tijssen and Garner, 2021). The situation is even worse in the US market where studies report that 43% of users in 2021 had made a late payment (Schulz, 2022). Further studies reveals that 72% of consumers, who have used BNPL solutions and missed a payment, have reported a decline in their credit scores (Lux and Hepps, 2022). Concerning the risk of default, measured through default rates, it varies by BNPL provider, but generally is low. It ranges from values lower than 1% for Klarna and Afterpay to a maximum of 5% for smaller firms. These values demonstrate how the innovative credit assessment algorithms developed by BNPL leaders are quite effective. Even the risk related to late fees is limited,

in fact only to 52% of users who had missed a payment were charged a late fee (Tijssen and Garner, 2021). This might mean that BNPL users are more likely to quickly rectify a missed payment, thanks also to BNPL providers effective communication and reminders. Furthermore, most of BNPL companies impose cap on late fees, in order to help customers in financial difficulties. Although the risks of default and incurring late fees are in any case limited, they can have a significant economic impact on financially weaker customers and additionally they can deteriorate customer credit score and future ability to borrow. Research on US households provide important data about the non-idyllic economic situation of many BNPL users. These studies highlight that financially vulnerable households – i.e. people that struggle to manage their finances – are nearly four times more likely to use BNPL compared to financially healthy households and 43% of BNPL users have credit scores below the average. The negative consequences related to a little conscious use of BNPL increase exponentially among these customer groups. In fact, generally only 8% of BNPL users found difficulties to repay the instalments, while this percentage grow to 24% for financially vulnerable households (Gdalman, Greene and Celik, 2022).

Impulse purchasing represents the third main risk related to BNPL. Another common criticism of BNPL has claimed that this payment method can cause an irresponsible spending, issue that can be particularly problematic especially for younger or financially vulnerable customers. The possibility of deferring payments in small instalments makes the purchases more affordable and less expensive in the eyes of less scrupulous customers. This leads BNPL users to make more purchases during their shopping, often choosing also the more expensive options that otherwise they would not have considered. On the graph below is reported the likelihood to make an impulse purchase considering customers from different age group.

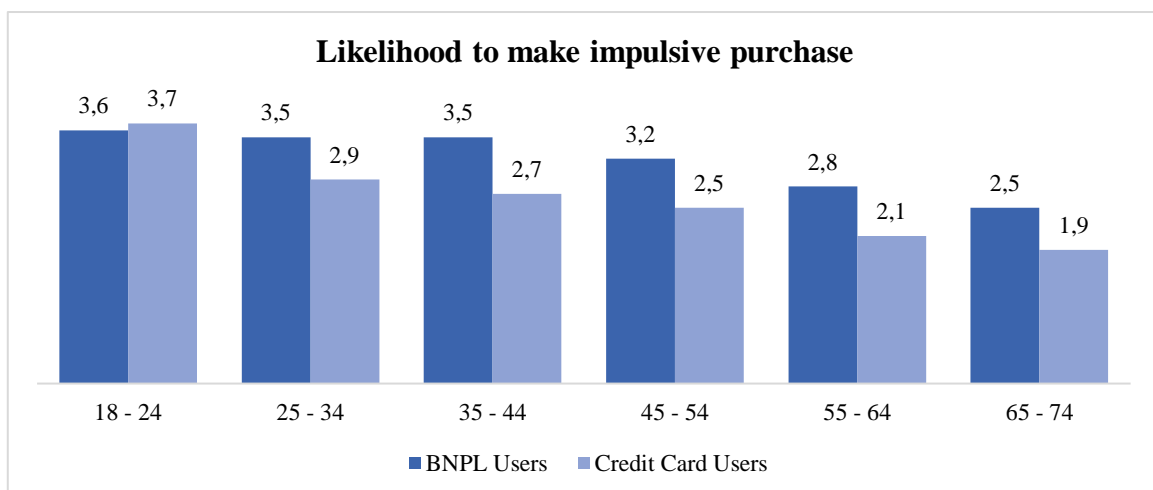


Figure 17 – Consumers likelihood to make impulsive purchase with BNPL and credit cards (Tijssen and Garner, 2021).
 Note: Values are on a scale from 1 to 5, where 5 is the maximum.

The graph highlights two main facts, the first is that customers are less likely to make impulsive purchase when uses more traditional form of credit, in particular credit cards. The second is that younger customers, those between 18 and 24 have a higher propensity to make impulsive purchases, despite the credit product used. While customers from 25 to 54 register high level of likelihood only in the case of BNPL, and this value decrease as age increase. Additional studies among US consumers reveal that 59% of BNPL users make unnecessary purchases that they otherwise couldn't afford and 57% have regretted purchasing an item with BNPL because it was too expensive (C+R Research, 2021). Furthermore, nearly 70% of BNPL users admit to spending more than they would if they had to pay for everything upfront (Schulz, 2022). So, it is possible to conclude that BNPL becomes a gateway to overspending, and the potential harm of indebtedness increases especially among the most economically fragile individuals.

1.3.2. Sources of risks for customers

Most of risks described above can be conducted to two main causes. The first is a lack of understanding of the product affected by BNPL consumers. Most users in fact consider the BNPL as a means for spreading their payments, not as a form of borrowing. Surveys show that customers commonly describe BNPL simply as a “way to pay” or a tool for deferring payments, and rarely refers it to credit, borrowing, or debt. These considerations were partially based on the mechanisms characterizing BNPL repayments, such as automated charges on credit/debit cards or via direct debit. These mechanisms reinforce the idea that BNPL is an instalment payment rather than a borrowing, and this lack of understanding of the BNPL nature raises concerns that consumers using these services may not fully understand the implications of this choice. Uninformed use of BNPL may increase the risk of missed payments, leading to a deterioration in customer's credit profile and consequently future lending options could become less affordable. This misperception of BNPL is caused by three additional factors:

- The speed and simplicity of the lending process. Customers experience very low level of friction when using BNPL compared to other payment methods. This lack of friction may lead them to view BNPL as a payment mechanism rather than form of borrowing.
- Very limited engagement with terms and conditions, caused by a fast sign-up process and the common perception about the affordability and the low risk related to BNPL services. Most BNPL users usually skim terms and conditions or simply accept them without reading. This concern is amplified by complex and long terms and conditions provided by certain BNPL

firms. For this reason, general understanding of the consequences of missed payments, spending limits, safeguards and checks was limited and mainly based on assumptions.

- An implicit trust in retailers and the assumption that safeguards are in place. Users think that BNPL providers perform specific action to ensure that consumers couldn't get into serious financial difficulties. That happen because respondents typically have positive past experiences with BNPL, so they excessively trust BNPL providers. Furthermore, users assumed that BNPL companies check on their partner merchants, legitimating their businesses. However, this idea is just a belief since there is no regulation that impose BNPL providers to do so.

The second cause is a superficial affordability evaluation. Typically, customers do not consider or are not able to evaluate their repayment ability in the future, this judgement is in fact affected by positive bias and underestimation of future negative events occurrence. The behavioural economics theory state that most consumers are myopic, focusing only on short-term benefits while ignoring or discounting long term costs. Many individuals are also overly optimistic, overestimating their ability to repay their debt in the future, and they consider unlikely the possibility that unexpected future events may bring them in economic hardship. Such, consumers often do not consider certain pricing information, such as late payment fees, or the consequences of falling behind payments, since they consider unlikely that these events would materialise (Sng and Tan, 2022). The fact that BNPL providers are not currently required to undertake a creditworthiness assessment before extending credit and do not have to provide mandatory credit reports to authorities, is increasing the risk for customer to undertake a debt that they are not able to repay without having to borrow from other lenders or experiencing financial difficulties. To avoid that risk, most BNPL providers carry out credit checks before offering credit to their customers.

A credit check, also known as a credit search, is when a company search customer's information from its credit report, usually provided by Credit Reporting Agencies (CRA), to understand its financial behaviour and credit history. There are two types of credit checks. The first types, called "soft credit checks", are commonly used by BNPL firms and does not have an impact on the consumer credit score. This implies that CRAs do not consider them as a formal application for credit, thus the information about BNPL credit transactions are not registered and visible by other credit providers. So, individuals have the possibility to obtain significant credits from BNPL providers, without having an impact on their credit scores. As a result the consumer's credit profiles can become inaccurate, influencing also the accuracy of the credit assessment undertaken by financiers, and making more

difficult to prevent consumers from being overly indebted, as the calculation of credit limits are based on the consumers' loans information reported by financiers.

The second type of credit check, called “hard credit checks”, implies a complete share of credit information with CRAs. This means that those credit checks are registered by CRAs and have an impact on the consumer credit profile. These solutions are not always appropriate for BNPL because these services are typically utilized for smaller, less frequent transactions, and even in case of prompt repayments, hard credit checks might have disproportionately negative effects on the consumers credit score that last for months. Furthermore, evidences show that the customer credit assessment can be sufficiently reliable even if only soft credit check are performed, see Klarna. Therefore, the main issue is not the accuracy of the credit checks applied, since by adopting more advanced methods BNPL providers can obtain adequate customer risk assessments. The real problem is the absence of mandatory reporting to a regulatory body and credit bureaus. Currently BNPL companies share data only on missed payments and defaults. This make impossible for other lenders to evaluate the overall debt balance of a consumer, since information about BNPL credits are not available.

1.3.3. Fraud risk

The risks generated by the usage of BNPL products are not limited to customers, but they also affect the providers themselves. One of the main issues for providers arises when customers are not able or willing to repay their debt. The risk that users will not be able to repay their purchases has already been discussed above, this paragraph will focus on individuals who try to defraud BNPL companies by making purchases without then intending to repay them.

BNPL fraud is a very relevant threat, it can generate negative consequences for consumers, providers and even merchants. Typically, the economic risk is undertaken by the BNPL provider itself, but some particular frauds – such as false return – have an impact also on merchants. Studies identifies that only in the US, 181 million individuals are at risk of BNPL fraud (Fong, 2021). Furthermore, a report from the San Francisco-based anti-fraud company Sift found that fraud attacks on BNPL platforms have increased by 54% over the past year (Najarian, 2022). There are different types of BNPL fraud, among them the most common are:

- New Account Abuse: fraudsters create accounts with stolen data, enjoying new credit lines.
- Synthetic Identity Fraud: similarly to the previous, fraudsters combine accurate and false personal information to create a new identity at the enrolment stage. This hybrid method makes the detection and fight against scammers more challenging for providers. Federal

Reserve analysis showed that 70% of suspected fraudsters of synthetic identity accounts temporarily exhibited normal consumer patterns. So, when these accounts miss their repayments, their BNPL providers simply classify the situation as “bad debt”.

- **Account Takeovers:** fraudsters, thank to credential stuffing, phishing, and SIM swapping are able to steal personal information and take control of legitimate users' accounts, making unauthorized transactions using the victims' accounts.
- **Fraudulent chargebacks:** this fraud happens when a mischievous owner claims he has never made a transaction and asks the provider to return the funds to its account. An innocent version of this is when a family member (e.g. a child) of a BNPL account owner completes a transaction without the owner's consent. In both cases, the result for the BNPL providers will be the same, they will have to cover chargeback costs, handling fees, and processing fees.
- **Transaction Laundering:** an undisclosed business uses an approved merchant's credentials to process transactions for another, secret, store that sell illegal products and services. BNPL firms are exposed to this risk since they rarely conduct accurate controls over their partner merchants.
- **Never-Pays Fraud:** this fraud occurs in conjunction with one of the first three mentioned. In these cases, fraudsters create an account with stolen data or hack an existing one, so then they can easily make expensive purchases without paying back.

The reasons for which fraud affects BNPL are principally related to the fact that, since BNPL firms provide real-time credit decisions, they need to use lightweight approval process. Those process make the payment easier and faster for shoppers, but they also facilitate the attacks of scammers. This issue is also related to the absence of formal credit checks, in fact unlike other credit providers such as banks or credit cards, BNPL providers do not have to perform mandatory and standardized credit assessment to their customers.

1.3.4. Risks for BNPL-focused firms

Until now BNPL leading firms has registered incredible levels of growth in term of users and market valuation, also facilitated by favourable market conditions. In the previous years the markets were characterised by an abundance of capital that favoured a cheap funding process for BNPL firms, and low interest rates that helped BNPL providers to offer their credit products to consumers at a very low or even null cost. However, in the last months these market conditions have rapidly changed, the financial instability that characterized many industries and the investors' lower propensity to put their

funds in BNPL are causing the devaluation of many BNPL leading firms and that is threatening the future of BNPL industry.

The turbulent first half of 2022 has impacted the valuations of businesses in almost every sector. Klarna valuation fell from the \$46 billion of June 2021 to \$6.7 billion of June 2022, registering an 85% devaluation in only one year (Sawers, 2022). Similarly, SumUp valuation fell from \$22 billion to just \$8 billion after its latest funding haul. Affirm shares value fall down more than 80% this year. While Block's and PayPal's have dropped more than 60% each (Paige, 2022).

Many investors today are sceptical about BNPL profitability, their main concerns are about the excessively high market valuations and the poor operating result obtained. Many BNPL companies reported loss on their balances in the last periods and investors have lower propensity in putting their money into loss-generating businesses. In 2020, just two out of 15 BNPL companies listed on the Australian stock market registered a positive profit (Meaker, 2022). In the last year disclosure Afterpay reported a \$156.3 million loss, Zip a \$652 million loss, and many other pure players registered similar trends (Sharples, 2022). The result is that many companies are forced to accept worse condition to raise money. In particular they are affected by considerably lower valuations and less favourable terms compared to their past funding rounds.

An additional concern for BNPL firms is the increasing competition in this market, since many new entrants, especially established firms from other sector, are trying to reap BNPL pure-players market share. This competition will be likely to result in a reduction of merchant fees and provider profit margin, making the current BNPL business model unprofitable in the future. Moreover, the lack of regulation that has helped BNPL firms grow rapidly and keep low costs, is threatened by new regulatory frameworks that are expected to be enforced in the near future. Those new regulations will introduce additional costs that BNPL firms must sustain in order to comply with them. This, conjunct with the general market interest rate increase, could result in a further reduction of the already low operating margins. The impact of these factors could be very drastic among BNPL pure players. Cost reduction, diversification and acquisitions are the main remedies for this possible future "crisis" of BNPL. Some companies are already starting to develop plans to cut their expenses, aiming to create a sustainable business model. While others are extending their operations in different business areas, searching for new revenue streams, e.g. Klarna is progressively moving towards a super-app model to diversify its revenue streams from a pure BNPL business.

1.4. BNPL LEGISLATION

As previously mentioned, currently BNPL firms are subject to scarce and extremely basilar regulations. In fact, thanks to its nature and unique characteristics in the credit market – i.e. no cost applied to consumers, provision of credit for low value transaction, and short-term repayments – the BNPL is currently excluded from most of the laws applied to traditional credit products.

1.4.1. Regulators concerns and possible interventions

This situation of regulatory freedom is creating various risks both to consumers and to the credit industry itself. For this reason, in the many countries where BNPL has become a rather widespread payment method, financial authorities and regulators are starting to discuss and introduce regulatory frameworks with the aim of increasing consumer protection. Following the main areas of concern for the regulators and their possible solutions.

- **Licensing:** BNPL services in most counties are not subject to licensing requirements. Licensing has the benefit of excluding dangerous business models from the consumer credit market, but it may be difficult to summarize in comprehensive manner all the multiple characteristics needed by a BNPL provider to enter in the consumer credit market. Furthermore, it implies the introduction of additional costs for both regulators and financiers. These costs may, in conjunction with business model requirements, could act as a barrier for new entrants to introduce innovative solutions on the market. An effective solution can be found into a negative licensing approach, for which financiers do not need to obtain a license before entering the industry, but regulators may introduce a license requirement for those businesses that are perceived as risky. This approach allows authorities to focus on the financier's results, rather than on its structure and the qualifications, like in the case of a more conservative and theoretical pre-licensing approach.
- **Minimum income requirement and credit limits:** for traditional credit products typically are in place minimum income requirements to avoid that consumers obtain credits that they cannot repay. However, the application of minimum income requirements results in the exclusion of an important proportion of population from obtaining affordable credit. To avoid this problem and allow consumers that are currently excluded from traditional financial products to access to affordable credit, minimum income requirements should not be applied to BNPL. Nevertheless, limits on available credit should be introduced by

BNPL firms. These limits should be computed considering factors like customers income and other financial indicators and will prevent users to obtain borrowings beyond their means.

- Interest rates and fees restrictions: the imposition of cap over interests and fees applied by BNPL providers could reduce the risk that consumers are caught in a debt trap. These restrictions would have little impact on financiers, since BNPL revenue models are principally based on merchant fees rather than consumers one.
- Standardized information disclosure requirements: BNPL providers and their partner merchants should be required to provide clear and standardised information about the price and the fee structure in order to make consumers aware of the potential costs of BNPL arrangements and the effect on their credit history and credit score. Most BNPL firms already provide information about the service cost and fees, however standardized information disclosure could reduce the mistakes and misperceptions that currently affect BNPL users, thus limiting the risk of overspending and defaults.
- Credit bureau reporting standards: presently BNPL firms are reporting credit data only on a voluntary basis, and usually only data about missing payments and default are shared. This translate into the fact that BNPL may not have positive effects on consumers credit score, even in case of timely repayment and correct consumers behaviour, since providers are not required to share these information. The introduction of mandatory credit reports to credit bureaus and credit agencies could help other financiers and authorities to be updated about the consumers debt situation, and also help consumers to build their credit scores and have access to more affordable finance.
- Data privacy standards: regulators express concern about the usage of sensitive consumers data and its implications for consumers. Currently BNPL firms are not required to share their intended use of those data, this can make it more difficult for consumers to safeguard their privacy, seek compensation for data breaches, or avoid other negative consequences from the misuse of their data. So, the enforcement of data use reporting standards can increase consumers privacy protection by revealing eventual risks and suggesting potential interventions.
- Dispute settlement procedures: introducing regulations about the dispute resolution would increase the consumers protection in case of unauthorized charges, incorrect charge amounts, charges for goods and services not accepted or not delivered as agreed.

These concerns are not affecting only the authorities, but also some consumers are requesting more protections by asking regulators to introduce laws that limit the potential BNPL risks. An important example is the paper written in 2022 by the Consumers International association. In this paper the association defines six key requests for governments and regulators. These requests includes: (1) regulate BNPL products in the same way as other forms of credit, including caps on fees and charges, restrictions on marketing activities and obligations to help people in financial hardship; (2) impose merchants to always provide the option to pay in full at the time of purchase, and to provide this as a default option; (3) Obligate BNPL providers to assess the suitability and affordability of credit extended to consumers, to avoid causing them financial harm; (4) Prohibit BNPL firms from promoting their products among children or people in financial hardship; (5) Ensure that customers can access redress through fair and impartial channels when anything goes wrong; (6) Ensure that regulators and BNPL providers monitor and report publicly the impact of BNPL services over the different groups of consumers (Consumers International, 2022).

1.4.2. Regulations in the world

Since now it has been considered the BNPL regulation in general, but it is important to consider that each nation has a different situation. It is possible to summarize all the countries into two group based on their progress related to this issue. The first group is composed by countries that had already understood the urgency of developing an adequate regulatory framework for BNPL services, those countries are typically characterized by a good penetration of BNPL and a more mature BNPL market. Nations form the second group are still reluctant to intervene and prefer to further analyse the situation, this happens especially among those countries in which the BNPL penetration is too low to cause urgent concerns for authorities. This chapter will focus on an analysis of the various legislative situations that can be found among the most important BNPL markets, with a particular attention on the nations in the first group.

Australia an example of self-regulation

Australian regulators were probably the first to notice the potential risks related to BNPL. Despite that, Australian regulators gave to the BNPL industry a chance to self-regulate before enforcing strictest regulations. As result, on 1 March 2021 the Australian Finance Industry Association (AFIA) – an association composed by BNPL firms, consumer groups, government and regulators – published a voluntary code of conduct with the aim to increase consumer protections beyond current regulations.

This code imposes standards on its members that are above those required by the law or regulation. The main goals of this code are to promote a customer-centric approach, promote high industry standards, build best practices across the BNPL Industry and support compliance with legal and industry obligations. The code is based on 9 key commitments of Code Compliant Members (CCM) to the customers (Australian Finance Industry Association, 2022).

- Commitment to focus on customers. This point includes: the provision of high quality, responsive, inclusive and accessible service; the adherence to best industry practice to deal with vulnerabilities of customers; and the provision of a BNPL service that meets customers' needs, ensured by some actions like the consumer suitability assessment or the implementation of appropriate safeguards for users.
- Commitment to be fair, honest, and ethical. This means acting with transparency in the dealings with customers, not providing BNPL option to purchase goods or services there have legal restrictions and ensuring that retail partners are not engaged in unsolicited marketing or are not selling in an unlawful manner.
- Commitment to keep customers informed about BNPL service. It includes the fair, clear and timely provision of all the relevant information about the credit contract offered. These information should include: terms and conditions, fees structure, scheduled repayments obligations, customers purchases and total outstanding balance, complaints information, hardship information, enforcement policies, or any other information required by laws and regulations. This point also includes the commitment to perform the following actions: sending reminders about repayment obligations; contacting customers before commencing to charge late fees in case of missing payments; using fair, reasonable, and capped late fees; inform consumers in advance before a change in the fees or in the terms and conditions is applied; making sure that the advertising and promotional material is clear and not misleading or deceptive; excluding customers in financial hardship from receiving promotional material about BNPL; ensuring that retail partners adhere to the minimum standards outlined in the code; giving customers the possibility to pay out their contract at any time and without early repayment fees.
- Commitment to make sure that BNPL service provided is suitable for customers. The CCM should assess the customer suitability by verifying its identity and making an upfront assessment. The assessment for new customers will be successful if all the following five criteria are satisfied: (i) the customer is not a vulnerable customer; (ii) the customer meets the Suitability Assessment criteria, see clause 12 of the code; (iii) the customer makes or is able

to make an initial payment upfront, or within 25 days; (iv) the BNPL provider is reasonably satisfied with the information obtained about the customer; (v) the repayment term is determined as suitable and is consistent with the suitability assessment and the internal risk management processes of the BNPL provider.

