Survival of the Vinyl Revival:

A study on the contemporary co-existence of vinyl records and streaming services

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Abstract

In this research the resurgence in popularity of the analogue vinyl record, also called the vinyl record, will be compared to the increase in popularity of digital streaming services. In previous academic literature, the nostalgia and tangibility that the vinyl record contains, and streaming services do not, have often been concluded to be a large part of the renewed interest in vinyl records. The co-existence in the market in which both carriers are present, is, however, not researched yet. This research therefore aims to explain in what way the co-existence of analogue vinyl records and digital streaming services are able to co-exist within the same market for recorded music carriers.

Using a cross-sectional research design, an online questionnaire was distributed via social media to Dutch vinyl listeners. With a sample size of 225 respondents, results were conducted via descriptive statistics, multiple regression analysis and a multivariate analysis of variance. Results indicate that vinyl records and streaming services are indeed present in the same market and act as both imperfect substitutes and complements. As both carriers have the same purpose of playing music but have multiple features which distinguish them from each other and from other carriers, their substitutability is imperfect. The experience attributes that music brings with it is present on both music carriers, whether vinyl or streaming. However, there is a difference in short term and long term pricing of both carriers which vinyl listeners use to overcome the experience attributes in some way. Listening to music via, on the short term, cheaper or even free streaming services is complementary to the decision of purchasing that music on vinyl, the more expensive carrier on the short term.

Consumer demand for both carriers is thus growing and they both reinforce each other in growing even further. The vinyl revival was not only noticed by academics, the music industry also jumped aboard and fully commercialised the analogue record in the contemporary digital era. Results indicate that this commercialisation is nearly inescapable in contemporary society since a significant number of respondents are buying the analogue record via online, digital, websites nowadays. The co-existence of the analogue and digital aspects of the music industry keeps increasing in interesting ways.

Keywords

Vinyl revival, Streaming services, Co-existence, Consumer demand, Commercialisation

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Chapter 1 – Introduction

"The next decade is going to be streaming plus vinyl – streaming in the car and kitchen, vinyl in the living room and the den. Those will be the two formats." (Jack White in Knopper, 2018). In today's digital era, it is a bold statement to say that an analogue music carrier will co-exist next to the newest technologically innovative digital carrier. Nevertheless, the analogue vinyl record has already found its way back into the contemporary music industry (Bartmanski & Woodward, 2015; Nokelainen & Dedehayir, 2014; Palm, 2019). This revival has been growing for a few years now and numbers indicate that the carrier is planning on growing further into the mainstream music industry. Musician Jack White thus might have predicted an accurate future of music carriers in the next decade.

Over the last decade, the technology behind the vinyl record has remained similar to when it was first produced (Dowd, 2006; Remic, 2015). In the market, however, its presence has not remained stable. The United States has the largest music industry in the world, according to International Federation of the Phonographic Industry (IFPI, 2019). Since the peak year for vinyl records and singles in 1978, the number of sales has been decreasing (RIAA, 2020). It has even fallen so much that in 2006 and 2007 the total sales of vinyl records and singles in the US was only 2 million US dollar. Since then, vinyl has slowly gained more interest from the mainstream music listener with increased sales and revenues as a result, thereby starting the vinyl revival.

Globally too, the vinyl revival is visible. Numbers from the IFPI also show an increase in revenue for vinyl sales from 2006 and onwards (IFPI, 2019). Nevertheless, not all music industries have adopted the vinyl record fully again. The NVPI is the Dutch Association of Producers and Importers of image - and sound carriers, which includes the music industry. Whilst being included within the IFPI, the Dutch music industry shows a decrease in revenue for vinyl records since 2018 (NVPI, 2020). In the Netherlands, it seems that the vinyl revival has reached its peak and is either decreasing in sales and revenues or has found a steady ground to remain viable in the market for recorded music carriers. This all depends on the behaviour of the consumer since vinyl records are not the only recorded music carriers in the market.

In today's digital era, streaming services dominate the market in terms of the amount of music listeners (Bates, 2019; Cameron, 2015; IFPI, 2020). The newest technological development allows consumers to listen to nearly any song, from their often enormous catalogue, whenever they want and wherever they want. On-demand streaming is often available in the form of a small monthly subscription fee or for free, which entails advertisements. On the short-term, streaming is rationally speaking the best and cheapest decision compared to other music carriers since it is a low monthly subscription or completely free, depending on the type of subscription. Nevertheless, both digital and analogue come together in the contemporary market and both are increasing in terms of sales and revenues. However, it is indeed streaming that has the largest market share and will undoubtedly remain viable in the future, whereas the future of the analogue vinyl record remains unclear in terms of viability in the market.