In the case that the customer is an existing customer, so had already used the service, each new transaction will be assessed to ensure that the service will remain suitable for the customer. The assessment for existing customers will be successful if all the previously presented suitability criteria are met, the consumer is up to date with all payments, and he has shown appropriate repayment ability in previous transactions.

In every case, for transaction amount higher than certain thresholds additional criteria must be satisfied. The first one refers to comparison of the customer data, such as income and expenses, with some benchmarks to evaluate the consumer financial situation. The second one is a third-party sourced data analysis, i.e. a credit check.

- Commitment to undertake an ongoing review of the suitability of the services offered. CCM commit to monitor the BNPL service and how consumers are using it, to ensure these services remain suitable for customers. Additionally, they commit also to monitor and review how partner merchants are using the BNPL service to identify possible changes or improvements.
- Commitment to deal fairly with complaints. All the CCM promise to handle complaints promptly and fairly, in cases in which an agreement with the customer is not reached, customers will be provided with the information for the dispute resolution. In case of dispute customers can contact the Australian Financial Complaints Authority (AFCA), and in addition any breach of the Code can be reported to the Code Compliance Committee (CCC), an independent committee that has been established to monitor CCM compliance with the Code. The CCC will investigate on the issue presented and where it is appropriate, it will provide recommendations to resolve the complaint. In some circumstances the CCC is also able to impose sanctions upon CCM.
- Commitment to offer financial hardship assistance. CCM will provide information on how to request hardship and contact information for financial support services such as the National Debt Helpline. In case customers are in financial hardship, CCM will discuss with them about their situation and the options available, which may include negotiating a new repayment arrangement and waiving the fees and charges. During the period in which the CCM evaluates how to help a customer in hardship the fees and charges collection (including late fees) are suspended, and the customer default will not be listed on his credit reference file. In addition, if the CCM agree to enter into a financial hardship arrangement with the customer, the BNPL

provider is blocked to refer the customer to a third-party debt collection agency or charge additional late fees.

- Commitment to comply with legal and industry obligations. BNPL firms commit to: (i) respect customers' privacy and comply with privacy obligations; (ii) protect customers' personal and financial information from misuse, loss, or unauthorised access; (iii) not disclose that information to any other organisation unless is required to by law, or customer consent to do so.
- Commitment to support and promote this Code. Promotion will include making available the Code on CCM websites or the digital platforms and training CCM staff, agents and representatives to understand and comply with the Code.

The incumbent regulations in the United Kingdom

At present, UK BNPL firms are excluded from consumer credit regulation thanks to the article 60F(2) of the Financial Services and Markets Act 2000 (Regulated Activities Order) 2001 (RAO). This article allows BNPL providers to offer unregulated credit if the following conditions are met: (i) the agreement is a borrower-lender-supplier agreement, (ii) the credit borrowed is a fixed sum, (iii) the number of instalments does not exceed twelve, (iv) the repayments terms do not exceed twelve months, and (v) the credit is provided without interest or other charges (Milanesi, 2022). This mean that unregulated BNPL agreements do not assure the same level of consumer protection as regulated credit ones since BNPL firms do not need to be authorised and regulated by the Financial Conduct Authority (FCA), the UK's financial regulatory body. However, this unregulated situation is likely to terminate. In fact, following the Woolard Review – an in-depth analysis about the unsecured consumer credit market published in 2021 – the regulators understood the potential harm that an unregulated BNPL market could cause to UK consumers and announced plans to regulate BNPL credit.

A few months later, the HM Treasury published a consultation on a proposed regulatory framework for BNPL products, in order to understand the position of the wide variety of interested parties, including consumer groups, BNPL lenders, and retailers. The government, considering the responses to this consultation, in 2022 published a response that announces the intended approach to the regulation of BNPL markets. The HM Treasury concludes that the inherent risks of the BNPL products are fewer than those posed by interest-bearing loans, so the regulations of the mainstream credit market might be disproportionate. For these reasons, the government intend to ensure a

proportionate regulatory approach that will increase consumers protection without impeding the provision of useful financial products. To follow, the main areas of interest that emerged from the government's response to the consultation held in 2021 (HM Treasury, 2022).

- Advertising and promotions: currently BNPL lenders are subject to the UK Advertising Codes, but the government is willing to introduce further regulation to bring all BNPL promotions into the regime of financial promotions. This means that merchants will need to obtain the approval from authorised actors for promoting BNPL products.
- Pre-contractual information: imposing detailed requirements for information disclosure may not be appropriate for BNPL agreements. Instead, the government considered that requirements for pre-contractual information in BNPL agreements should be subject solely on FCA rules about pre-contract disclosure and adequate explanations. Some suggestions from the consultants highlighted the importance to introduce additional mandatory pre-contractual information, such as the fact that BNPL is credit, the interest rate and late fees, and the consequences of any failure to make repayments.
- Form and content of the credit agreement: the government is favourable to introduce requirement for agreements to be in a prescribed form with prescribed content. This would introduce a sufficient level of friction in the transaction, that will ensure that consumers receive all the necessary information about their obligations under the proposed agreement. As result, the consumer protection will be strengthened, and individuals will be able to make informed decisions.
- Improper execution: the government is willing to apply section 61 of Consumer Credit Act (CCA) requirements to BNPL agreements, in the same way as it does to other regulated credit agreements. Section 61 states that a regulated credit agreement is not properly executed unless a document in the prescribed form and containing the prescribed content is signed in the prescribed manner. Agreements that are not being properly executed are not enforceable by the lenders unless they obtain a court order.
- Creditworthiness and credit files: government declares that a proportionate regulation should be introduced in this field. This regulation should be based on the FCA's current rules on creditworthiness assessments, and it is the responsibility of FCA to decide if these rules need to be tailored for BNPL products. Additionally consistent and timely credit reporting across the three main credit reference agencies could be introduced for BNPL firms.
- Arrears, default and forbearance: the government want to extend to BNPL services, some FCA rules and the CCA requirements on the treatment of consumers in financial difficulty.

FCA rules require to treat customers in default or in financial difficulties fairly, taking into account the circumstances of each individual borrower. Additional requirements on this field will include the provision of post-contractual information on arrears and defaults, as well as the provision of information before a lender can take action to enforce the terms of the agreement. These regulations ensure that consumers are informed about their liabilities and obligations, giving consumers the possibility to limit their indebtedness. However, these requirements may need to be tailored for BNPL agreements given their short-term nature, especially in relation to the timing of the information provision.

- Section 75 of the CCA: regulators are willing to apply the section 75 of the CCA also to BNPL products. Under Section 75, the financiers are jointly liable for any breach of contract or misrepresentation by the retailer. This means that they are just as responsible as the retailer for the goods or service delivered, allowing consumers to also put their claim also to the credit provider (Which?, 2022b).
- Small agreements: to ensure consistency in consumer protection across the BNPL agreements, the Government intends to disapply section 17 of the CCA. This section excludes all the agreements under £50 from the CCA requirements, and since many BNPL transaction are under this threshold, maintaining this rule would lead to a potential discrepancy among similar BNPL transactions.
- Financial Ombudsman Service (FOS) jurisdiction: Government declare its intent to introduce regulations that gives to the consumers the ability to access the FOS for issues concerning the conduct of lenders. The FOS is an independent actor that settles complaints between consumers and businesses that provide financial services. These regulations would increase consumer protection by ensuring that consumers have access to appropriate dispute resolution mechanisms.

All these areas of intervention will be further analysed by regulators to develop a new regulatory framework that will be aimed at reducing consumers risks and source of potential harm, without hamper the market innovation or reducing the possibility for consumers to easily access at BNPL affordable credit. This new regulatory framework is expected to be adopted in late 2022 or 2023.

Regulatory evolutions in two leading markets: Europe and United States

Despite the great diffusion of BNPL started more than 15 years ago, this market is still unregulated in most of the European countries. Only in recent years the BNPL caught the attention of EU

regulators, and in June 2021 the EU Commission presented a proposal for a new directive to regulate consumer credit. This directive will replace the current Consumer Credit Directive (CCD), with the aim of bringing BNPL and other unregulated credit products under the scope of the regulation. Presently consumer credit products under €200, interest-free credits, overdraft facilities to be repaid within a month, and other forms of credit are excluded from the scope of application of the CCD. The new digital credit products and the fragmented CCD's application across Europe, raised concerns about an insufficient consumer protection. So national authorities decided to cooperate in order to develop a new and improved version of the existing regulation, the Consumer Credit Directive II (CCD II). The EU Commission published the proposed CCD II on July 2021. This proposal includes: (i) an extension of the scope of the CCD to cover the actually excluded BNPL schemes; (ii) an adaptation of information requirements to ensure their suitability also for digital devices; (iii) the imposition to BNPL firms to provide clear and detailed information about the credit offer and the pre-contractual information to their customers; (iv) the ban of practices that may exploit consumer behaviour, such as pre-ticked boxes or product tying; (v) the imposition of cap on interest rate and late fees; (vi) an improvement in the rules related to the consumer credit assessment, in order to make it adequate for each provider; (vii) an increased support required to BNPL firms towards consumers that are experiencing financial difficulties (Milanesi, 2022). The proposed CCD II is currently under examination by the EU Parliament and the Council of the EU and is expected to enter into force by 2024.

The actual legislative situation is quite similar for the United States, here BNPL market is still unregulated, and exploiting this situation many BNPL companies are rapidly expanding their businesses becoming a cause of concern for regulators and authorities. The Consumer Financial Protection Bureau (CFPB) in 2021 started to issue a series of market monitoring and review to better understand the impact of BNPL on consumers and identify eventual areas of intervention. Also, in this case the situation is fragmented among the different states, some of them are now monitoring BNPL market and evaluating the risks for consumer. Other are evaluating how to regulate BNPL products and are starting to review their existing credit laws. While some states are contemplating the creation of state statutes to regulate BNPL firms locally (Milanesi, 2022). To prepare themselves for these future changes, US leading BNPL firms have begun to self-regulate.

Grow now and regulate later: Singapore

Although in Singapore BNPL has not yet spread widely, it is interesting to consider the current

legislative situation in order to understand how is managed the advent of this innovative payment method in a country that focuses heavily on new technologies and innovation. In fact, Singapore aims to become a leading global FinTech hub, using technology to boost productivity, open up new opportunities, better manage risks and improve people's lives. Given Singapore's desire, it is necessary to create a regulation for BNPL industry which maximises the benefits of BNPL while limiting its risks and potential harm to society that can arise from an unregulated environment. Current Singapore's regulation makes a distinction between two type of credit, "Loan Credit" and "Sale Credit". Loan Credit is an agreement between two party, in which a lender give a certain amount of money to a borrower, who commit to repay it in a contractually defined time in the future. In contrast, Sale Credit, like a hire-purchase, refers to the provision of products or services that will be repaid with deferred payment. BNPL belongs to this second credit category.

Sale Credit is subject to the Hire-purchase Act (HPA), the requirements asked by this law are much milder than the ones required by the Loan Credit regulations. Financiers subject to HPA do not have to be licensed, the HPA require only that that in Regulated Agreements are specified certain details such as the cash price of the good hired, the applied and effective interest rate, any additional fees or charges and the repayment schedule. The HPA does not provide additional regulation on interest rates and fees, nor does it provide cap on them. One of the few areas of regulation of the HPA concerns the provision of notice and disclosure for certain minor administrative matters, such as the notice to the hirer when goods are repossessed. Although, even in this case there are no extensive disclosure obligations from parties such as in the Money Lending Act that regulate Loan Credit (Sng and Tan, 2022).

At present, despite poor regulations, the Monetary Authority of Singapore (MAS), stated that BNPL schemes do not to pose significant risk to household indebtedness, as they are not yet widely used compared to other payment methods. The MAS considers that current features of BNPL services, such as credit limits, cap on late payment fees or the absence of compounding interests, appear to be effective in mitigating the risk of excessive debt accumulation by consumers. For this reason, the regulation of the BNPL market is not considered an urgent issue, and today the aim of Singapore legislators is therefore to develop a proportionate regulation for BNPL without limiting its growth (Sng and Tan, 2022).

2. METHODOLOGY

In this chapter will be explained the methodological approach to the census and the analysis conducted. The census was divided into two steps, in the first it was compiled a list of all the company active on the market, in the second it was created an Excel database containing all the information related to these companies. After the creation of the census the following passage was the extraction of all the relevant information from the database summarized in the graphs used for the analysis phase.

2.1. First step: Census

During this initial step a list of all companies offering BNPL services is compiled. This census was developed between July 2022 and September 2022, and three main sources were used in this process: Crunchbase, the census of 2021, and online materials.

Crunchbase is an online platform that provide business information about private and public companies. Their content includes investment and funding information, founding members and individuals in leadership positions, mergers and acquisitions, news, and industry trends (Wikipedia, n.d.). In order to identify all the available BNPL firms on this platform, two filtered searches are conducted. The first search was conducted filtering all those companies that have “BNPL” or “Buy Now, Pay Later” words included in their name, tags, or description. The result obtained was a database of 149 companies. The second search was conducted filtering all those companies that are related to “Instalment” or “Instalments”, and not to “BNPL” or “Buy Now, Pay Later” in order to avoid redundancies in the two databases. This second search resulted in a database of 341 companies. The next steps were the analysis of the companies included in these databases and removal of all those that did not actually offer BNPL services.

Since there are not real standards that univocally define a BNPL service, sometimes the boundaries between BNPL and other existing credit product are very blurred and uncertain. So, in order to define if a company offers BNPL or not, some guidelines have been considered. A service is considered as BNPL if all the following conditions are met:

- The service allows consumers to make purchases and pay later, by deferring the date of the payment or dividing it into instalments.
- The process involves at least three actors: a consumer, a retailer and a BNPL provider (in some cases the retailer and the BNPL provider can coincide).
- The repayment terms are usually lower than 12 months. Some exceptions have been applied where companies offer different repayment terms for the same service (e.g. duration from 3 to 36 months).
- Customers' fees are low or none.
- The approval of the credit request requires only few minutes or at most few hours. Some exceptions have been applied for services that require a pre-registration before having access to the service.

All those information has been obtained from the company website or social media, including LinkedIn, Instagram and Facebook. This screening process resulted in a list of 153 companies offering BNPL services, obtained from the two databases imported by Crunchbase.

The second source utilized is a BNPL census conducted by Politecnico di Milano students during 2021. This database was composed by 130 companies, and also in this case a screening phase is conducted in order to understand if all of these companies were still active and were still offering BNPL services. The result of this process is the elimination of 23 companies and the inclusion of the remaining companies in the new census. These firms were eliminated for four main reasons:

- The firm was closed.
- The firm was acquired or merged. Firms that were continuing to operate under their previous brand were not eliminated.
- Unavailability of information about the firm current situation, i.e. website was not accessible and the firm was not registered on social media or do not have recent activities on them.
- The firm no longer offer BNPL services, or their services do not respect the previously presented guidelines to identify a BNPL service.

Of the 107 companies saved, 62 had already been identified from the Crunchbase, while 45 of them are not still present in the new census. So, the number of companies listed grew to 198.

The third and last source was composed by all the information about BNPL companies found through online materials. These materials include:

- Reports and web articles analysed in the Literature chapter.
- News related to BNPL reported by the Osservatori Digital Innovation of Politecnico di Milano in their innovative payments press release during 2021 and 2022.
- Dealroom.co online database of companies offering BNPL.

The new companies obtained from these sources were 102. Adding these companies to the previously compiled list, a final count of 300 companies offering BNPL services was obtained.

2.2. Second step: Database

The second step consists in the creation of a database containing all the relevant information about the 300 companies of the census and the services that they offer. Since a company can offer multiple different BNPL services, the database was divided into two parts. The first was composed by general information about the company offering the BNPL service, while the second is composed by more specific information about all the different services offered by the 300 companies analysed. These databases were fulfilled using three main sources: Crunchbase, the companies' websites, and the companies social media (including LinkedIn, Facebook and Instagram).

2.2.1. Database part 1: the BNPL companies

The first part of the database is an Excel paper that contains 27 different variables describing the 300 companies founded in the census. A description of these variables and the related considerations are provided as follow.

Organization Name: it is the name of the firm or group of firms that offer the BNPL service. This column also includes, if present, the names of the BNPL products in brackets.

Website: it is the website of the company or the website of the BNPL product, if it exists and is not included in the company website.

Type: this variable represents the type of company, defined considering the main business and characteristics of the underlined firm. 15 different types of company were found:

Bank: it is a financial institution that is licensed to accept checking and savings deposits and make loans. Banks also provide additional services such as individual retirement accounts, certificates of deposit, currency exchange, and safe deposit boxes (Investopedia, n.d.).

BNPL FinTech: it is a FinTech company (see definition below) that has the BNPL as its core business. Typically, these companies have their area of operations limited only in the provision of BNPL services and do not offer other services or products.

Credit Card Company: it is a company that has the provision of credit card to consumers and businesses as core business. A credit card is a payment card issued to users – cardholders – that enable them to pay a merchant for goods and services using a line of credit made available by the card issuer. The cardholders then have to repay monthly the amount borrowed plus additional charges (Wikipedia, n.d.).

Digital Wallet: it is a company that has the provision of a platform, called digital wallet or e-wallet, as its core business. A digital wallet is an electronic device, online service, or software program that allows one party to make electronic transactions with another party. Customers can use e-wallets to make payments, using previously deposited money or linking their bank account and payment cards (Wikipedia, n.d.).

eCommerce Platform Provider: it is a company that has the provision of ecommerce platforms as its core business. An ecommerce platform is a software that enable retailers to perform all the activities needed to make online sales, such as managing catalogued products, registering purchases, and managing customer relationships.

Financial Advisory Company: it is a company that has the provision of financial advice or guidance to customers for compensation as its core business. The service provided by these companies are various, they include investment management, tax planning, estate planning, and portfolio management to insurance products (Investopedia, n.d.).

Finance Company: it is company that has the provision of personal and business loans as its core business. Unlike banks, these companies do not receive cash deposits from clients and do not provide other banking services, such as checking accounts. Finance companies make a profit from the interest rates they charge on their loans, which are normally higher than the interest rates that banks charge their clients (Encyclopedia, n.d.).

FinTech: it is a company that has the provision of financial services through new technology as its core business. Such technologies include artificial intelligence, blockchain, cloud computing, and big

data. Some examples of services provided are mobile banking, investing, borrowing services, and cryptocurrency. Financial technology companies are a sort of evolution of traditional financial companies based on new technologies.

Lending Platform: it is a company that has the provision of lending a platform as its core business. A lending platform is a system that connect individuals asking for a loan with lenders willing to invest their money. These systems are defined as multi-lender platforms when a loan can be provided by multiple investors, or single-lender when there is only one investor for each loan. Another division can be made considering the type of lenders, some platform allows only professional lenders while other includes also common people that want to invest their savings into the lending market.

Marketplace: it is a company that has the provision of a marketplace as its core business. A marketplace is a platform where multiple vendors can sell their product or services to consumers online. This differs from an online store since it allows the presence of multiple brand or multiple vendors, while an online store is typically single-branded and owned by the vendor.

Multi-Services Platform: it is company that has the provision of a multi-services platform as its core businesses. A multi-service platform is a system that give consumers the access to multiple services offered by multiple service providers. An example is Grab, an Asian company, that offer consumers the possibility to order food delivery, transportation services and other type of services directly from the same mobile application.

Payment Gateway Provider: it is a company that has the provision of payment gateway as its core business. A payment gateway is a technology that authorizes merchants to accept different type of payments – such as credit card or debit card – in their physical and online store. The gateway is not directly involved in the money flow, typically it is a web server to which a merchant's website or POS system is connected.

Retailer: it is a company that buys products from a manufacturer or wholesaler and sells them to end customers as its core business. These companies act as intermediaries between the manufacturers that create the product and the final customers that use it.

Super-app: it is a company that has the provision of a super-app as its core business. A super-app is a mobile or web application that provides multiple services, including payment and financial transaction processing. These applications can be considered as an all-encompassing self-contained commerce and communication online platforms that embrace many aspects of personal and commercial life (Wikipedia, n.d.). An example of super-app is the Chinese application WeChat.

Tech Company: it is a company that has the development and sale of technology-based products as its core business. These companies offer products such as digital electronics, software, hardware, and internet-related services. A well-known example of a tech company is the US multinational Apple.

Start-up: this variable defines if a company is a start-up or not. Sometimes this classification was complicated by the fact that many new-born companies do not present sufficient evidences to define if they can be considered as start-ups. Therefore, to overcome this problem, the following guidelines were taken into consideration.

A company is never considered as a start-up if:

- It has been acquired by another organization or it has acquired another organization.
- It has merged with other organizations.
- It has been founded before 2018 (only one exception was done, since the company Bidhaa Sasa declares itself to be a start-up).
- It is a suborganization of an established company.
- It is a component of a group of companies.

Among the organizations that did not present the aforementioned characteristics, a firm is always considered as a start-up if:

- It declares to be a start-up on its website or social media.
- Is defined as a start-up on Crunchbase, recent online materials.

All the remaining companies, those fulfil none of the conditions described until now, in absence of evidence to the contrary, are classified as a start-up.

Source: this value indicates from which source the company is identified. The sources taken into consideration are four: the first database obtained by Crunchbase (source 1), the second database obtained by Crunchbase (source 2), the census of 2021 (source 3) and the online materials (source 4). A firm may be present on multiple sources, only in case of sources 1, 2 and 3. Some companies present on the first three source are present also in the fourth, but in these cases the source 4 is not mentioned since it is not relevant for the analysis, as a result the fourth source is reported only for companies that were univocally present in that source.

Founded Date: this variable identifies the year in which the underlined company launched its first BNPL service. It does not refer to the date in which the company was founded. This distinction is particularly important for those organizations that do not offers BNPL as their core services, since for BNPL FinTech the date of foundation generally coincides with the date in which it was launched

the first BNPL services. This choice was done since many traditional and established players, like banks, are usually founded during the XX century, but they started to offer BNPL only in recent years. So, it would not have been useful for the analyses that would have been conducted taking into account the year of birth of the companies.

Headquarters Region: it defines the headquarter's location of the underlined firm. All these data had been taken from Crunchbase, or when not available on this source they had been searched on LinkedIn.

Payment Method: this column reports all the BNPL payment mechanisms used by the companies analysed. The payment method defines how customers select and use the BNPL option. A single company can offer multiple payment methods. This variable has 17 possible categories.

After-sale Split: customers can convert their purchases, paid with a digital wallet or a card connected to their bank account, into periodic payments from the transaction section of their account.

Barcode: this mechanism is based on a sort of pre-approved line of credit. Before making a purchase, the customer request the credit necessary for that purchase on the BNPL provider's website or mobile app, and if accepted he receives a barcode that can be used to pay for the purchase. The customers can decide to finance a purchase only partially, by requesting a credit lower than the purchase value.

Bill Financing: customers can split the cost of their bills by sending to the BNPL provider all the necessary information about the bills that they need to pay. If the request is accepted, the provider pay the bill for the customer, and the latter repays the provider in instalments.

Card: the BNPL firm provides to their customers a card that they can use to pay their purchase in instalments. The providers included in this category are those companies that offered BNPL through card, but they did not specify which is the type of card. While companies that specified the type of card used fell into the following categories – Credit cards, Debit cards, and Virtual cards.

Card After-sale Split: customers can convert their purchases, paid with specific credit or debit card, into periodic payments from the transaction section of their account. This is a particular declination of the After-sale split.

Checkout: the BNPL payment option is integrated in the merchant website or POS. For online shop the integration is made using API and the BNPL payment can be directly selected in the checkout phase. While for physical store typically customers have to apply for the credit request at the checkout counter and pay through the obtained barcode, QR code, or coupon. This mechanism differentiates from "Barcode", "QR Code" or "Coupon", since it is applied during the checkout phase and is linked

to a specific transaction, while others are more similar to a line of credit from which customers can draw the needed amount in form of coupon, QR code or barcode.

Coupon: similar as “Barcode”, but in this case the customer obtains a coupon.

Credit Card: the BNPL option is integrated into a credit card, so the customers that pay using it can decide to split the payments directly during the checkout phase. This differentiates from traditional credit card mechanism since the purchase amount is deferred in a predefined number of instalments with a predefined repayment schedule and low or none interests or fees, like any traditional BNPL credit.

Debit Card: similar as “Credit Card”, but in this case the BNPL option is integrated into a debit card.

Digital wallet: the BNPL option is directly integrated into the digital wallet payment system. So, customers that pay using their digital wallet can decide to split the payments directly during the checkout phase.

Financing: this mechanism is a hybrid of traditional consumer credit and BNPL. The consumer credit is a credit extended by financial institutions or banks to individuals to buy goods or services. While this process presents also features that characterize BNPL, such as low fees, short repayment terms and real-time approval. Typically, “Financing” is a process used at POS through which consumers can buy goods or services and defer the payments thanks to the credit extended by a financial company or by a bank.

Invoice Checkout: this is a particular declination of “Checkout”, in this case the BNPL option is integrated in the checkout of an invoice.

Invoice Financing: customers can split the cost of their invoice by sending to the BNPL provider all the necessary information about the invoices that they need to pay. If the request is accepted, the provider pay the invoice for the customer, and the latter that repays the provider in instalments.

Marketplace Checkout: customers that make purchases from the marketplace owned by a BNPL provider, can select the BNPL option at the checkout phase. In fact, some BNPL firms have a marketplace in which their partner merchants can offer their products or services to consumers that can purchase them with BNPL payments.

QR Code: similar as “Barcode”, but in this case the customer obtains a QR code.

Virtual Card: this payment mechanism is based on a virtual card that consumers can use to pay their purchases with BNPL. There are two types of virtual card, the first are one-time card that have a

functioning process similar to the “Barcode”. While the second type of virtual cards are linked to a line of credit, so can be used multiple times. In this second case the customers that apply to the BNPL provider website or mobile application receive a sort of lines of credit accessible with the associated virtual card. So, the customer can pay his purchases with the credit available on the virtual card and then repay the BNPL provider in instalments.

WhatsApp: customers can activate the BNPL option, by sending to the BNPL provider all the information related to the purchase they are willing to make via WhatsApp. If the request is approved the provider pay the merchant and the customer repay the provider in instalments. This is a unique mechanism found in only one company, the Nigerian firm CreditClan.

Instalment/Pay Later: this variable identifies which types of BNPL services the underlined firm is providing. There are three possible options:

- Instalment: the BNPL company allows customers to defer the payment of their purchases in instalments.
- Pay Later: the BNPL company allows customers to postpone the payment of their purchases. In this case the consumer after the termination of the contract will have to repay the overall sum in one solution.
- ALL: the BNPL company offer both Instalment and Pay Later.

Side subsidized: this variable defines what is the party from which the BNPL provider get its revenues in form of fees or interests (late fees application is not taken into consideration for this analysis, since they are not a stable and certain source of revenues). There are two possible party that a BNPL firm can subsidize – consumers or merchants. In the cases marked with “ALL” the sides subsidized are both customers and merchants. It is important to specify that BNPL companies can provide multiple services, and some of them can apply fees to consumers while other not. In order to define the values of this column, all the services offered by the same company were taken into consideration. E.g. a company offers two different BNPL services, the first applies fees only to consumers, while the second applies fees only to merchants. In this case the side subsidized will be “ALL”.

Private: it defines those firms that offer BNPL options only on their proprietary ecommerce website or POS. One example is Ikea that has developed a proprietary BNPL solution that is offered only for the purchases made on its online store.

Generalist: it defines those firms that are not specialized on few categories of products or industries. This means that they offer their BNPL payments to buy goods or services from at least four different industries.

Focalized: it is the opposite of “Generalist”. It defines those firms that are specialized on a single or few (maximum three) categories of products or services. An example is a BNPL provider that offer the possibility to pay in instalments only for medical or healthcare expenses.

Industry (if “Focalized” is true): defines in which industries a focalized company offers its BNPL services.

Partner Merchant: it defines those firms that make their BNPL payment option available only at merchants that have a partnership.

All Merchant: it defines those firms that make their BNPL payment option available at almost all merchants (a partnership with the merchant is not required).

Hybrid: it defines the cases in which a firm offers to its consumers the possibility to use its BNPL payment services at both partner merchant and non-partner merchant.

Country: it lists all the country in which the underlined company offers its BNPL services. Organizations that offer their services globally or in multiple countries all around the world (at least one per continent) are classified as “Global”.

Area: it defines which is the geographical area where the underlined company offers its BNPL services. Nine main areas were taken into consideration, each of them composed by one or more countries:

- Africa: Angola, Ghana, Kenya, Nigeria, Rwanda, South Africa, Uganda.
- Asia: Brunei, Cambodia, China, Hong Kong, Indonesia, Japan, Kazakhstan, Laos, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, Uzbekistan, Vietnam.
- Europe: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland.
- Indian area: Bangladesh, India, Pakistan, Sri Lanka.
- Middle east: Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Saudi Arabia, Turkey, United Arab Emirates.
- North America: Canada, US.

- Oceania: Australia, New Zealand.
- South America: Argentina, Brazil, Chile, Colombia, Dominican Republic, Ecuador, Mexico, Perú, Venezuela.
- United Kingdom.

The composition of these areas was done considering the characteristics of these areas and the fact that many BNPL providers typically offer their services only on countries that are in the same geographical areas. The separation between Indian area and Asia was done since these two areas presented several different characteristics and usually the BNPL company analysed focuses their operations in only one of these two areas.

B2C/B2B: it defines if a firm offer its services to private consumers (B2C) or to business customers (B2B). Some companies, marked as “ALL”, offer their services to both B2C customers and B2B customers.

White Label: it defines if a company offer a white label BNPL option. White label means that the BNPL provider give to partner merchants the possibility to offer a cobranded BNPL payment option or an option entirely branded by the retailer.

Offline/Online: this variable identifies which companies offer their BNPL product only at online stores, which only at POS, and which offer them at both online and physical channels.

Repayment Options: it defines which payment methods can use a customer to repay its instalments to the underlined company. The following options were identified:

- Bank account: repayment is made directly by linking the customer bank account.
- Bank transfer.
- Cash: customers can pay their instalments at over-the-counter shops.
- Check.
- Credit card.
- Debt card.
- Pre-paid card.
- Digital wallet.
- UPI: it is an Indian real-time payment system.
- EFT: they are electronic money transfers from a bank account to another.
- Mobile money: it is a particular type of electronic wallet.
- Paycheck: the instalments amount is directly deducted from the consumer paycheck.

- Crypto
- Bank clearing
- Mark
- Cheque card

Variables Analysed to Grant Credit: this column registers all the variables that the underlined firm analyses before extending the credit to a customer, they are used also for the definition of customers' credit limits. Three main variables were identified:

- **Soft Credit Check:** the firm apply credit check that do not have impact on the customers' credit profile.
- **Hard Credit Check:** the firm apply credit check that have an impact on the customers' credit profile.
- **Credit check:** the firm apply credit check but did not specify if they are soft or hard check.

In addition to these, have been identified other variables subject to BNPL providers' analysis, they include customer's identity, location, job, income, bank account, card balance, finances, revenue or sales history (for business customers), statistical analysis, solvency analysis, and payment history (i.e. the customer behaviour in previous transaction undertaken with the underlined company).

Conversion Rate: it defines the average increase in the conversion rate that a partner merchant experiences after the introduction of the BNPL option offered by the underlined firm. All these data are declared by BNPL providers in their website.

Average Order Value: it defines the increase in the AOV that a partner merchant experiences after the introduction of the BNPL option offered by the underlined firm. All these data are declared by BNPL providers in their website.

Other: it defines all other possible quantifiable benefits that a partner merchant experiences after the introduction of the BNPL option offered by the underlined firm. Only benefits declared by BNPL providers in their website were reported.

Default: this variable defines what happen in case a customer defaults (i.e. he do not repay its debt). The most common consequences are three: (i) the consumer account is suspended, to block him to make additional transaction; (ii) the data about default and missing payments are reported to credit bureaus, having a negative impact on the consumer's credit profile; (iii) the BNPL provider employ a third-party agency for the collection of the debt owned by the consumer. Other less frequent consequences identified are the seizure of assets, the product blocking, the seizure of the product and

the booking cancellation. All those consequences are very rare since they affect BNPL transaction related only to specific products, e.g. a booking cancellation can be applied only to flight tickets or hotel rooms.

2.2.2. Database part 2: the BNPL services

The second part of the database is an Excel paper that contains different variables describing all the different services offered by the 300 companies founded in the census. The number of services analysed is 402, a value higher than the number of companies, since a firm can provide one or more BNPL services at the same time. The subdivision of the services was done considering the characteristics of the services themselves, in particular the fee structure and the repayment schedules. Two services offered by the same provider are considered as separate if:

- One applies fees to consumers while the other not.
- One applies fees to merchants while the other not.
- One applies late fees to consumers while the other not.
- One is a “Pay Later” service while the other is an “Instalment” service.
- The services are already presented as separate options by the BNPL provider, this usually happens for services that have different payment terms and different frequency of payments. These cases were assessed individually, not following strict and univocal rules, but more subjective assessments based on the characteristics of the repayment schedule. E.g. the option to pay in four fortnightly instalments and the option to spread the purchase into 12 monthly payments are usually considered as separated services. While those services with multiple repayment term options – i.e. from 3, 6 or 12 months – were considered as a single service.

The variables taken into consideration for the creation of this second database will be presented and discussed below.

The first five variables – i.e. **Organization Name**, **Country**, **Area**, **B2C/B2B**, **Online/Offline**, and **Payment Method** – are the same as the one considered in the first database created, the only difference is that this time they refer to a single BNPL service and not to the overall services offered by a company.

Number of Instalments: this value defines in how many instalments the customers can spread the cost of their purchases thanks to the underlined BNPL service. Some services could have multiple instalments option, e.g. customers can decide to spread their payments into 6, 9 or 12 instalments.

While others have a range that define the possible number of instalments, e.g. customers can spread their payments from 4 to 12 monthly payments. In this second case, sometimes the customer cannot choose all the possible terms, but the choice is limited to three or four option selected from the range by the BNPL provider depending on the results of the customer's credit assessment phase.

Frequency of Payments: it defines how often customers must repay their instalments. These values are reported in days and typically the frequency is weekly, fortnightly, or monthly. Some services offer to customers the possibility to decide the frequency of repayment among the three options presented above.

Max Instalment Terms: this value defines the maximum duration (in months) of the repayment terms of the underlined services. This variable is introduced to facilitate the classification of those services that have multiple repayment terms.

Pay Later Terms: it defines how many days customers can postpone the payment of a purchase thanks to the underlined BNPL service. This column refers only to those services that are classified as "Pay Later".

Revenue Model, Fee from Merchants: this variable report if the underlined BNPL service applies fees or other charges to merchants.

Revenue Model, Fee from Customers: this variable report if the underlined BNPL service applies fees or other charges to customers (late fees excluded).

Revenue Model, Late Fee from Customers: this variable report if the underlined BNPL service applies late fees to customers.

Revenue Model, Other Fee from Customers: this variable report if the underlined BNPL service applies other costs to customers. Interest rate, monthly fees, subscription and administrative fees are excluded, since they were already included in "Fee form Customers". The costs considered in this column are those costs that could be applied to customers only in particular cases, e.g. early repayment fee. For this reason, they had not been considered as operational revenues and they had not been included in the definition of the revenue models of the BNPL firms analysed.

Merchant Fee, Fixed Amount: it reports the value of all the fixed transaction fee applied to merchants by the underling service. These fixed fees are applied at each transaction paid with the considered BNPL service.

Merchant Fee, Transaction Fee: it reports the value of the all the variable transaction fee applied to merchants by the underling service. These variable fees are applied at each transaction paid with the considered BNPL service, and usually are a percentage of the total amount of the transaction.

Merchant Fee, Other: this column reports the value of all other fee applied to merchants by the underlined service. This category includes all those fee that are not related to a single transaction, e.g. the application fee.

Customer Fee, Fixed Fee: it reports the value of all the fixed transaction fee applied to consumers by the underling service. These fixed fees are applied at each transaction paid with the considered BNPL service.

Customer Fee, Interests: it reports the value of the interest rate applied to consumers by the underling service. The interests are a variable fee applied at each repayment due to the BNPL provider, usually they are computed as a fixed percentage of the instalment amount.

Customer Fee, APR of Financial Option: this value defines which is the APR of an interest-bearing service. The APR, or Annual Percentage Rate, is a percentage that represents the actual yearly cost of funds over the term of a loan. This includes any interests or fees associated with the transaction. This indicator can be used to compare the costs of different credit options (Investopedia, n.d.).

Customer Fee, Monthly Fee: this variable identifies the value of the monthly fees applied by the underling service. A monthly fee is a cost applied to consumers by the BNPL provider each month during the duration of the credit contract, e.g. a contract that have 12 months duration will apply 12 monthly fees. A typical example of monthly fees are the administration fees. Some services apply weekly fee instead of monthly ones, in these cases they are reported by multiplying their value by 4.

Customer Fee, Other: this variable identifies the value of all other fees and costs applied to consumers by the underling BNPL service. Other fees include all the fees not related to a single transaction – such as the activation fees and other one-time fees – and all the fees that occur only in specific occasions – such as early payment fees, reactivation fees, delay option fees, or fees applied when the repayment is done with particular payment methods (e.g. paying with bank transfer can require additional costs).

Customer Fee, Late Fee: this variable identifies the value of the late fee applied by the underling BNPL service when a consumer misses a payment. The values reported are the penalties that can be applied at each missed payment. Sometimes the late fee applied can be variable, depending on the BNPL transaction amount.

2.3. Third step: Data mining

This third step consist in the extrapolation of the relevant data from the databases using pivot tables. Initially for each variable was created a graph representing the frequency of all the possible values that the considered variable could assume. Then the second step was the creation of additional graphs for each variable adding filters based on the values of other variables. Some examples can be the frequency of payments filtered by geographical area, or the foundation date filtered by the company type. Finally, among all graphs obtained, the most interesting and relevant were selected for the analysis.

2.4. Errors, inconsistencies, and missing data

The data sourcing phase, necessary for filling the databases, was sometimes affected by a lack of information. The main problems faced were: (i) unavailability of some BNPL companies websites, this did not allow to collect further information in addition to the fact that the underlined offers BNPL services; (ii) the data reported on the company website were incomplete; (iii) BNPL firms prefer to not disclose some data to public.

As a result, not all the cells of the database could be fulfilled, so some information were added on the basis of supposition and unverified considerations, while other cells are leaved empty. Consequently, the resulting analysis must be intended just an estimation of the real BNPL market situation, considering the presence of a certain margin of error on the results obtained. To follow, the main problems encountered, and the methods used to deal with them.

The first issue is related to the date in which was launched the BNPL offer. In fact, both CrunchBase and the social media of the companies analysed report only the date when a company was founded and not the year in which it started offering BNPL services. This problem for BNPL FinTech can be easily solved since the year of foundation generally corresponds to the year in which they started offering BNPL services, being their core business. Furthermore, these companies being relatively young, it is quite unlikely that they had changed their core business by inserting the BNPL later. The resolution of the problem was more complicated for companies that are not specialized in BNPL, like banks or credit card companies. To identify the data when they launched their first BNPL, three main sources were considered, the company's newsletter, the news taken from the press review of the Digital Innovation Observatories, and news researched on Google News. Despite this, a reliable date has not been found for all companies, in fact 21 cells have remained empty.

The second issue was related to the size subsidized and the revenue model. This represents the major problem encountered, in fact most of the services analysed do not report information about the presence of fees or other costs for the partner merchants. The same issue, but in fewer cases, was verified also for customers. This problem has been solved, where possible, by assuming the presence or absence of fees taking into consideration the following criteria:

- All BNPL services active on credit cards, debit cards, or virtual cards that allow consumers to purchase from any merchants, in the absence of evidence to the contrary, were considered free for these merchants. In fact, in this case, although fees are applied to accept payment by card, they do not directly refer to the use of the BNPL, as they would be paid even in the absence of it. Furthermore, it is very unlikely that a retailer will have to pay for a service that he has not decided to offer. So, unlike merchant partners, it would make no sense that merchants who are not partners have to pay the BNPL providers.
- For all services that declare that they do not charge consumers, in the absence of evidence to the contrary, it has been assumed that the costs are borne by the merchants. In fact, it would be rather unlikely that the revenue model of a BNPL service has no sources of income, or that the only sources are late fees or other types of fees (included in “Other Fee from Customers”) since they are applied only on particular occasions. Seven exceptions to this criterion are done, four of them since they declare that they did not apply charges neither to consumers nor to merchants. While the other three exceptions are done since they respect first criterion mentioned. All those particular cases will be discussed in the analysis chapter providing more explanation about these exclusions.
- For all services that declare that they do not charge merchants, in the absence of evidence to the contrary, it has been assumed that the costs are borne by the consumers.

Despite this filling process, the definition of some revenue models remained incomplete. Specifically, it was not possible to define for 132 services if there were costs applied to merchants, and for 74 services if there were costs applied to consumers. These results affected also the identification of the size subsidized in the first database, in fact:

- For 54 companies it was possible to define only that they derive their earnings from consumers, without however identifying whether they also apply costs to merchants, as no information was obtained regarding merchants’ fees.
- For 15 companies it was possible to define only that they derive their earnings from merchants, without however identifying whether they also apply costs to consumers, as no information was obtained regarding consumers’ fees.

- While for 52 companies it was not possible even to define any information regarding the sources of income, as no information was obtained regarding merchants' fees or consumers' fees.

As a result, for only for 179 firms it was possible to define the sides subsidized with sufficient information about the two possible subsidy sides. While for other 69 firms it was only possible to identify if one of the two sides was charged, but it was not possible to define whether the other was charged too.

The third issue found is the presence of missing data. This problem was also found in the cases previously analysed, but for them it was possible to find remedies that limited the unavailability of information. While, for the following variables it was not possible to define a reasonable solution to this problem, so the relative database cells were leaved empty.

- For 5 companies it was not possible to define which type of firm they are or their core business.
- For 6 companies it was not possible to define whether they were start-up or not.
- For 5 companies it was not possible to define where is located their headquarter.
- For 26 companies it was not possible to define the payment methods, i.e. the mechanism through which they offer their BNPL options.
- For 56 companies it was not possible to define if they offer "Instalments" or "Pay Later".
- For 7 companies it was not possible to define if they are "Private".
- For 8 companies it was not possible to define if they were "Generalist" or "Focalized", and eventually in which industries they were specialized.
- For 11 companies it was not possible to define if they offer their BNPL services at partner merchants, all merchants or both of them.
- For 21 companies it was not possible to define in which countries or geographical areas they offer their BNPL services.
- For 10 companies it was not possible to define if they offer their BNPL services to private customers, business customers or both of them.
- For 10 companies it was not possible to define if they provide white label BNPL solutions or not.
- For 30 companies it was not possible to define if they provide their BNPL services on online channels, on offline channels or on both.

- For 114 companies it was not possible to define what are the payment options offered to customers to repay their debt.
- For 116 companies it was not possible to define a single variable taken into consideration during the credit assessment phase.
- For 151 companies it was not possible to define what happens in case of customers' default.
- For 75 BNPL services it was not possible to define the number of instalments or the maximum instalment terms. For 58 of them was not even possible to define if they are "Instalment" or "Pay Later" services.
- For 60 BNPL services it was not possible to define the frequency of the repayments of the instalments. For 58 of them was not even possible to define if they are "Instalment" or "Pay Later" services.
- For 153 BNPL services it was not possible to define if they apply late fees to customers in case of missing payments.
- For 143 BNPL services it was not possible to define if they apply "Other fees" to customers.
- For 294 BNPL services it was not possible to define if they apply "Fixed amount" fees to the merchants, and the eventual values of these fees.
- For 335 BNPL services it was not possible to define if they apply "Transaction fee" to the merchants, and the eventual values of these fees.
- For 345 BNPL services it was not possible to define with certainty if they apply "Other" fees to merchants, and the eventual values of these fees.
- For 139 BNPL services it was not possible to define if they apply "Fixed fee" to the customers, and the eventual values of these fees.
- For 170 BNPL services it was not possible to define if they apply interests to the customers, and the eventual interest rates applied.
- For 199 BNPL services it was not possible to define the APR.
- For 145 BNPL services it was not possible to define if they apply monthly or weekly fees to the customers, and the eventual values of these fees.
- For 5 BNPL services that applies "Other fees" to customers, it was not possible to define the values and type of these fees.
- For 72 BNPL services that applies late fees to customers, it was not possible to define the values of these fees.

The fourth and last issue encountered during the database creation phase is the incompleteness of the data. This issue refers to the possibility that the fields filled in the database contain incomplete or

possibly incorrect information. This occurs mainly for two reasons: (i) the analysed companies were not obliged to report the underlined information in a complete manner, (ii) the analysed companies decided to report the underlined information only partially. An example of this second case concerns the variables analysed during the customer credit assessment phase, in fact many companies prefer not to disclose further information other than the fact that they carry out credit checks, in order to keep secret their risk estimation and customer evaluation algorithms. This issue could bring two possible consequences:

- Errors in the classification, e.g. a company that do not apply interest or fees to consumers but apply a not declared fixed fee for the activation of each BNPL purchase could be considered as a free service to customers when instead it is not. This risk could affect all binary variables, i.e. those variables that can only assume two possible values – “YES” or “NO”.
- Incomplete information classified, e.g. a company could not report all the possible consequences that happen in case of customers default, declaring only the suspension of the customer’s account but not the sharing of information with credit bureaus.

For all these problems reported, the results obtained during the analysis phase reported in the following chapter have to be considered as estimates of the current BNPL market, thus presenting a margin of error that varies depending on the variable under analysis. So, these analyses can be compared to market research carried out on customer samples, in fact also in this case the values recorded in the various fields analysed are obtained through company samples and therefore they can be considered only as an estimation of the real BNPL market values.

3. ANALYSIS

This chapter reports the results of the analyses carried out, outlining the main characteristics of the various BNPL services and of the companies that offer them. The data used during this analysis phase were obtained from the information collected during the census phase, described in the previous chapter. These data were then aggregated, filtered and reprocessed in order to obtain graphs that highlight the various aspects of the BNPL market.

The analysis is divided into two parts, the first concerns an analysis of the main characteristics and the operational processes of the BNPL companies present in the census. The second part instead focuses on an analysis of the revenue model and the fee structure that characterize the various BNPL services identified in the census.

3.1. BNPL market general features

Currently 300 companies have been identified offering BNPL services across the market. These companies offer 402 BNPL services, which differ in repayment schedules or fee structure.

BNPL is a rapidly growing market, in fact it is since 2013 that the number of companies joining this industry has been increasing year by year. The greatest growth has been seen in recent years, in fact as many as 50 companies launched their first BNPL service during 2021, while 44 in 2020. Furthermore, although the census was carried out in mid-2022, this year 20 new entrants were registered on the BNPL industry. These data show that BNPL is a growing market, not only from the point of view of demand, but also of supply. Although this growth is a sign of a thriving industry, on the other hand this increase in supply will lead to an increase in market competitiveness. Therefore, it is possible to hypothesize that the future BNPL market will be characterized by:

- Lower margins, due by the increased competition.

- Greater innovation and differentiation of the services offered, necessary to establish in a competitive market.

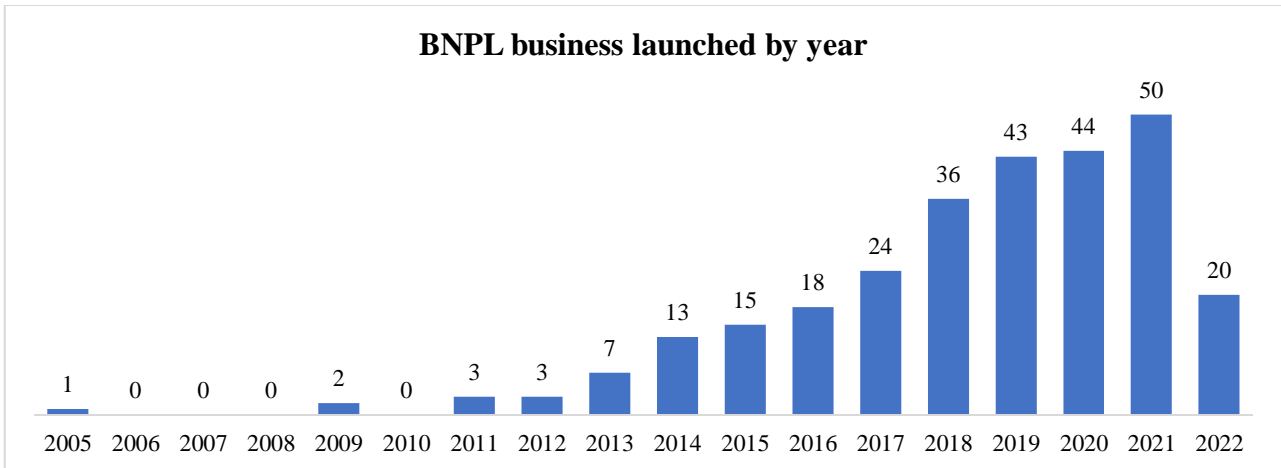


Figure 18 – Number of firms that launched their first BNPL product each year, from 2005 to half 2022. Basis of 279 companies for which is known when the first BNPL service is launched.

Most of the companies that offer BNPL have this service as their core business, in fact just over half of the companies, 152 out of a basis of 295, are BNPL FinTech. Among other companies, around 14% are FinTech, which offer BNPL among the various products in their portfolio. It is therefore possible to state that currently almost 2/3 of the BNPL market is made up of Financial Technology companies. The rest of the market is very fragmented made up of various types of companies, among which the Payment Gateway Providers (9%), Banks (6%), and Finance Companies (4%) stand out. Finally, Digital wallets, Marketplaces and Lending Platforms represent 9% of the market together.

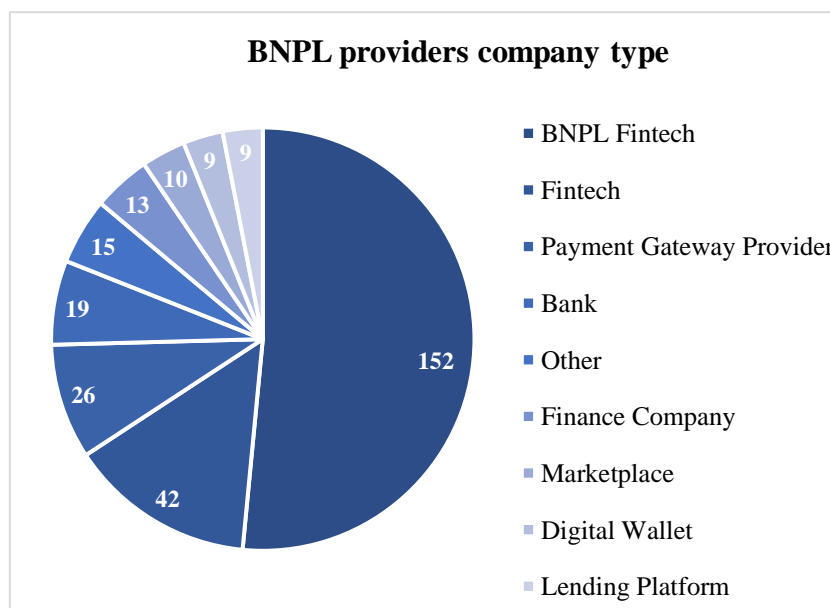


Figure 19 – The most common type of companies that offer BNPL services. Basis of 295 companies for which is known the company type.

It is interesting to note, however, that BNPL is gradually becoming a topic of interest also for companies from other industry, such as traditional credit industry, payment industry or retail industry. The graphs below show the types of companies that launched BNPL services during 2021 and 2022.

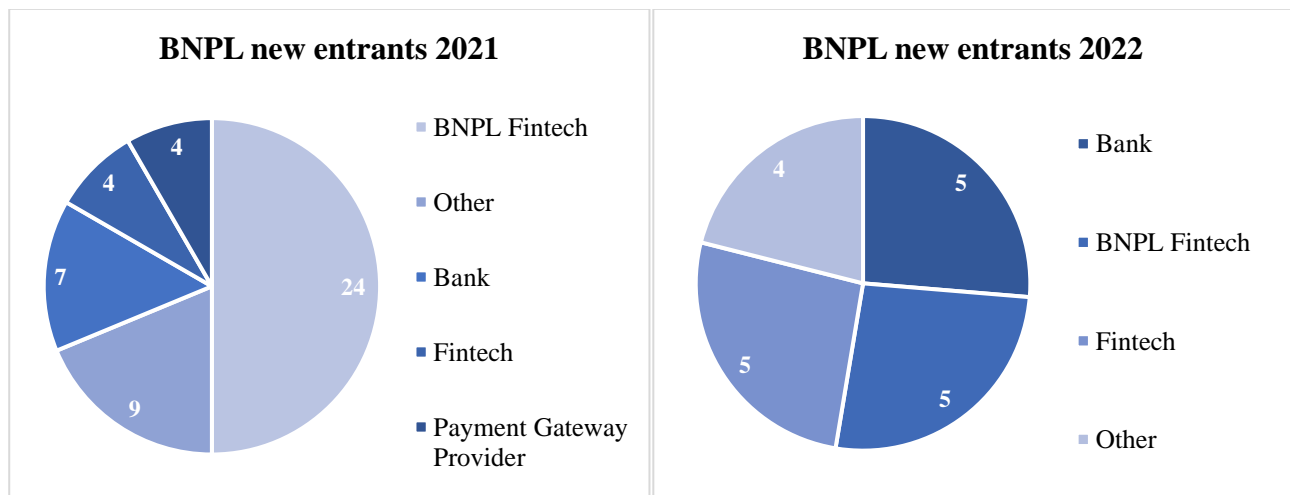


Figure 20 – The most common type of companies that launched their first BNPL service during 2021 (Sx) and first half of 2022 (Dx).
Basis of 48 companies in 2021, and 19 companies in 2022.

FinTech always remain at the helm of the market, representing more than half of the new entrants in the BNPL industry in the last two years. However, these data highlight a new trend, the entry of banks into the BNPL market. In fact, during 2021, banks represented 15% of new entrants on the BNPL industries, while this value increases to 26% in 2022.

The graph in the next page shows the volumes of new entrants in the BNPL market over the years, comparing four types of companies: BNPL FinTech, Banks, Credit card companies and Payment Gateway Providers. These data highlight how BNPL is gaining more and more attention and interest from established companies of neighbouring industries. Before 2019 the relationship between new entrants classified as BNPL FinTech and other types of new entrants was largely unbalanced towards the former, 99 pure players vs 12 players from other industries. This ratio, however, over the years has gradually become more balanced, in fact in 2021 the ratio between new-born pure players and new entrants that are not specialized in BNPL was 2 to 1. In the first half of 2022 there is even the same number of new entrants between banks and BNPL FinTech.

Finally, from the graph it is possible to see how companies focalized in the credit card business are still reluctant towards BNPL, in fact until now few players have taken into consideration the possibility of integrating this new type of credit in their offer.

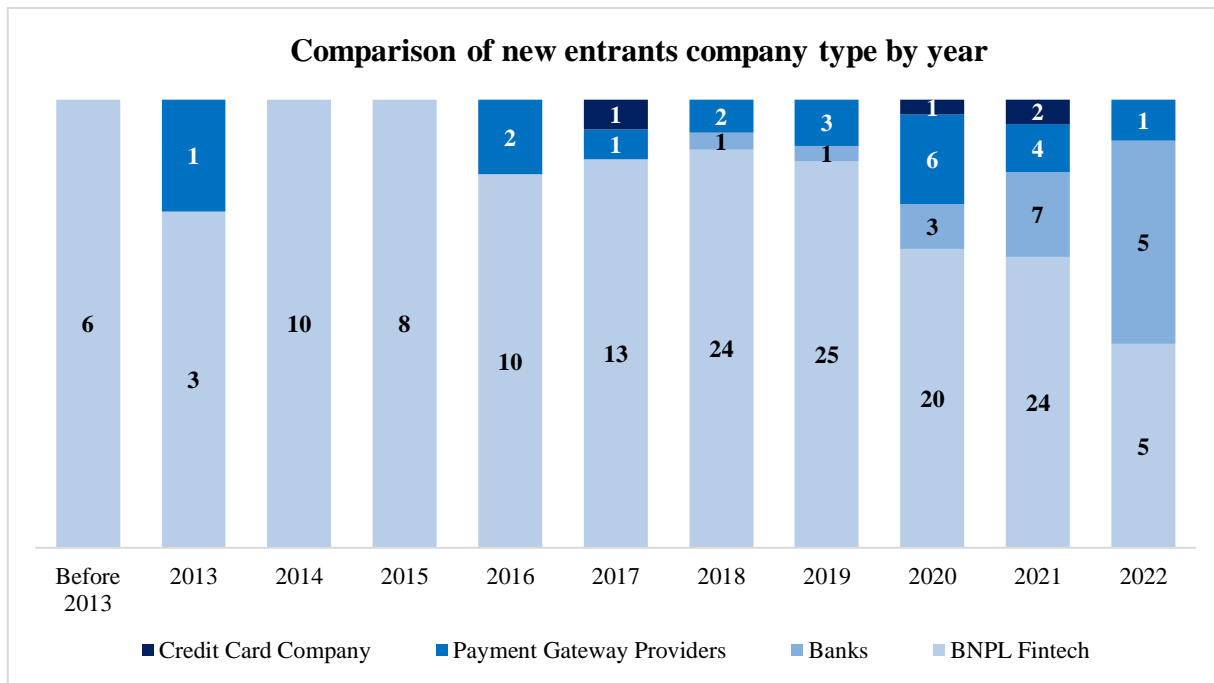


Figure 21 – Comparison of BNPL business launched by BNPL FinTech and other companies. Basis of 189 companies included in the following categories: Credit card company, Payment gateway provider, Bank and BNPL FinTech.

Another important characteristic of the BNPL market concerns the important presence of start-ups in the industry. In fact, on a basis of 294 companies offering BNPL services, it was found that 126 of them are start-ups. Most of these young organizations are FinTech start-ups, approximately 83%. Among them 87 are BNPL pure players, while 17 are FinTech not specialized in BNPL. This data shows how BNPL still has a young market, characterised by new companies and innovation.

3.1.1. Geographical diffusion

Presently BNPL is a payment method widespread in almost the whole world, however there are great differences between the various countries both in terms of use by customers and in terms of the services offered.

The following graph shows the number of companies offering BNPL solutions in different regions of the world. The darkest areas identify those countries that have a high number of BNPL providers, while the lighter areas identify those that have a low number of providers. Finally, the white areas represent those regions in which no BNPL offer was identified. From this analysis, all those companies that offer their services globally were excluded, i.e. 21 BNPL players.

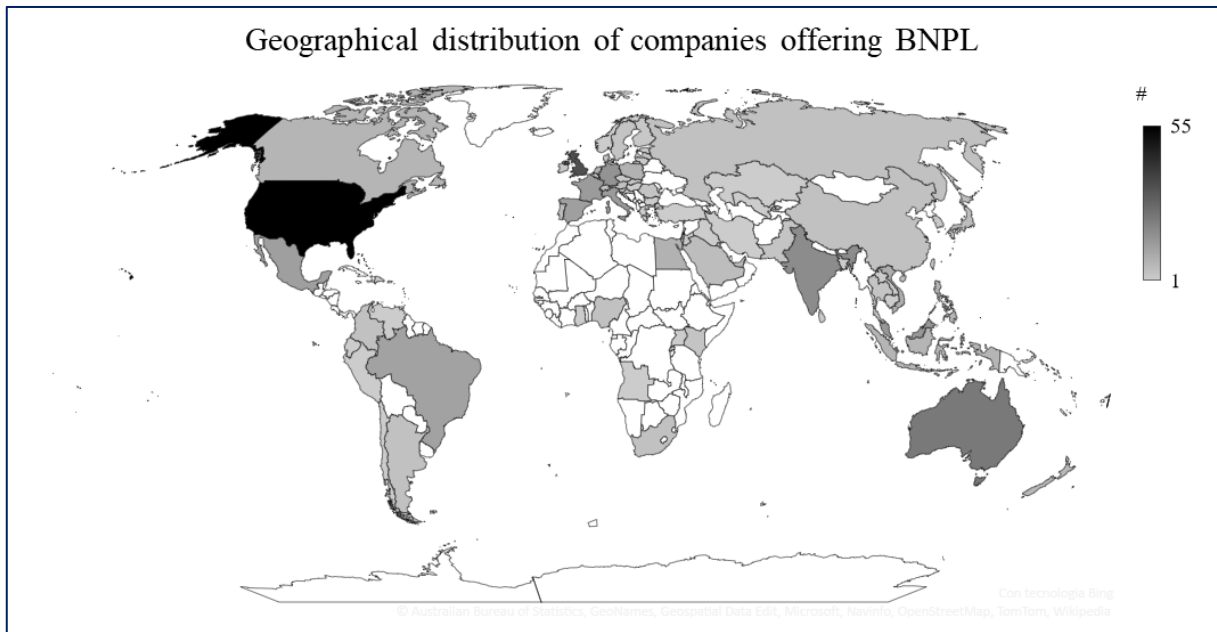


Figure 22 – Geographical distribution of BNPL providers. Graph obtained by a basis of 258 companies for which are known the areas of operations. The detail about companies present in the single countries are reported in the table below.

Country	# BNPL providers
Unites states, Europe	55
United Kingdom	34
Australia	23
India	18
Malaysia	15
Mexico	13
Brazil	12
Vietnam	9
Egypt, Singapore	8
Canada, Indonesia, Philippines	7
Hong Kong, New Zealand, United Arab Emirates	6
Japan, Saudi Arabia	5
Argentina, China, Colombia, Nigeria, Russia, South Africa	4
Kenya, Kuwait, Pakistan, Taiwan, Thailand	3
Bahrain, Jordan, South Korea	2
Angola, Bangladesh, Brunei, Cambodia, Chile, Dominican Republic, Ecuador, Ghana, Iran, Iraq, Israel, Kazakhstan, Laos, Lebanon, Peru, Rwanda, Turkey, Sri Lanka, Uganda, Uzbekistan, Venezuela	1

Table 6 - Census of BNPL providers for each country.

The absolute leaders of this ranking are Europe and the United States, both registering the presence of 55 different BNPL providers in their territory. These data confirm the importance of BNPL for European nations, not only from the point of view of penetration among customers, but also from the point of view of the breadth of the offer. Likewise, they show how the growth forecasts of the US market are attracting many companies, intent on gaining a slice of that market.

Another nation characterized by a width and variegated offer is the United Kingdom. Here, 34 different BNPL providers are identified, a very high market density in relation to the population. In fact, the density recorded in the UK is even greater than that of the US or Europe, recording the presence of a BNPL provider for every 2 million inhabitants. Proportion that rises to 6 and 8 million inhabitants respectively for the United States and the European Union.

As regards another of the leading BNPL markets, the Australian one, also in this case a mature market was identified, made up of 23 BNPL providers, one for every 900 thousand inhabitants, a density even greater than the British one.

Interesting situations are also reported for countries such as India, Malaysia, Mexico, and Brazil. Although these markets are still in the initial steps in terms of penetration among consumers, they still have a good offer made up of a number of BNPL providers that range from 12 to 18. All the remaining countries are characterized by less populated markets, made up of less than 10 companies. Among them, countries like Vietnam (9 BNPL providers), Egypt and Singapore (8 BNPL providers) stand out.

Finally, it is important to remark that the values presented in the graph and in the related table do not take into consideration the companies classified as "Global", and therefore it is possible to hypothesize that the number of BNPL providers in the various countries can be increased by adding up to 21 more providers (i.e. the number of BNPL companies that operate globally).

Europe has so far been considered as a unique market, but even within it, is possible to find different situations for the different countries that make up this area. The figure in the following page shows the geographical spread of BNPL players focusing on the European market. Even for this graph the darkest areas identify those countries that have a high number of BNPL providers, the lighter areas identify those countries that have a low number of providers, while the white areas represent those regions in which no BNPL offer was identified. BNPL global players were excluded from this graph too.

The nation with the highest number of players is Germany, with 16 different companies operating in its territory. Then it is possible to find a rather crowded market also in France, Italy – with 14 companies each – and Spain, which registers 13 BNPL providers. A good number of BNPL players are also present in Netherlands and Poland (8 companies), and in Belgium (6 companies). All the remaining countries have a market made up of a few companies, at most 5.

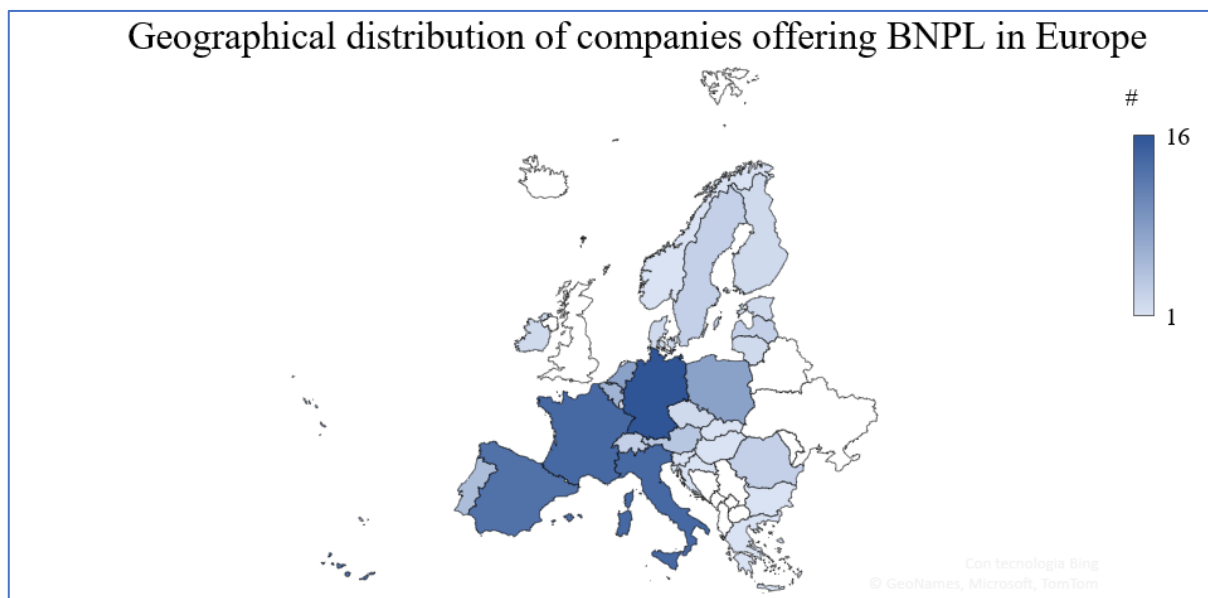


Figure 23 – Geographical distribution of BNPL providers in Europe. Graph obtained by a basis of 55 companies that operate in the European market, UK was excluded from this analysis.

The detail about companies present in the single countries are reported in the table below.

Country	# BNPL providers
Germany	16
France	14
Italy	14
Spain	13
Netherland	8
Poland	8
Belgium	6
Portugal	5
Austria	4
Latvia, Romania, Sweden, Switzerland	3
Czech Republic, Denmark, Estonia, Finland, Ireland, Lithuania	2
Bulgaria, Croatia, Greece, Hungary, Luxembourg, Norway, Slovakia, Slovenia	1

Table 7 - Census of BNPL providers for each European country

From this analysis it is possible to note that there is a large disparity between demand and variety of supply. In fact, excluding Germany and Netherlands, in most of the Nordic countries, although the penetration of this payment method is quite high, there are few companies that offer BNPL. However, this disparity can be explained by two reasons, one concerns the characteristics of the market itself, the other reason is linked to the method used during this analysis. The first reason is the presence of Klarna, in fact the BNPL giant thanks to its long presence on the market and its diffusion among customers, has built an important competitive advantage over time. This advantage can be seen as a barrier to the entry of new competitors in the market. New entrants would run into great difficulty in the attempt to establish themselves in a market currently dominated by larger and established

companies. The second reason is probably the most relevant and refers to the fact that companies that operate globally were excluded in the counting phase. Therefore, by integrating the 21 excluded companies, all the countries taken into consideration could have a market made up of at least twenty companies. It is interesting to note that potentially the market of Nordic countries such as Sweden or Norway is mainly made up of companies that operate globally. Confirming this, 5 of the 21 companies classified as "Global" are based in northern European countries. Therefore, although adding the companies that operate globally would have obtained a more precise estimate, it had been chosen not to do so mainly for two reasons, (i) it is possible that some companies that have been classified as global, or that declare themselves as such, do not operate in all the countries of the world, but only in a restricted number of countries spread over the various continents. So, since for most of these firms there was no certain information regarding the countries in which they actually operates, including them in the calculation would be a potential source of error. (ii) The proportions and differences between the various countries would remain unchanged as the same number of companies (21) would have to be added for all countries.

3.1.2. Temporal diffusion in different geographical areas

After having analysed the geographical spread of companies offering BNPL options, it is also interesting to consider the temporal dimension of this spread, in order to understand the evolution of the various markets over time and possible future developments. The chart in the next page identifies the number of new entrants in the BNPL market for the main geographical areas over three time horizons: before 2015, between 2015-2016, and between 2017-2018. These years represent three phases of the BNPL prior to its full-fledged explosion which occurred between 2019 and 2020.

- The birth: the first real BNPL services were born around 2005. Between 2005 and 2015, the penetration of BNPL among consumers was still very low, the industry was made up of a few companies and new entrants were scarce, there were only 20 companies that jumped into the market in almost 10 years.
- The early stages: between 2016 and 2017, the BNPL slowly began to spread and make itself known among consumers. During this period, new-born and established firms began to see the potential of this innovative payment method. 42 organizations launched a BNPL service.
- Pre-explosion phase: between 2017 and 2018 the BNPL had acquired a good penetration in several countries. The number of new entrants is growing slowly but continuously, 62 companies entered the BNPL market during these 2 years.

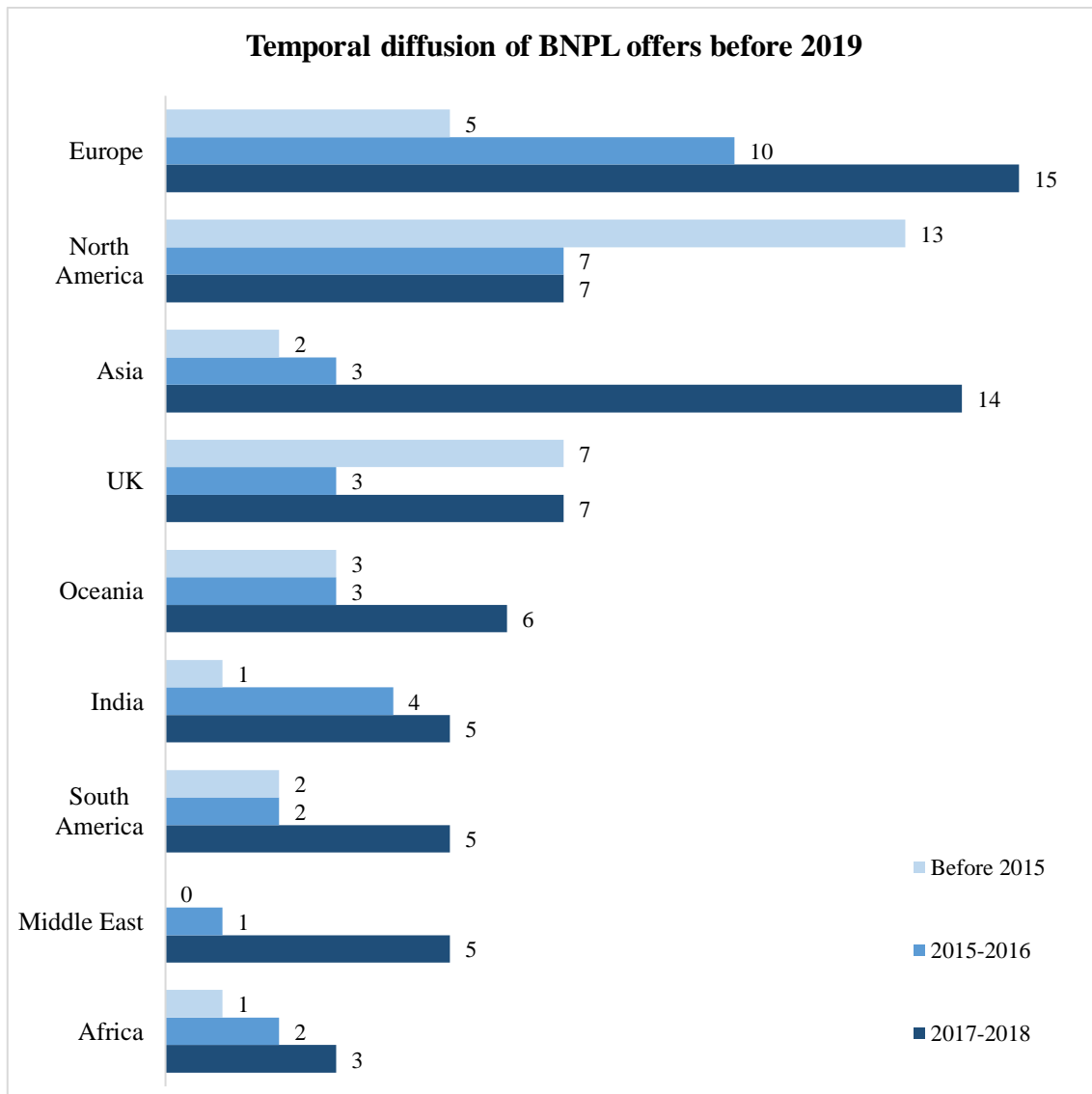


Figure 24 – New entrants on BNPL market before 2019 for different geographical areas.
 Note: 9 global companies were not included in the computations.

From this graph it is possible to identify four main conclusions: (i) the spread of BNPL companies in the North American and UK market started before 2015. In fact, these two areas recorded the highest number of new entrants in that period, 13 and 7 respectively. (ii) The greatest supply growth trends are recorded in Europe and Asia, between 2017 and 2018, 15 and 14 new entrants were counted on the respective BNPL market. (iii) Most of the companies that have launched BNPL services during these years have done so in Europe and North America. While the slowest geographical areas from the point of view of the diffusion of the BNPL offer are Africa, South America, and the Middle East. (iv) The number of new entrants to the BNPL market shows positive growth trends for all the geographical areas analysed, in the period from 2005 to 2019 excluded.

As described in chapter 2.1.5. of the literature, between 2019 and 2020 the BNPL registered its boom among consumers. This was also reflected in an important growth in the number of companies present

on the market. The following graph shows the number of new entrants in the BNPL market for the main geographical areas over the last four years. The data recorded in 2022 are still incomplete, therefore not useful for comparisons with other years. Despite this, they are reported for informational purposes.

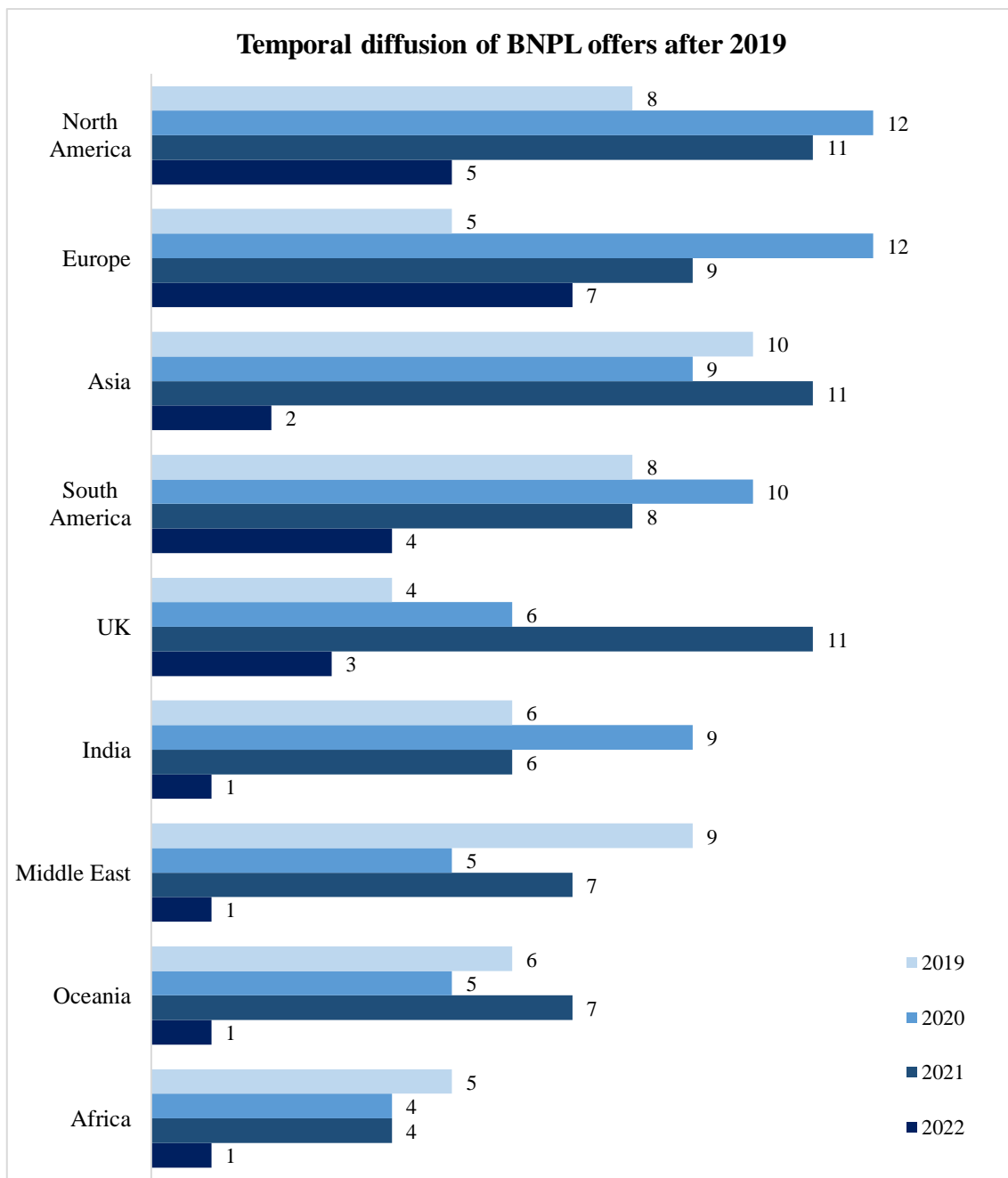


Figure 25 - New entrants on BNPL market after 2019 for different geographical areas.

Comparing this graph with the previous one, it is possible to notice a strong increase in companies offering BNPL recorded between 2019 and 2021. Specifically, in North America, within three years, the number of companies offering BNPL services more than doubled, passing from 27 to 58, and a further 5 companies entered the market during the first half of 2022. During this period the players

on the BNPL market have more than doubled also in Europe and the UK, +26 and +21 companies respectively. Impressive growth has also been noted in Asia, where it has gone from 19 to 49 companies operating in the BNPL industry (+258%), and in Oceania, that passed from 12 to 30 companies (+250%). Despite that, the highest growth rates were found in areas where the BNPL was less widespread. In South America the market had nearly quadrupled its players (from 9 to 35), the BNPL companies in India grew by 350%, in the Middle East by 450% and finally in Africa they more than tripled.

All these data confirm the strong growth trend of BNPL not only from the point of view of demand, but also from the offer. In fact, as highlighted in the previous chapter, in addition to new start-ups, many established companies have decided to launch themselves into this business.

The graphs just analysed (Figure 24 and Figure 25) were calculated with slightly different methods. In fact, companies operating globally have not been included in the first, while they have been included in the second graph. As a result, 9 companies among those that launched their first BNPL service before 2019 were excluded from the calculation. This choice was made for two reasons: (i) it is rare that a company provide a global BNPL offering right from the start, while it is more plausible that it starts out focusing on a single area and then expands its offer in other countries. Therefore, including global companies in the calculation of the first graph would certainly have created errors and overestimations. (ii) In the second graph, companies classified as "Global" have been included because a shorter and more recent time horizon has been considered. In fact, in this case, potential temporal errors were considered irrelevant for the analyses, as classifying a BNPL company in the African market in 2021 or classifying it in 2020 was not considered a relevant error. In this case, moreover, the fact that a global offer may not include some countries was not considered relevant, since the object of the analysis is not individual countries but larger geographical areas. Therefore, it is more unlikely that a BNPL company that operates at a global level excludes entire geographic areas from its offer, versus the more likely exclusion of a single country.

3.1.3. Payment methods

This paragraph will focus on an analysis of the main characteristics of the processes and mechanisms adopted by the BNPL companies included in the census. The first variable analysed is the "Payment Method", i.e. the method by which customers can activate the BNPL offer.

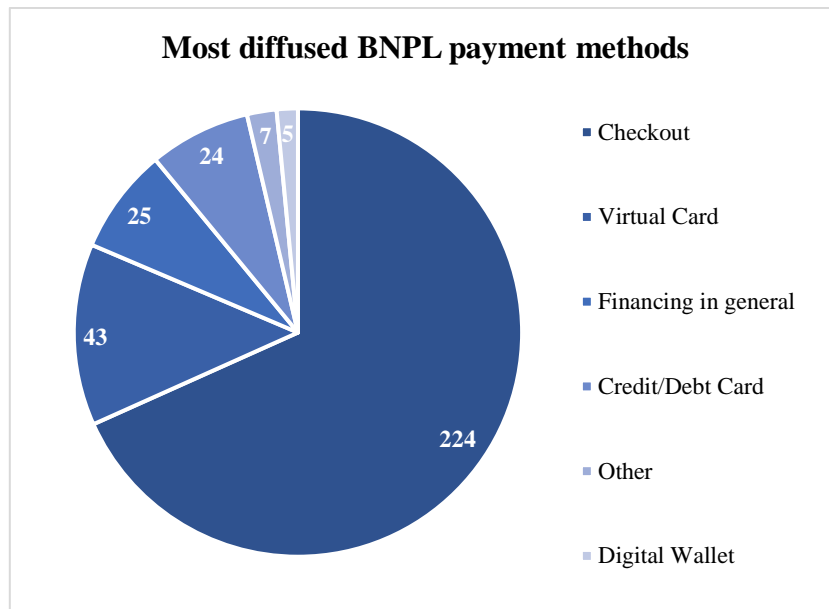


Figure 26 – Most diffused payment mechanism offered by the BNPL companies. Basis of 274 companies for which is/are known the payment methods.

By far the most popular method is the integration of the BNPL option at the checkout, 224 out of 274 companies (about 82%) use this method. This is the most distinctive and traditional way of offering BNPL, all other methods are generally offered as an alternative option. The checkout reported in the graph groups all the main payment methods derived from "Checkout", they include: "Checkout", "Marketplace Checkout", and "Invoice Checkout".

Another method that is quite diffused is the Virtual card. Many BNPL providers introduced this mechanism in order to make it possible for customers to activate their BNPL services at any retailer, even if they are not affiliated. Presently, about 15% of companies in the sample have introduced a virtual card.

Among the other listed methods, those used with considerable frequency are the financing and the inclusion of the BNPL option in credit or debit cards. They are used respectively by 25 and 24 companies (11% of the sample analysed). The financing reported in the graph groups all the main payment methods derived from "Financing", they include: "Financing", "Bill Financing", and "Invoice Financing".

Although the integration at checkout is the most widespread method, it is possible to hypothesize that the diffusion of BNPL solutions activated via credit/debit card may increase in the future. In fact, activation by card - whether credit, debit or virtual - is used by 62% of the banks, making it the most common method among financial institutions. So as more and more banks are expected to start offering BNPL solutions in the future, payment by card is expected to gain further importance.

The payment method of a BNPL service also defines the possible places of use. In fact, an option integrated into the checkout will only be usable with partner merchants, while an integration of the BNPL into a virtual card or credit card could potentially work in all physical and online stores that accept payment by card. So, the analysis on this field conducted among a sample of 289 BNPL companies, highlight the following results:

- The BNPL companies that offer their credits to make purchase only from partner merchant are 225 (78%).
- 34 BNPL companies (12%) offer their customers the possibility to apply the BNPL service for almost all of their purchases, without requiring a partnership with the merchants.
- Finally, it was found that 30 companies (10%) have a hybrid model, offering BNPL services both among partner merchant and non-affiliated ones. A well-known example is Klarna, it offers both BNPL at checkout at partner retailers, and virtual cards that allow its cardholders to defer payment of any purchase made using the underlined card.

These data show that currently, the vast majority of BNPL's businesses are based on partner merchants (88% including hybrid models), while are also beginning to spread options that allow customers to make purchases even from non-affiliated merchants (22 % including hybrid models).

It is important to conclude that a service classified as "All merchants" is rather unlikely to charge merchant fees. For this reason, most BNPL pure players, for whom taxes levied on retailers are the main source of income, typically work with partner merchants. In fact, 141 out of a base of 150 BNPL FinTech were found to offer services only through partner merchants or eventually have hybrid methods. The businesses that do not work with partner merchants are instead characteristic mainly of banks or credit card companies, which exploit the BNPL to incentivize and attract more customers to use their payment cards.

3.1.4. Category of products financed

Another important field of analysis concerns the products and services that can be purchased with BNPL payments. From the analyses conducted on the companies listed in the census, it emerged that the majority – i.e. 257 over a basis of 292 (88%) – are not specialized in one or limited industries. They therefore offer customers the opportunity to use their BNPL options to purchase products and services of almost all categories. On the other hand, companies focused on a limited number of industries are around 12% (35 out of 292), very few compared to the "Generalist" ones. The following graph shows which are the most common industries of focus for the BNPL firms.

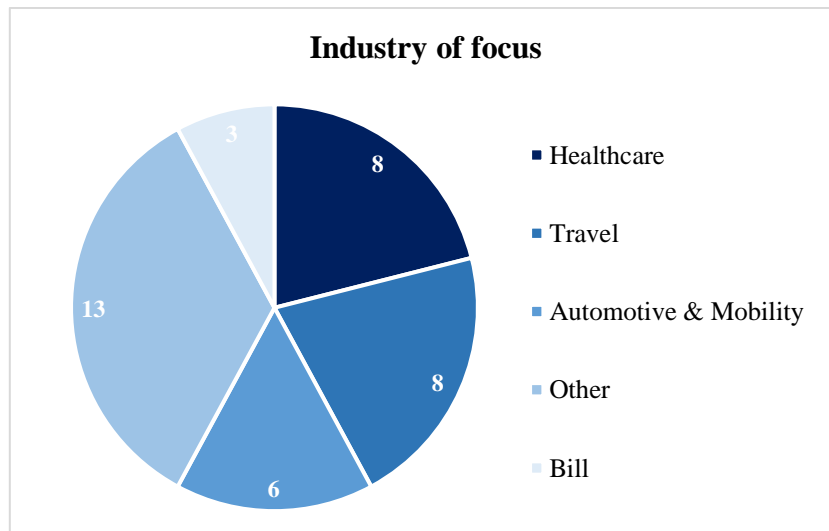


Figure 27 – Most common industries of specialization of BNPL providers. Basis of 35 companies that offer BNPL services focalized in one or few industries. Note: a company can be specialized in more industries.

The most common industries of specialization are Healthcare and Travel industries, 45% of the “focalized” BNPL companies are specialized in these industries. While good diffusion is also reported for the automotive and mobility sectors, 17% of BNPL “focalized” companies. Among the categories of products classified as "Other" there is a very fragmented situation, it is composed by:

- Insurance, 1 company.
- Household goods & Energy-efficient and home improvements, 2 companies.
- Construction materials, 2 companies.
- NFT, 1 company.
- Smartphone & Other devices, 2 companies.
- Tattoo, 1 company.
- Hospitality, 1 company.
- Criminal justice expenses, 1 company.
- Legal expenses, 1 company.
- Cannabis, 1 company.

3.1.5. BNPL channels: Online versus Offline

Since its inception the BNPL has been a payment method used mainly for online purchases, the penetration on ecommerce sales is in fact much greater compared to that on POS sales. In recent times, however, more and more BNPL providers are expanding their offer to also include physical sales channels, with the objective to provide a full omnichannel offer. The following graph summarizes the present situation.

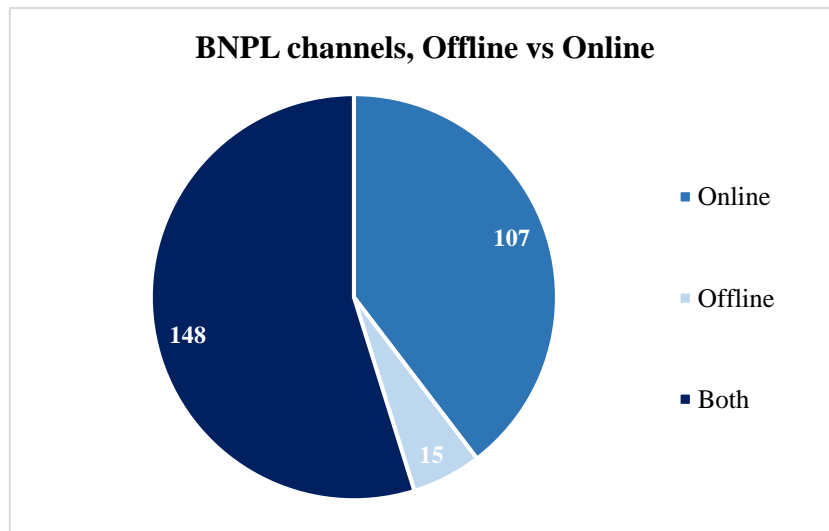


Figure 28 – Comparison between the BNPL companies' usage of online and offline channels. Basis of 270 companies for which is known the type of channel used.

To date, more than half of BNPL companies have a multichannel or omnichannel approach, offering their services both in online stores and physical shops. Players focused instead on an entirely online offer are still a good slice of the market, in fact they represent almost 40% of the sample analysed. On the other hand, companies that offer their BNPL services only to POS are very rare, they are 15 over a total of 270 companies analysed (less than 6%). It is interesting to note how 80% of these uniquely "offline" companies are focused on specific of services that are generally not purchased online, among them it is possible to find companies focused on the healthcare, automotive or tattoo industry.

Finally, a particular case relating to the channels used has been identified, the "Private" BNPL companies. A BNPL company is classified as "Private" if it offers BNPL services solely for its own sales channels. Two famous examples are Amazon Pay Later, a BNPL service offered only in the Amazon marketplace, and Google Store Finance, a BNPL service that allows customers to purchase products from the Google Store by paying them in instalments. In total 12 "private" companies have been identified, of which more than half are marketplace or retailers. This data indicates that some vendors have decided to cut costs charged by BNPL providers by developing and offering proprietary BNPL solutions.

3.1.6. White label BNPL

The BNPL offers, especially in the ecommerce checkout, are generally provided with the BNPL providers' brand highlighted near its related payment options. This generates benefits for both vendors and providers as the former will enjoy greater trustworthiness in the eyes of consumers, while

the latter will have the opportunity to expose their brand, thus increasing its awareness among consumers. On the other hand, some merchants prefer to keep their e-shops entirely branded by the retailer's brand, and it is for this reason that BNPL white label services were born. A white-label service allows partner merchants to offer BNPL payment in a personalized way, i.e. by providing the BNPL option under the merchant's brand, in order to create a full-branded customer experience. White label solutions include also the co-branded options, i.e. BNPL options provided under both the brand of the retailer and the brand of the provider. The following chart shows what are the most common types of companies that offer white label solutions.

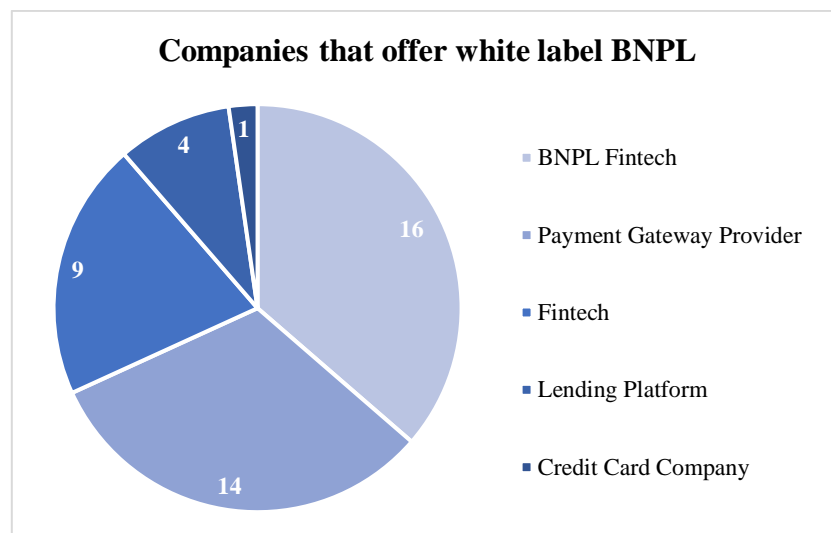


Figure 29 – Most common types of companies that offer white label BNPL solutions. Basis of 290 companies for which is known if they offer white label solutions.

Among 290 BNPL companies analysed in this aspect, 44 of them offer white label solutions, about 15% of the entire sample. White label BNPL is diffused especially among payment gateway providers and lending platforms, respectively 56% and 44% of these companies offer white label options. This offer is also provided by 22,5% of FinTech, while this percentage drops to 11% among BNPL pure players.

3.1.7. BNPL customers: B2C versus B2B

BNPL customers can be divided into two principal groups, B2C customers and B2B ones. This division is important in order to better outline the different offers of BNPL companies. In fact, the services offered to business customers differ in various aspects, compared to those offered to private customers. The graph in the following page shows the customers in which are focalized the BNPL companies analysed.

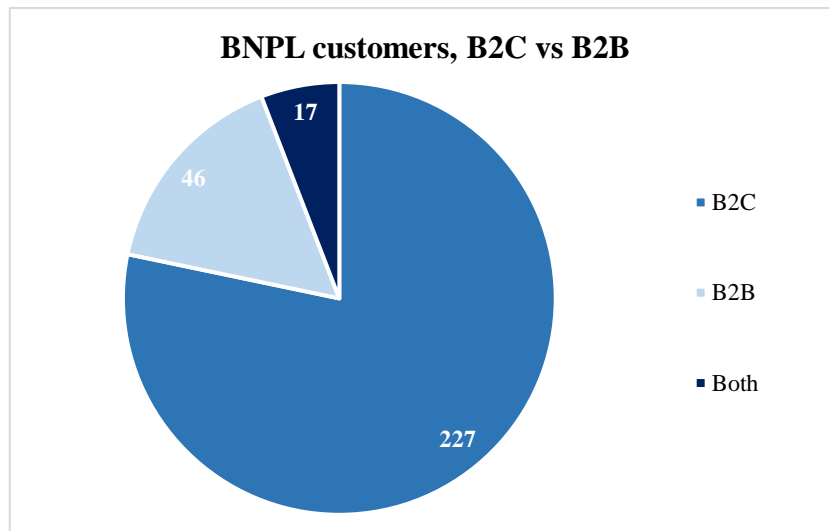


Figure 30 – Comparison between companies focused on B2C market and companies focused on B2B market. Basis of 290 companies for which is known the type of customers.

The vast majority of the providers focus on the B2C market, around 78% of BNPL companies offer their products to private customers only. While approximately 16% of BNPL companies offer their products only to other businesses. Finally, there are only 17 companies operating in both the B2C and B2B markets. This result is mainly due to the characteristics of the BNPL, i.e. a credit used to make medium-low value purchases by dividing the payment over time. These characteristics make BNPL much closer to private clients. In fact, business customers make more frequent purchases that generally have a medium-high value. Therefore, as will be explained in the following chapters, the BNPL services offered to the B2B market has characteristics different from the traditional BNPL mechanism.

3.1.8. BNPL services: Pay Later versus Instalment

The BNPL services analysed can be grouped into two main categories, services with instalment payments and services with deferred payments, made in a single solution. The chart in the following page shows the diffusion of these two models in a sample of 244 BNPL companies obtained from the census.

Almost 3 out of 4 firms offer only BNPL services classified as "Instalment", i.e. services that allow customers to make purchases by dividing the payment into two or more instalments. However, it is rarer to find companies that only offer services classified as "Pay Later", i.e. options that allow customers to postpone the payment of their purchases for a predefined number of days. In fact, only 11% of the BNPL companies focus their offer only this type of service. Finally, it is interesting to note that around 15% of companies offer both Instalment and Pay Later options.

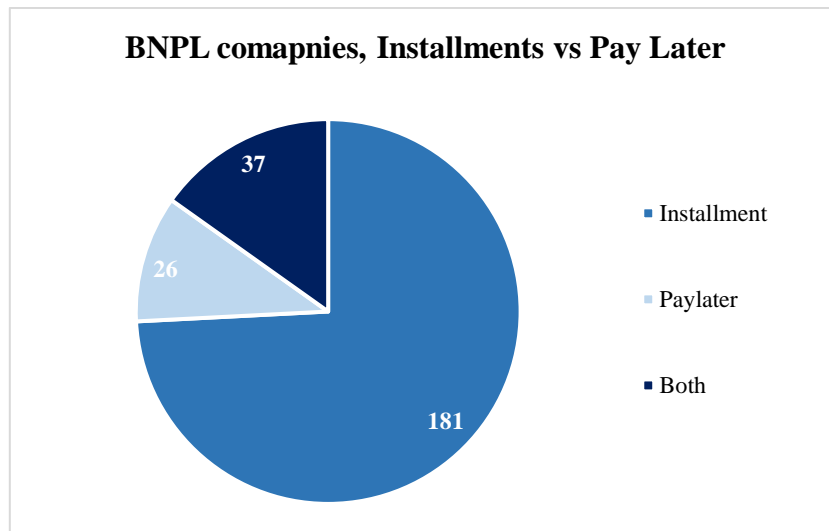


Figure 31 – BNPL companies division based on the type of services offered. Basis of 244 companies for which is known the type of BNPL services offered.

To find out which are the factors influencing these data, two further analyses were conducted. The results are summarized in the two following charts which represent the type of BNPL service offered (Instalment or Pay Later) by two type of providers, providers that are focalized only on B2C customers and providers focalized only on B2B customers.

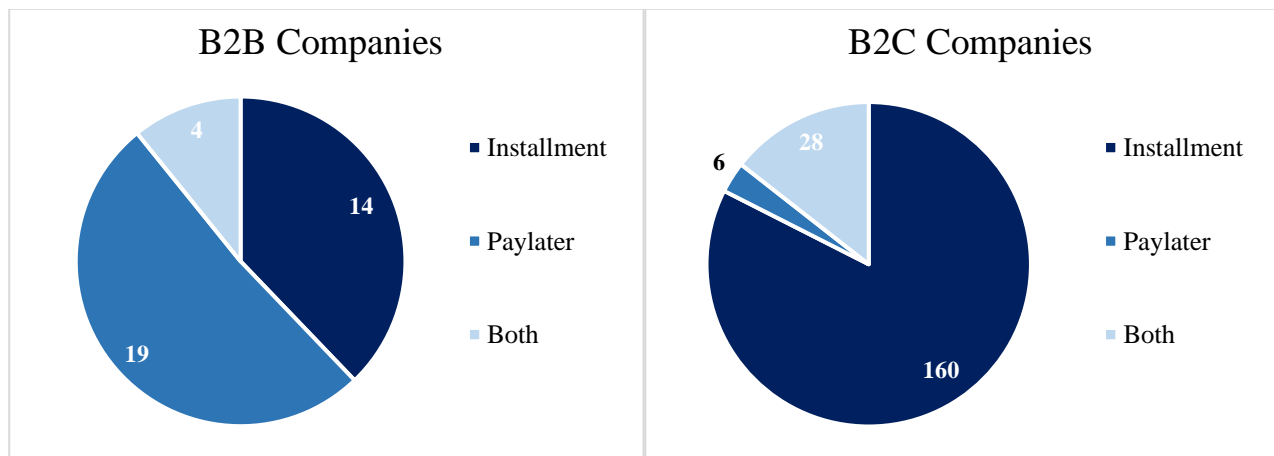


Figure 32 – B2B BNPL companies division based on the type of services offered (Sx) and B2C BNPL companies division based on the type of services offered (Dx). Basis of 37 BNPL companies focused on B2B customers only (Sx) and basis of 194 BNPL companies focused on B2C customers only (Dx).

It is immediately notable that BNPL services offered in the B2B market are mainly Pay Later services. In fact, about half of the companies specializing in the B2B market offer only Pay Later services, while the remaining offer Instalment only, in 38% of cases, or both services, in 11% of cases.

Concerning the B2C market, almost all of the BNPL companies offer Instalment services, specifically 188 out of 194. Of these 188 companies, 160 (i.e. 82% of the sample) offer exclusively Instalment services, while the remaining 28 accompany it with the Pay Later alternative. Are only 6 the companies in the B2C market specialized in Pay Later services, just 3% of the sample analysed.

Two conclusions can be drawn from this analysis:

- BNPL B2C market is mainly composed of instalment payment deferral services.
- In BNPL B2B market the payment postponement services predominate.

It is therefore possible to see how the BNPL has adapted to the needs of B2B customers becoming a method to finance the businesses' operational activities. In fact deferring payments to suppliers has a positive effect on the cash-to-cash cycle – i.e. the days between the purchase of materials/inventory from a supplier and payment collection for the sale of the resulting products – allowing business customers to improve their liquidity.

3.1.9. Other variables analysed

This chapter is focused on the analysis of all the remaining variables of the first part of the database. This analysis includes:

- The means of payment accepted by the BNPL providers for the repayment of instalments.
- The variables analysed during the customer credit assessment phase.
- The consequences for customers in the event of default.

For all these variables, problems were recorded during the collection of information, mainly because many BNPL providers do not report these data to the public in a clear and complete manner. The results obtained and the related considerations are reported below.

As regards the methods accepted for credit payment, various missing data have been found, in fact, many companies do not specify in advance which payment methods are accepted for the repayment of the credit obtained. The result is that for only 186 companies out of 300 it was possible to identify the repayment methods. The following graph shows the result of this analysis.

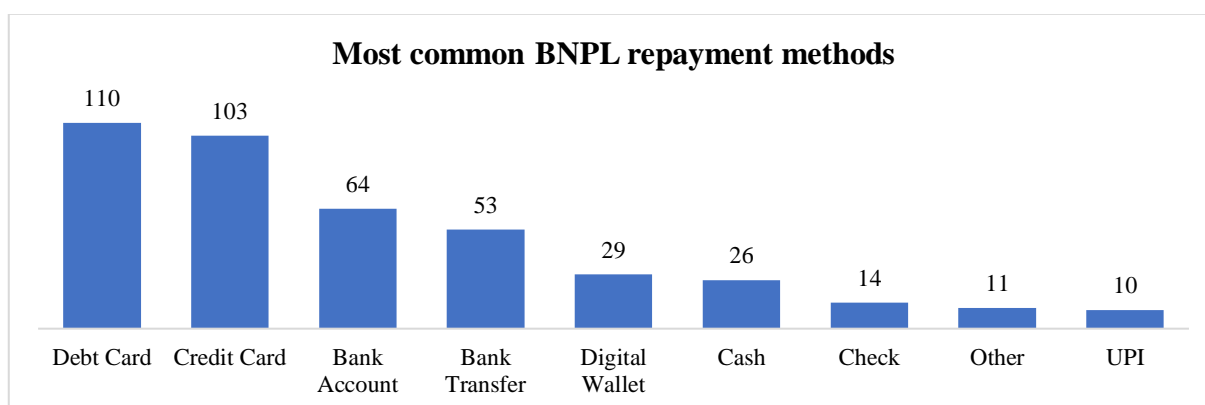


Figure 33 – Most common payment method accepted by BNPL providers for the repayment of the credit. Basis of 186 companies for which are known the available repayment methods.

The primary payment methods are debit cards and credit cards, accepted respectively by 59% and 55% of companies. This data demonstrates that although BNPL can sometimes be a substitute for credit cards, this is not always the case as the credit card is one of the main means of repaying purchases made through BNPL. The coexistence between BNPL and credit cards is therefore possible. Among the other most widespread methods, direct payment via bank account and bank transfers also stands out, accepted respectively by 34% and 28% of the companies analysed. Finally, a fair diffusion is also found between payments made via digital wallet, 16% of companies accept this payment method, and cash payments, accepted by 14% of companies. This last means of payment is particularly interesting as it allows customers who do not have credit cards or bank accounts to make online purchases by paying in cash at special centres, usually over-the-counter markets or small supermarkets. Finally, it is also interesting to note the influence of Indian BNPL players expressed through the presence of payment via UPI, an Indian real time payment system, used by 5% of the companies analysed.

The second field analysed in this chapter concerns the variables analysed by BNPL providers during the customer credit assessment phase. Even this analysis was affected by various problems. The main ones were: (i) a lack of information, only 185 out of 300 companies report at least one of the variables taken into consideration during the customer credit assessment process; (ii) the presence of incomplete information, in fact many companies want to keep secret their algorithms of creditworthiness evaluation, so they only partially report the variables taken into consideration during this process. Among the variables analysed by the BNPL providers, the most important is certainly the type of credit checks implemented, since it is the only variable that can have an impact on customers that goes beyond the single credit extension decision. In fact, carrying out hard credit checks can have an impact on the credit profile of customers by deteriorating their credit score. For this reason, it is important for customers to know in advance what type of credit check is carried out by the BNPL provider, to make a more informed decision. The chart in the following page shows the main types of credit checks that the BNPL firms analysed claim to apply.

As can be seen from the graph, only 168 companies, over the 300 analysed, declare that they carry out credit checks. Furthermore, are 98 the firms that claim to carry out credit checks without however specifying whether they are hard checks or soft checks, while are only 70 the companies that report the type of credit checks carried out. In conclusion, the overall number of companies that do not report what type of credit checks are carried out (or even if they carry out credit check) is 230, out of 300 companies analysed. This lack of information sharing poses a great risk to customers who decide to

apply for credit through BNPL, without however knowing what the consequences of this request could be on their credit score.

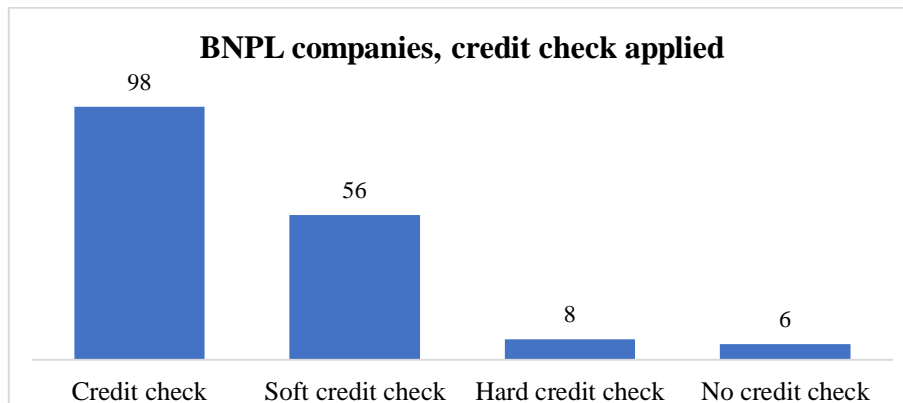


Figure 34 – Type of credit check applied by BNPL companies. Basis of 168 companies which apply credit check on customers.

As regards instead the 70 companies that declare what type of credit checks they carry out, the vast majority carry out soft checks, which have no impact on the customer credit profile. These companies represent the 80% of this smaller sample. While only 8 companies out of 70 (11%) declare that they carry out hard checks. Finally, it is interesting to note that 6 companies instead declare that they do not carry out any type of credit check.

The last variable analysed in this paragraph concerns the possible consequences in the event of customer default, i.e. what happens if customers do not repay their debt to BNPL providers. Three main consequences are reported: suspension of the customer account, employment of debt collection agencies, and sharing data with credit bureaus. The latter was found to be the most widespread consequence, with 114 out of 300 companies declaring that they share information regarding missed payments or customers' default with credit agencies or financial authorities. On the other hand, 29% of the companies analysed state that they block customers' accounts in the event of default, while 25% declare that they employ a debt collection agency for debt recovery.

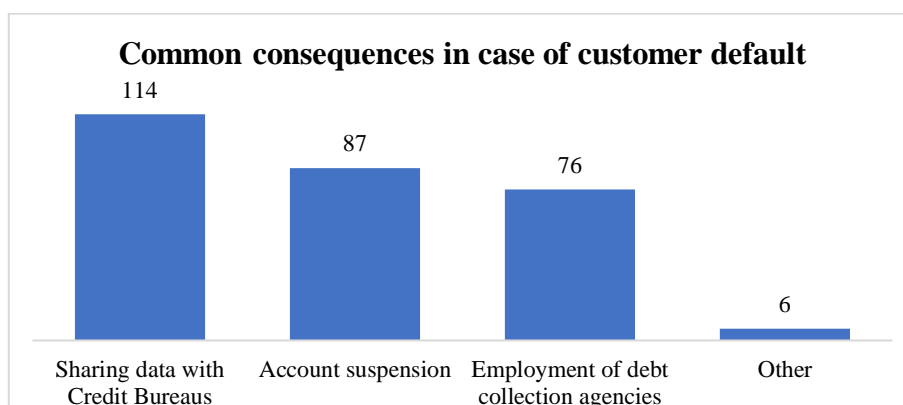


Figure 35 – Most common consequences reported by BNPL providers in case a customer does not repay its BNPL debt. Basis of 123 companies which reported at least a consequence in case of customers' default.

Even this analysis, like the previous one, was largely influenced by missing data and incomplete information. The result is that only 123 out of 300 companies report at least one of the possible consequences applied in the event of customer default. Moreover, even among these few companies there is the risk that the information reported is only partial, i.e. that not all the possible consequences in the event of default are reported. So, as before, the lack of precise and complete information creates a potential risk for customers who approach the BNPL. In fact, due to this issue, many customers are not able to evaluate the possible negative consequences that a careless use of BNPL could have.

3.2. BNPL services general features

From the census emerged that the 300 companies listed totalised an offer of 402 BNPL services. This number could be even higher considering that it was not possible to identify the characteristics and the number of services offered for all companies. Therefore, only one service was assigned to all the firms which lack of this information, under the assumption that each company included in the census has at least one active BNPL service.

3.2.1. Revenue model

The results of the analysis of the revenue model of the BNPL companies, summarized in the “Subsidy Side” column, showed that on a basis of 246 companies:

- 152 had at least one service that apply fees or interests to consumers (62% of the sample).
- 166 had at least one service that apply fees to merchants (67% of the sample).
- 71 had at least one service that apply fees or interests to consumers, and at least one that apply fee to merchants (29% of the sample).

It is important to point out that the late fees were not used for the definition of the revenue model, i.e. they were not considered to evaluate the subsidy side, as they do not represent a certain and constant revenue stream over time.

The data reported above show how the fees applied to merchants are the main source of income for BNPL companies, in fact are more than 96% the companies that charge partner merchants. For what concerns customers, unlike the common perception which sees the BNPL mainly as a free service, 91% of the BNPL companies analysed apply fees or interests to their customers. This data will be further analysed in the following paragraphs, in order to understand the reasons why the common thought sees the BNPL mainly as a free service for consumers, and if it really is.

The first reason can be easily identified by carrying out a detailed analysis of the services offered by each company. The chart in the following page reports the application of two main types of fees, those imposed on merchants and those imposed on consumers. As can be seen from the graph, also in this case, most of the BNPL services apply fees to merchants (about 85% of the sample analysed). While the situation is different for what concerns the consumers, in fact for them the ratio between services that apply costs and free services is almost 1 to 1 (175 versus 156). The percentage previously obtained by analysing the number of companies that charge their customers, can therefore be explained by the fact that most of the companies that offer two or more different BNPL services

include both free and paid services in their offer. Therefore, the previously obtained classifications are influenced by these multiple offers provided.

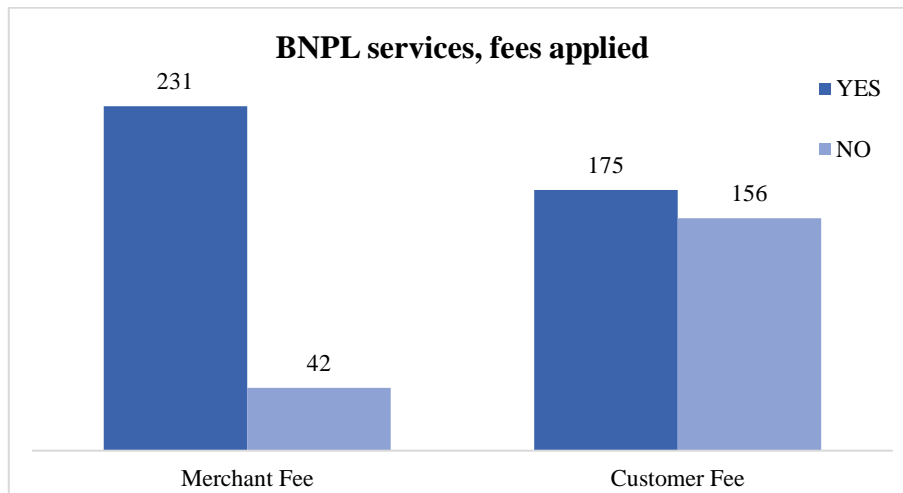


Figure 36 – Comparison of BNPL services fee application for customers and merchants. Basis of 273 BNPL services for which is known if they apply fee to merchants (Sx) and basis of 331 BNPL services for which is known if they apply fee to customers (Dx).

Passing instead to a more detailed analysis of the fees applied, it was recorded that:

- The fees applied to merchants are typically a percentage commission on the total purchase amount, they range from 1.5% to 7.4%.
- The fees applied to consumers are generally in the form of interest on instalments or monthly fees, generally the APR of the paid services analysed ranges from 0% to 36%.

Rarely a BNPL service reports a fixed APR for all customers and for all types of purchases, in fact this value is generally variable and is calculated on the basis of three factors: the amount of credit requested, the credit score of the consumer making the purchase, and the repayment term selected. It is therefore possible that a service classified as paid, under particular conditions, may become free (0% APR). Therefore, it must be taken into consideration that of the 175 services classified as paid services for consumers, 18 can potentially be free for some customers.

From this analysis of the fee structures applied by the BNPL services, a particular case worthy of attention finally emerged, the services that do not derive direct income from the BNPL. There are 7 BNPL services that do not charge fees to customers or merchants. The companies that offer these services are:

- Retailers and Marketplaces, i.e. Ikea and Flipkart.
- Banks.
- Credit card companies.
- Super-app.

To understand the reasons for this apparently unprofitable choice, it is therefore necessary to look at the way in which these companies offer these BNPL services and why they offer them. As concerns Ikea and Flipkart, it is possible to note that both are classified as "Private", i.e. their BNPL offer can only be used in their own ecommerce. For this reason, the application of fees to merchants is impossible, as they are themselves the merchants. Regarding the customers fee, it can be hypothesized that in these cases the BNPL option is offered as a free service to entice customers to make more purchases or more expensive purchases in the provider e-shops.

As regards the remaining companies, however, it is possible to note that the BNPL option is provided in all cases through a card (debit, credit or virtual card) which allows consumers to purchase from any merchant. Therefore, it is possible to hypothesize that in this case the service is offered free of charge in order to increase the use of the underlined payment card and the related earnings on commissions. In fact, for each payment made by card, the merchants must pay a small commission to the card provider. This commission in the cases analysed does not vary depending on whether the payment is made through BNPL options or not, since the merchants have not signed agreements with BNPL providers, therefore it is not directly attributable to the BNPL service's revenue model. In conclusion, these particular examples demonstrate how the BNPL can be exploited by companies in different industries as a "free" additional service, in order to increase the demand for their main products or services.

Late fees

A variable not taken into consideration during the analysis of the revenue model, but still worthy of being analysed, are the late fees applied to consumers in case of missed payments.

A significant lack of information was found for this variable, in fact only for 252 BNPL services out of 402, the BNPL provider specified whether there are late fees applied in the event of late or missed payment of an instalment. Moreover, just over half of them report the amount of the late fees imposed.

The data collected showed that the vast majority – 83% of a sample of 252 services – of BNPL services apply late fees to their customers. So, BNPL is not free from additional costs applied in the event of bad customer behaviour regarding the repayment of the debt.

From the analysis of this variable, it is finally possible to conclude that the presence of late fees can represent a risk for customers, especially if these are not quantified or even not even declared, except in contracts made up of long terms and conditions that rarely highlight this information which is

therefore skipped by many consumers. As a result, customers will not be able to make conscious and weighted choices, considering all the possible consequences regarding the activation of BNPL credit agreements, often considered more superficially as simple payment methods.

3.2.3. Repayment schedule

In the analysis of the repayment schedules offered by the BNPL services listed in the census, there are two main variables that must be taken into consideration, the duration of the "loan", and the frequency of payment. In both analyses, a distinction was made between Instalment services and Pay Later services.

Instalment services

The services analysed have typically more than one payment term, in fact usually more options are provided to customers, giving them the possibility to select the repayment term according to their preferences. The only exceptions are made up of the services known as "Pay in 4" and "Pay in 3" which have a fixed number of instalments. The following graph shows the maximum payment terms offered by the various BNPL services, specifying for each payment term how many services are offered.

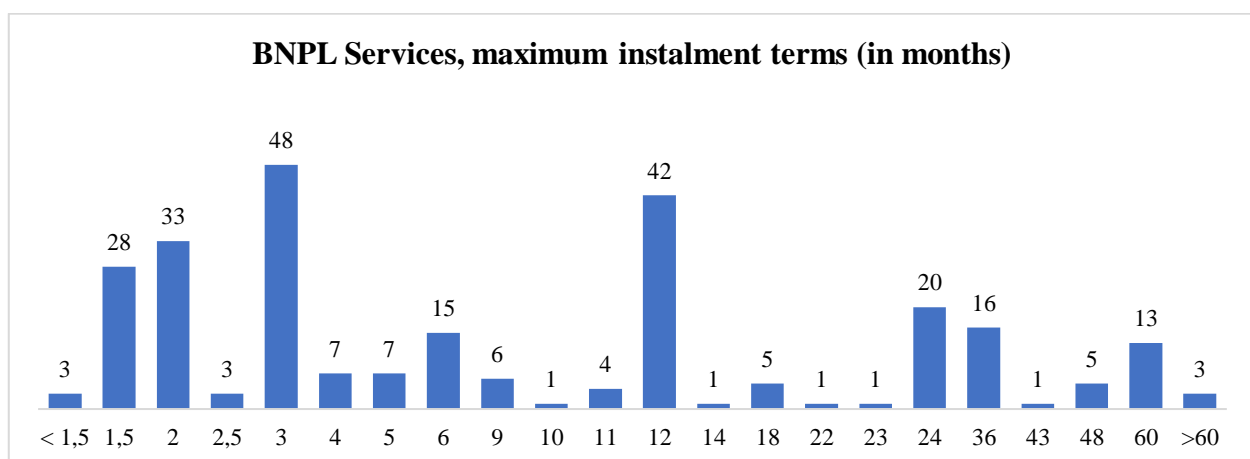


Figure 37 – BNPL services divided by the maximum instalment terms offered. Basis of 263 BNPL services classified as “Instalment”.

From these data three main types of BNPL services, classified on their duration, can be identified.

- Short-term services: maximum repayment terms between 0 and 4 months.
- Mid-term services: maximum repayment terms between 5 and 12 months.
- Long-term services: maximum repayment terms over 12 months.

Short-term services are certainly the most widespread, in fact they represent 46% of the services analysed. The most common have a duration of 3 months and include two main offers: 4 monthly instalments with the first payment due in the moment of the purchase, or 3 monthly instalments with the first payment due after one month. Services with repayment terms of six weeks and two months are also very popular. They include four main offers:

- 3 monthly instalments with the first payment due in the moment of the purchase (repayment terms of 2 months).
- 4 fortnightly instalments with the first payment due after two weeks (repayment terms of 2 months).
- 4 fortnightly instalments with the first payment due in the moment of the purchase (repayment terms of six weeks).
- 3 fortnightly instalments with the first payment due after two weeks (repayment terms of six weeks).

It is therefore possible to conclude that most of the BNPL services classified as short term are made up of services consisting of 3 or 4 instalments, with a duration that usually ranges from six weeks to 3 months. As regards medium-term services, which represent 29% of the sample analysed, it is possible to note that most of them have a maximum duration of 12 months. They alone represent 16% of the analysed sample. It is therefore possible to position medium-term services in second position in the ranking of the most widespread services, following short-term services. Finally, the last position of this ranking is occupied by long-term services, they represent 25% of the sample analysed. Among them, the most widespread are the services with a maximum duration of 2 or 3 years, while a good diffusion can also be found for services with a maximum repayment term of 6 years.

From this analysis it is possible to draw two conclusions: (i) the BNPL is mainly characterized by short-term credits, less than 4 months; (ii) at the same time there are many offers relating to loans with longer repayment terms, up to 6 years, which are often offered for more expensive purchases. For this reason, it is limiting to consider the BNPL as a simple means of payment that allows consumers to differ the payment of low value expenses. In fact, it is a valid alternative to the traditional forms of credit generally used to make more important purchases.

Further analyses in this field revealed that the revenue model of a BNPL service is highly affected by its duration. The following graph reports how many BNPL services, divided by maximum duration, apply fees to customers and how many did not.

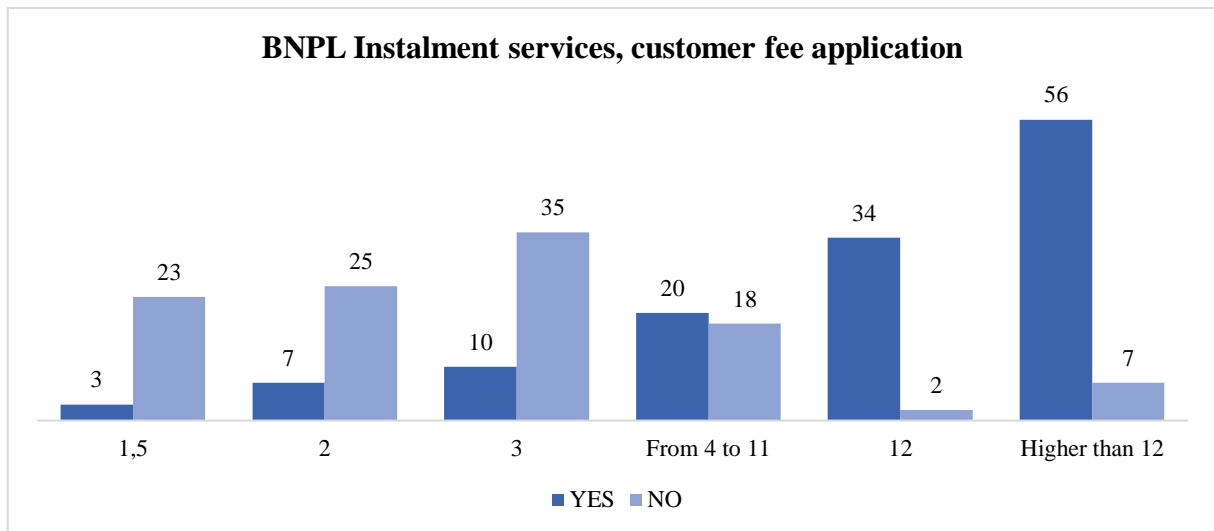


Figure 38 – Quantification of BNPL services that apply customer fees, divided by the service repayment terms. Basis of 246 BNPL services for which are known the maximum instalment terms and if they impose fee to customers.

The graph can be summarized using three main pieces of information:

- Services that have maximum repayment terms lower than 3 months in 80% of cases are free for consumers.
- Services that have maximum repayment terms between 4 and 11 months do not apply fees to consumers only in 47% of the cases.
- Services that have maximum repayment terms higher or equal to 12 months apply fee to consumers in 91% of the cases.

These data highlight an important fact, short-term services are generally free for customers, while long-term services are almost entirely paid. Therefore, increasing the duration of the service offered also increases the probability that it will impose costs on customers.

Pay Later Services

As regards the duration of Pay Later services, it is possible to identify three main repayment terms: 14 days, 30 days, and more than 30 days (usually not higher than 120 days). The graph in the following page shows the diffusion of these payment terms among a sample of 67 Pay Later services.

The most common duration is 30 days, it is offered by 66% of the services analysed. Just over one out of three services report a duration of 14 days, while 42% have services lasting between 30 and 120 days. These data show how Pay Later offers are generally characterized by a short duration, especially compared to Instalment services.

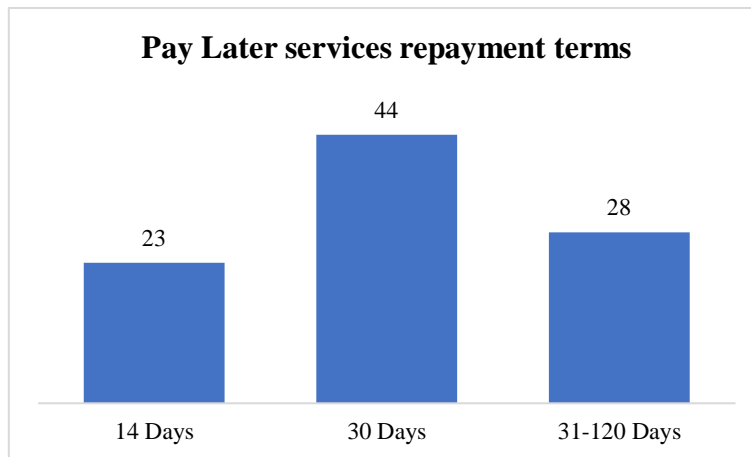


Figure 39 – Most common repayment terms for BNPL services. Basis of 67 services classified as “Pay Later”.

Also in this case, analysing Pay Later services based on the reference market, B2C or B2B, quite different results can be obtained. Most of the Pay Later services offered to private customers are characterized by a very short duration, 14 or 30 days. In fact, only 6 out of 37 B2C Pay Later services have a duration of more than 30 days. The opposite situation, however, is found among the services aimed at B2B customers, in fact they generally have a duration from 30 days upwards. This is mainly because this type of customer has more benefits in delaying the payment of their purchases in a longer period. In fact, the longer the payment is postponed, the greater the positive effect on the company's cash-to-cash cycle will be.

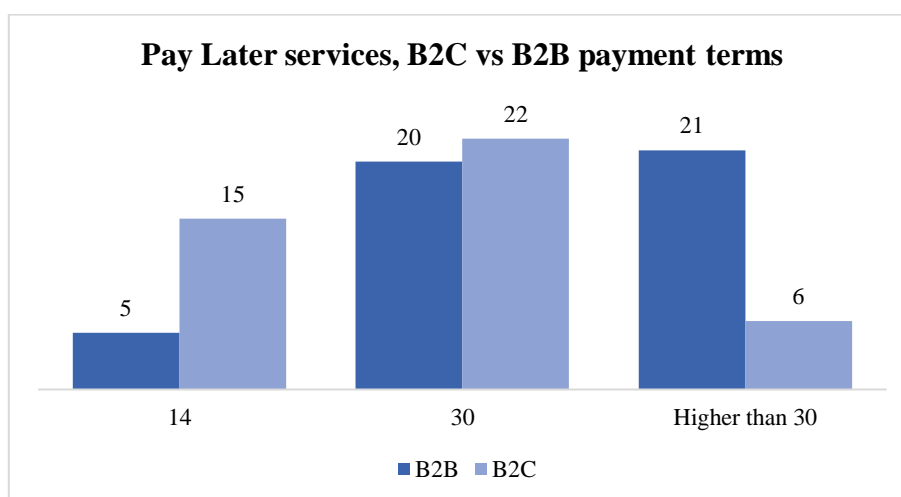


Figure 40 – Most common payment terms offered by BNPL services to B2C and B2B customers. Basis of 25 services classified as “Pay Later” and focalized only on B2B customers and basis of 37 services classified as “Pay Later” and focalized only on B2C customers.

Finally, one last aspect that differentiates the Pay Later services from the Instalment ones concerns the fees applied to customers. As seen previously, most of the short-term Instalment services are offered free of charge to customers, but this does not happen even among the Pay Later services. In fact, these services are more likely to charge consumers. Out of a sample of 52 Pay Later services, around 38% apply fees to customers, while among the Instalment services this happens only in 20%

of cases. To justify this discrepancy, also in this case, a more detailed analysis on the reference market is needed. In fact, considering only the Pay Later services aimed at a B2C market, it appears that only 21% of them charge costs to customers. Instead, this percentage rises to 75% in the B2B market. It is therefore possible to conclude that even BNPL services classified as Pay Later are mainly free for customers, but only if they are private customers.

BNPL services frequency of the repayments

The time between the payment of one instalment and the subsequent one generally varies from service to service. Among them it is possible to identify three cases: weekly payment, fortnightly payment, and monthly payment. The monthly payment is certainly the most widespread, in fact it is offered by 80% of the services analysed (basis of 278 BNPL services for which are known the payment frequencies). A good diffusion can also be found among fortnightly payments, offered by 21% of the services. Weekly payments are much rarer, they represent only 5% of the sample.

It is interesting to note that only 13 BNPL services out of the 278 considered offer multiple payment frequencies. It can therefore be deduced that the payment frequency in the BNPL market is rarely a decision chosen by the customers. In fact, the analyses carried out revealed that the frequency of payment is influenced by two main factors, the repayment term of the credit, and the country in which the service is activated.

The following graph shows the most common payment frequencies for two categories of BNPL services, short-term services (i.e. those with a maximum duration of 4 months), and medium-long term services (maximum duration exceeding 4 months).

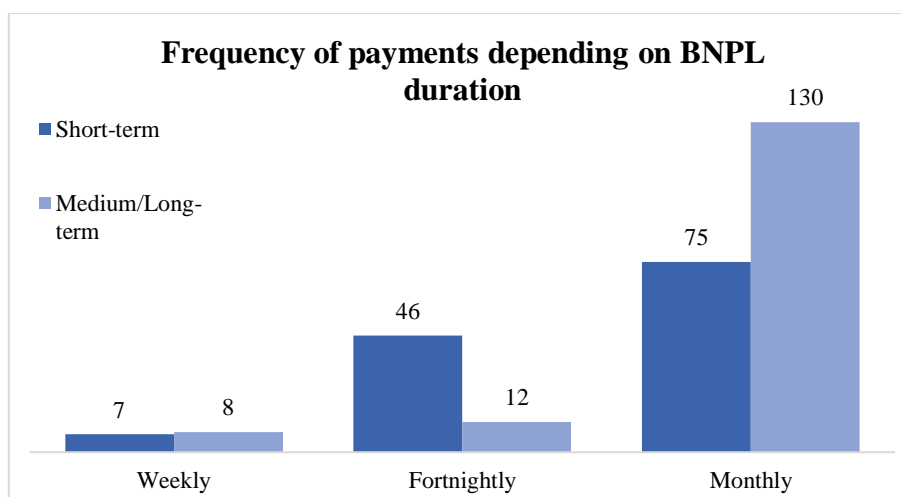


Figure 41 – Comparison of the most common repayment frequencies for short-term BNPL services and medium/long-term ones. Basis of 261 services for which are known the frequency of payments and the maximum instalment terms.

Two main conclusions can be drawn from these data:

- The fortnightly payments are available mainly for short-term services. In fact, the 80% of BNPL services with a fortnightly payment frequency have a maximum repayment term equal or lower than 4 months.
- Almost all medium or long-term BNPL services have monthly payment frequencies. In fact, only 13% of the services offer weekly or fortnightly payment options for loans lasting more than 4 months. Among them, it should also be considered that almost half (9 out of 20) have multiple payment frequency options, which include monthly payments.

The second driver analysed concerns the country in which the BNPL service is offered. The following chart shows the most widespread payment frequencies among the major geographical areas.

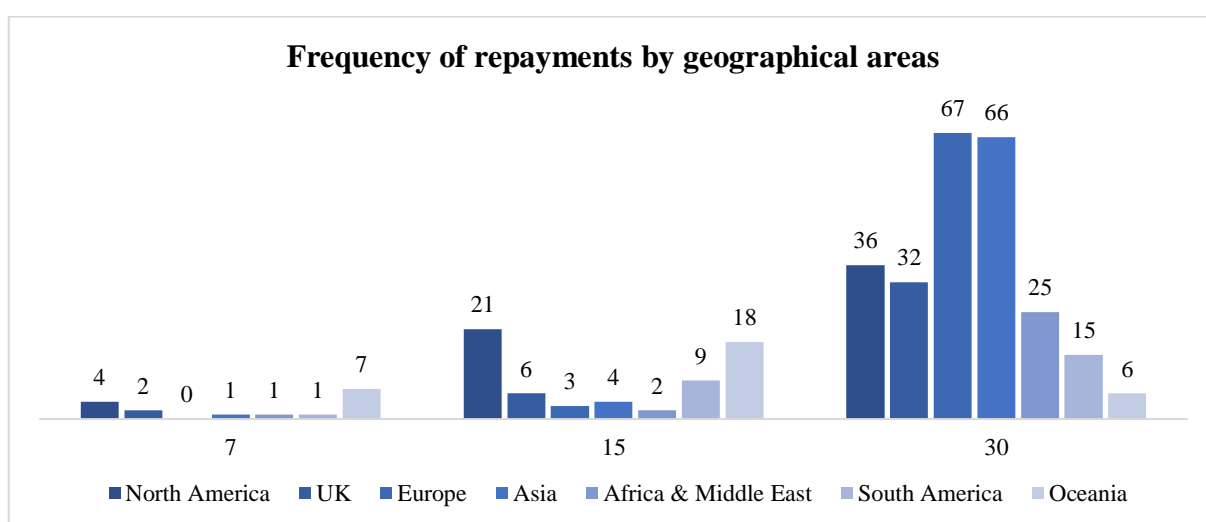


Figure 42 – Most common frequency of repayment offered by BNPL services in different geographical areas. Basis of 265 BNPL services for which are known the frequency of repayments and the countries in which are offered. Note: Indian area is included into Asia.

Three observations can be drawn from the data presented: (i) the majority of services with weekly payments are active in Oceania, 7 out of 16, or in North America, 4 out of 16; (ii) most of the services with fortnightly payments, about 62%, are offered in Oceania and North America; (iii) services with monthly payments are widespread in almost all geographical areas, except for Oceania.

Therefore, comparing the most common payment frequencies country by country, it is possible to conclude that in North America and South America, the most popular services are those with monthly payments, but services with fortnightly payments are also very popular. In Oceania most of the BNPL services offers weekly or fortnightly payments, while monthly payments are less diffused. Finally, for the other geographical areas reported, the BNPL services offered are almost entirely based on monthly payments.

This correlation between the country of origin and the frequency of payment offered can be motivated by various factors, one of the most relevant is the different frequency of salary payments that characterizes the various countries. In fact, generally in countries like Australia the payment of salaries takes place every two weeks, while in European countries the salary is distributed monthly. For this reason, the offers of the BNPL providers have adapted to these frequencies to offer a repayment schedule more suited to the characteristics of their customers.

4. CONCLUSIONS

In this chapter, the main findings of this market research will be presented and discussed. Secondly, the issue and limitations of this analysis will be mentioned, and finally some possible evolutions and future trends will be listed.

4.1. Main findings of this paper

According to the data collected in the Literature and Analysis chapters, the BNPL is a market in expansion, both in terms of offer and demand. Currently BNPL represents the fifth most widespread payment method for online purchases, representing 3% of total global ecommerce sales, and it is expected that this value will grow to 5% in 2025 (Worldpay, 2022). The last year BNPL market size amounted to \$179.5 billion, and it is forecasted to surpass the \$3 trillion before 2030 (Howarth, 2022). The BNPL usage exploded among customers especially during 2019 and 2020, in a period characterised by the Covid-19 pandemic which led to the temporary closure of many physical shops. It was precisely in these years that online commerce began to become an integral part of the lives of customers and merchants themselves. This great growth of ecommerce has in fact allowed BNPL to spread in the digital payments market. In fact, the BNPL was created primarily as a credit product for making online purchases. In fact, the penetration of BNPL among the global POS sales is only at 1% (Worldpay, 2022) and almost 95% of the companies on the BNPL market offer their solutions for online sales.

The diffusion of this new payment method changes in the different geographical areas. The North European countries registered the higher penetration of BNPL. Among them, Sweden and Germany stand out, with a penetration on online sales that stands at 25% and 20% respectively. Two relevant markets are also the Australian and the British markets, penetration of 11% and 6% respectively. Other growing BNPL markets are located in some Asian countries (such as Singapore or Malaysia), southern European countries (including France, Italy and Spain) and the United States (Fong, 2021).

In particular, the latter register important growth forecasts that will lead them to be one of the leading BNPL markets, both in terms of diffusion (9% of online sales in 2025) and in terms of market size (Worldpay, 2022). All the remaining countries, on the other hand, currently still have a low diffusion of the BNPL mainly due to poor digitization or an economy still in the development stage. Despite this, growth trends of the BNPL are also expected in these areas.

Concerning the BNPL offer, currently the market is composed by more or less 300 companies that offer 402 different BNPL services. The greatest market expansion was registered between 2019 and 2022, with 137 new BNPL solutions launched in the market, and the number of new entrants is increasing year by year. The majority of BNPL solutions are offered by FinTech companies, in fact, the analyses carried out showed that currently in the BNPL market two out of three companies are financial technology companies, of which approximately 78% provide BNPL as their core business. The players not included in this category are mainly companies from the payment industry (such as digital wallets), the credit industry (such as finance companies, banks, and credit card companies), and the ecommerce industry (such as payment gateway providers or marketplaces).

As for the customers' demand, the BNPL offer supplied varies by countries. The areas characterised by the most crowded markets are Europe and United States with 55 different BNPL companies operating on each territory. Other dense markets can be found in the United Kingdom (34 companies) and Australia (23 companies). While also India, Malaysia, Mexico, and Brazil registered a good number BNPL providers that ranges between 12 and 18. All other countries are characterised by more young markets composed by less than 10 BNPL players. Like the demand, also the offer is also continuously increasing. The strongest supply growth rates are recorded primarily among the nations currently lagging in BNPL uptake. Among geographical areas such as Africa, the Middle East, and South America, in the last 4 years there have been increases in the number of companies present in the market which vary between +316% up to +450%. While, for which concerns the more mature markets, although the growth rates are lower (since they already started from a good market size), it is precisely for these nations that the largest numbers of new entrants are counted. Also in this case, Europe and North America stand out, registering respectively 36 and 33 new entries on the market in the last 4 years.

Reason for BNPL diffusion

The factors that motivate this important diffusion of the BNPL over the years are mainly linked to its characteristics that make it a unique product both in the credit market and in the payment market.

Between these features, the most appreciated by consumers are the simple usage and the low costs (Tijssen and Garner, 2021).

In terms of usage are particularly appreciated the simplicity and quickness of the application and repayment process. Generally, the BNPL option can be directly activated during the checkout phase in the merchant web shop or POS, in fact 82% of BNPL providers integrate their payment options directly in the partner merchant checkout. Another simple method of use, that has become widespread in recent times, is the activation of the BNPL via virtual card, which allows customers to make purchases with deferred payments by paying with a payment card offered by the BNPL providers. Currently 15% of BNPL companies are offering this payment method. Instead, as regards the speed of the credit approval process, it is mainly due to the innovative and rapid customer credit assessment methods used by the BNPL companies. In fact, these assessments are often based on soft credit checks, which have no impact on the customer's credit profile, and allow for an almost instant response to a credit extension request. Currently on the market 80% of companies apply soft checks (percentage computed among companies that declare the application of credit checks and the type of checks applied), and further 6 companies declare that they do not even apply credit checks. The simplicity of BNPL usage is also given by the various payment methods accepted for the debt repayment. In fact, most of the BNPL providers accept payments by credit or debit card (55% and 59% of providers respectively), while one BNPL company out of three even allows consumers to connect the bank account to make payments automatically. Finally, 14% of providers accept cash payments, making possible for customers without bank accounts or credit cards to do online purchases. All these characteristics combined make the BNPL a frictionless payment method and credit product.

The second and even more appreciated feature is the cheapness of this service, especially compared to more traditional credit alternatives. In fact, almost half of the services offered on the market do not impose interest or other costs on customers, and this percentage even rises to 80% among services characterized by short repayment terms (no more than 3 months). This makes BNPL cheaper than the main credit products on the market, such as credit cards and personal loans. Furthermore, the payment terms offered are generally flexible. In fact, although most of the BNPL options are characterized by payments in 3 or 4 monthly (or bi-weekly) instalments, services with durations ranging between 12, 24 and 36 months are also very common. In some cases, they even reach 60 months. This allows customers to spread even the most expensive purchases into small instalments. Thanks to these features the BNPL became a valid substitute to personal loans or other traditional form of financing.

However, the diffusion of the BNPL is not motivated only by the appreciation of customers, but also by the benefits that this payment method generates for partner merchants. The most relevant beneficial effects identified are the incremental sales and the boosted brand awareness and customer loyalty. 57% of merchants stated that BNPL increased their conversion rate while 47% see an increase in the average order value (Tijssen and Garner, 2021). Studies reported that on average merchants offering BNPL see a 20-30% increase in their checkout or basket conversion and a 30-50% increase in the AOV (Perlin, 2021). Furthermore, merchants can use the BNPL companies' websites or marketplace as a showcase for their brand, while offering BNPL options at checkout had beneficial effects on the retailer brand, as their trustworthiness for customer increase in case of a partnership with an important BNPL provider. These important benefits explain why retailers are willing to pay higher fees to BNPL providers compared to the fees paid for other payment methods. In fact, 85% of BNPL's services apply a commission to partner merchants ranging from 1.5% to 7.5% of the purchase amount, while the fees applied by credit card companies are on average 1.5% of the order value.

These data show that merchant partners are therefore the main source of income for BNPL companies, especially for BNPL FinTech. For this reason, 88% of companies that offer BNPL do so through partner merchants. While only 12% offer their services at any retailer, without having collaborations with the sellers, and therefore giving up the related commissions. More than half (18 out of 34) of the latter companies are banks, credit card providers or digital wallets. These companies offer BNPL as an additional service to their core business. Integrating it into their main payment methods, they exploit the popularity of this new form of credit to increase the use of their credit/debit cards or digital wallets.

BNPL customers' profile

The fundamental features that characterize the BNPL products make them a payment method particularly appreciated by younger and customers with poor credit history or bad economic conditions. In fact, millennials and customers from Gen Z are the biggest BNPL users. Respectively 36.8% and 30.3% have made at least one purchase paid with BNPL options during 2021, and this penetration is expected to increase year by year. Older individuals are more reluctant to use this digital payment, but nevertheless growth forecasts assume that in 2025, 30.9% of Gen X customers and 14.8% of baby boomers will become BNPL users (Mambu and Deloitte, 2022).

As regards the financial situation of BNPL customers, although this payment method is particularly appreciated by young people without stable income or more economically fragile individuals, as it

allows them to make purchases that would otherwise be unaffordable, on average the BNPL users are characterised by good economic situations. In fact, on average around 50% of purchases paid through BNPL options are made by customers who have sufficient finances to cover at least 5 times the value of the underlined expenses (CB Insights, 2021). Moreover, it is among people with annual salaries under \$30,000 that the BNPL registers its lowest diffusion. In fact, only 39% of these individuals use BNPL services, against approximately 50% of individuals with annual salaries between \$50,000 and \$75,000 (Schulz, 2022).

The average monthly BNPL expenses are typically medium-low. Most customers, 76% have average monthly BNPL expenses lower than €250, while only 2% of customers surpass €1,000 (C+R Research, 2022). The AOV is lower than £100 (Tijssen and Garner, 2021), while the frequency of use ranges from one to four times a year (C+R Research, 2021). Therefore, this credit product resulted to be mainly linked to low-mid expenses made with low frequency. In conclusion the BNPL is not only linked to unaffordable purchases, but it includes also other common expenses. In fact, sometimes customers use this payment method to avoid credit card interests, or to manage their finances dividing the cost of a purchase (CB Insights, 2021). These reasons make the BNPL to be considered not only as a credit product, but also as an effective alternative to most common payment methods.

BNPL was born and spread mainly in the B2C market, i.e. among private customers. Currently 78% of BNPL companies work exclusively in this market. In recent times, however, the offer of BNPL providers is also expanding to a B2B market, i.e. among business customers. Currently 16% of providers are focused on B2B market, while about 6% operate in both B2B and B2C. The reasons for the diffusion in the B2B market are mainly related to the fact that businesses see the BNPL as an effective financing tool, which can be exploited to improve the cash-to-cash cycle, by delaying payments due to suppliers. For this reason, the BNPL offer in the B2B market is different than that aimed at private customers and has some characteristics in common to factoring. Unlike B2C which is mainly based on deferred payment services in instalments, the offer referring to the B2B market is mainly made up of services defined as “Pay Later”, i.e. options that allow customers to postpone the payment for a predefined number of days. Generally, this period varies between 30 and 120 days and then the repayment is made in a single solution. Another difference with private customers concerns the fees applied, in fact if in the B2C market short-term BNPL services are offered free of charge, in the B2B market instead, it is more common to charge customers as well. Among the Pay Later services analysed, 75% charge costs to their business users, making them an important source of revenue at the same level of partner merchants.

BNPL risks for customers

Like any other form of credit, BNPL carries with it inherent risks that may become a source of danger for customers who use it without consciousness. The main issue identified concern the risk of excessive debt. Currently customers can make multiple transactions with multiple providers, generally the information about the BNPL purchases are not shared with credit reporting agencies, so they are not registered on the customers' credit profile. This lack of data makes impossible for other lenders being able to assess the customer's real debt balance, and this facilitate customers to obtain an unaffordable debt that are not able to repay.

This risk is also caused by to the common consideration that sees BNPL not as a real form of credit, but more like a convenient payment method. This consideration leads clients to make superficial and misinformed use of BNPL services. Furthermore, the poor communication of BNPL providers regarding the applicable consequences in the event of non-payments or defaults, amplifies this problem. Currently, outside of contracts provided to customers during a transaction, only 63% of BNPL providers declares their penalties policies applied in case of missed payments, and of these only slightly more than half report the value of the late payments fees applied. This issue is even more relevant for the consequences applied in case of customers' default, i.e. in the event that the customer is unable to repay his debt. In fact, among the companies analysed, only 41% report at least one of the consequences applied in the event of default, which are generally attributable to three main actions: (i) sharing data with credit bureaus, (ii) suspend the customer account, (iii) employ a debt collection agency for the credit recovery. Finally, a further problem is posed by the lack of information regarding credit checks applied. In fact, only 23% of companies declare what type of credit check is carried out (or if they are carried out). In case of application of hard checks not clearly declared, the customers on which they are carried out could see a deterioration in their credit score, and not know a priori of this consequence could lead users to make uninformed usage of this credit product.

BNPL upcoming regulations

The risks generated by the BNPL have recently become a matter of concern for the authorities and for the legislators. In fact, the main reason for the existence of these risks lies in the scarce regulation applied to these new types of credit, especially compared to the strictest and more detailed rules applied to traditional providers present in the credit market.

Among the areas of intervention of the legislators, currently the most relevant proposals concern: (i) an increase in the support offered to customers in financial difficulties; (ii) the introduction of credit limits requirements; (iii) the imposition of mandatory limits on applicable interest and fees, in particular for late fees; (iv) the introduction of requirements related to the disclosure of all the relevant pre-contractual information for consumers, such as fees structure or hardship information, in a clear and standardized manner; (v) the introduction of mandatory credit reports to credit agencies for each transaction carried out.

The aim of these proposals is to increase protection towards customers, especially the most vulnerable ones. At the same time, however, applying the current laws imposed on traditional companies in the credit market would be disproportionate for BNPL firms, precisely because of the unique and innovative characteristics of this credit product. For this reason, regulators are trying to develop proportionate laws tailored on the offer provided by the BNPL companies.

Currently, the most advantaged nations on this front are the United Kingdom and the European Union, which are evaluating possible regulatory frameworks to be introduced in the coming years, and Australia which has temporarily opted for a self-regulation of the BNPL providers. The other nations are instead more reluctant to urgently introduce laws that regulate the BNPL market, since the still limited diffusion of this payment method in the relative territories does not make it a significant risk. Furthermore, the application of more stringent rules and laws could limit the growth of a market which in any case generates welfare for many customers, for this reason many states prefer to wait and analyse the situation, in order to develop laws that are appropriate for this new credit products.

4.2. Main limitations of this paper

This market research, having mainly relied on sources mainly provided by the companies themselves (such as websites of companies and CrunchBase) is not free from limitations or possible errors. The lack of data and the incompleteness of the data provided are the main problems encountered. First of all, starting from the census phase, it is reasonable to think that the number of players on the global market may be greater than the 300 companies identified. Also, the classification of a service as a BNPL is often problematic, as there are no standards that define the characteristics of these services. For this reason, some companies that offer services bordering on BNPL or other types of credit have been excluded from the census.

Secondly, the lack of information heavily affected the composition of the database relating to characteristics of the companies surveyed and their services offered. Many variables analysed have

in fact remained empty or were filled using likely values. The main missing information regards the fee structures (especially fees related to merchants), the repayment structures, the methods of payments accepted for the repayment of the instalments, the variables analysed during the credit assessment phase, and finally the possible consequences in case of missed payment (late fee) or customers' default. All this missing data therefore makes the results obtained and exposed in the analysis chapter, characterized by a certain margin of error that varies for the different variables analysed. So as the number of empty cells for a variable increase, the margin of error on the results obtained analysing the underlined variable will be higher.

For this reason, the objective of this paper is not to collect all information relating to the BNPL market, but rather to provide an image, an estimate of the current market, its characteristics and possible future developments. The analyses carried out must therefore be considered as searches carried out among samples of individuals which give an estimate of the entire population.

4.3. Market's future developments and suggestions for future research

Predicting how the BNPL market will evolve in the coming years is difficult, given that its scenario in continuous evolution is influenced by many external factors. Some of these factors pose serious problems for current BNPL pure players, despite the growth forecasts of the BNPL usage. These factors include an increase in competitiveness in the more mature markets, in fact in countries like the United States or Great Britain the market is now saturated with providers, but the number of new entrants is growing year by year. This increase in competitiveness will lead to a progressive decrease in fees applied to merchants, which combined with increases in the costs to be compliant to the impending regulations and an expected increase in interest rates on the market, will lead to a reduction in the already low profit margins of BNPL providers. This possible drop in the already low profitability of BNPL is reducing the volume of investors willing to finance this industry, making fundraising difficult for the companies that offer BNPL as core business.

So, the BNPL FinTech in the near future will have to reinvent themselves, innovating and differentiating their offer. Due to this reason, among the possible future trends of the BNPL market, the main ones are:

- Differentiation of pure players who will expand their offer by entering in new businesses. A relevant example is Klarna which has started a transition to become a super-app with the aim to offer a complete integrated ecosystem of financial and non-financial products and services for the users' everyday needs.

- The expansion of BNPL's services also to physical channels, in order to create an omnichannel offer. In fact, the BNPL was born as a product offered principally at online shops, while today about 55% of companies offer their BNPL options both online and at POS.
- Expansion into the B2B market, presently underexploited. This market can be an opportunity for many BNPL players due to the low present competition and a higher margin rate, due to the fact that the transactions carried out by business customers have an average higher value than private customers, and it is also common the application of costs to B2B customers even for short-term credits, unlike the B2C market.
- New and innovative BNPL features offered to customers and merchants. BNPL FinTech continue rethinking and redesigning their products to make them more suitable and appealing to customers and partner merchants. Some interesting functionalities for customers include open-banking powered consolidators, to provide customers with a consolidated view of their installation payments from multiple credit providers in one place, and the provision of virtual payment cards that allows consumers to apply the BNPL options at almost all merchants. As far as retailers are concerned, the white-labelled BNPL is becoming increasingly popular. Many merchants in fact prefer to have a BNPL checkout option under their brand, to provide a full-branded experience to their customers. Currently 15% of BNPL companies are offering white label solutions, and more than half of them launched this solution in the last three years.
- Expansion in new geographic markets. The BNPL market is already saturated in areas like Europe, Australia, and the US. So, it is likely that BNPL companies will expand into less exploited markets in the future. Areas characterized by a still scarce offer, like Asia, the Middle East, Africa, and South America, are represent an excellent opportunity for BNPL FinTech to expand their business.

Finally, although the future is still uncertain for the majority of BNPL pure players, on the other hand, BNPL payment products, given their growing popularity, represents a great opportunity for companies from other industries. In fact, many banks, payment gateway providers, credit card providers and digital wallets are starting to include BNPL options in their offers, integrated into their core payment methods, such as debit or credit cards. Similarly, some retailers and marketplaces are developing proprietary BNPL solutions offered on their own sales channels as additional services to exploit the incremental sale generated and avoid the high fees imposed by BNPL providers. The ratio between BNPL services launched by FinTech and those launched by other companies such as banks or payment gateway providers is constantly decreasing. In fact, in 2021 more than 40% of new entrants in the BNPL market are not FinTech companies, and this percentage surpass the 50% during

the first half of 2022. In conclusion the future BNPL market will see an increasing presence of companies from the retail and the payment industry since these companies could leverage the BNPL as an additional service that increases the sales of their core products or the usage of their core services.

From the research perspective, it is recommended to focalize the future studies on the possible evolutions of the BNPL pure players and the consequences on the BNPL market. To date, the future of many BNPL leaders is very uncertain, in fact, after years of unchallenged growth, the first obstacles are arising, threatening the major players on the market. Among them, the strong downsizing of some companies and business plans, due to their low profitability in recent times, are of particular relevance. It is therefore important to understand how these companies will react to the potential "crisis" that awaits them and the effects of this response on the BNPL industry.

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