For cultural economics, this renewed popularity of the analogue vinyl record, is of great interest and has been researched a great amount (Bartmanski & Woodward, 2015; 2018; Bates, 2019; Hracs & Jansson, 2017; Nokelainen & Dedehayir, 2015; Palm, 2019; Sarpong, et al., 2016; Styvén, 2010). Academic literature on this subject has explained the resurgence in popularity of the vinyl record already and concluded that the nostalgia and the tangibility of the vinyl record opposed to streaming services, is what has made them popular again. This research too, focuses on the vinyl revival of the latest years especially paying attention to the co-existence of both carriers in, presumably, the same economic market. Previous academic literature has not paid much attention to this branch within the subject, this research therefore strives to take the explanation of the vinyl revival a step further and studies the presence of streaming services in the contemporary recorded music market. The gap in academic literature is aimed to be closed by answering the following research question: In what way are analogue vinyl records and digital music streaming services able to co-exist within the same recorded music market? The term vinyl records here represents both LP's and singles, since singles do not make up a significant part of all vinyl sales anymore (IFPI, 2019; 2020; NVPI, 2020; RIAA, 2020). The concept of digital music streaming services includes both paid and unpaid subscriptions to any of the existing platforms of today. The co-existence of the two carriers depends on them being complementary or imperfect substitutes. As the same recorded music can be consumed from both vinyl records and streaming services, these carriers have the tendency of being imperfect substitutes in the same market (Power, 2010). The complementary co-existence of vinyl and streaming should, however, also be considered. The possibility of the market existing on complementary assets between both carriers is present. These previous definitions of co-existence are based on vinyl records and streaming services catering for the same market, however, this could be wrongly assumed, in which case vinyl records and streaming services should not be thought of as imperfect substitutes or complements, but as mere music carriers that each act in their own market.

In academic literature, the vinyl revival, or resurgence, is discussed abundantly. Being supported by empirical evidence from global and national recorded music datasets, the IFPI, RIAA and NVPI, this development in the music industry is officially academically recognised. However, past and present studies on this phenomenon have not yet discussed every aspect. There are still pressing questions about the use of vinyl records in contemporary, digital society. Looking at the number of sales and the total revenue of vinyl records, a growth can still be seen, even if it is not growing in all national markets anymore (NVPI, 2020). The future of a market can be very unpredictable, as nobody also saw the renewed interest in vinyl coming in 2006. This research will, however, try to create a future prediction based on the behaviour of vinyl listeners. Their habits and preferences towards the recorded music carrier, will be brought further into the light whilst also comparing their habits and preferences for other recorded music carriers. Previous research has studied the market for vinyl records and vinyl records alone. This research strives to include and distinguish two carriers within that same market. The preferences and habits of consumers towards digital music on streaming services, is here of importance too.

Quickly comparing streaming and vinyl, results in thinking that streaming is the popular carrier used by mostly younger consumers and vinyl is the old carrier that is used by the older generations (Nokelainen & Dedehayir, 2015). Nevertheless, the music purchasing habits in 2019 show that the age group that purchases the most vinyl is between 25 and 34 years old (IFPI, 2019, p. 17). In fact, the highest researched age group, between 55 and 64, is responsible for the lowest percentage of vinyl purchases in 2019. Previous academic and social studies on vinyl thus must be updated in order to remain on the same level as contemporary society, with regards to purchasing and consuming music via vinyl records. Hereby, a new demographic profile of the vinyl consumer will be set against the demographic profile of the streaming consumer. This research attempts to derive at new conclusions about the vinyl revival within today’s digital society that will benefit both society and academic literature on the subject.

While this research is being conducted, the aim is not merely to answer the main research question but also multiple subquestions along the way. As this research focuses on vinyl records and streaming services, other music carriers that have been developed will only have a small role in this research. Nevertheless, it is interesting to research whether today’s music listeners only fall back on the analogue vinyl record or also return to the analogue cassette and digital CD’s. For cassettes, this has already been ruled out by previous academia (Nokelainen & Dedehayir, 2015, p. 69), but CDs still have an uncertain presence in the market.

The accompanying subquestion will therefore be: Are CDs still being used as music carriers by today's music listeners?

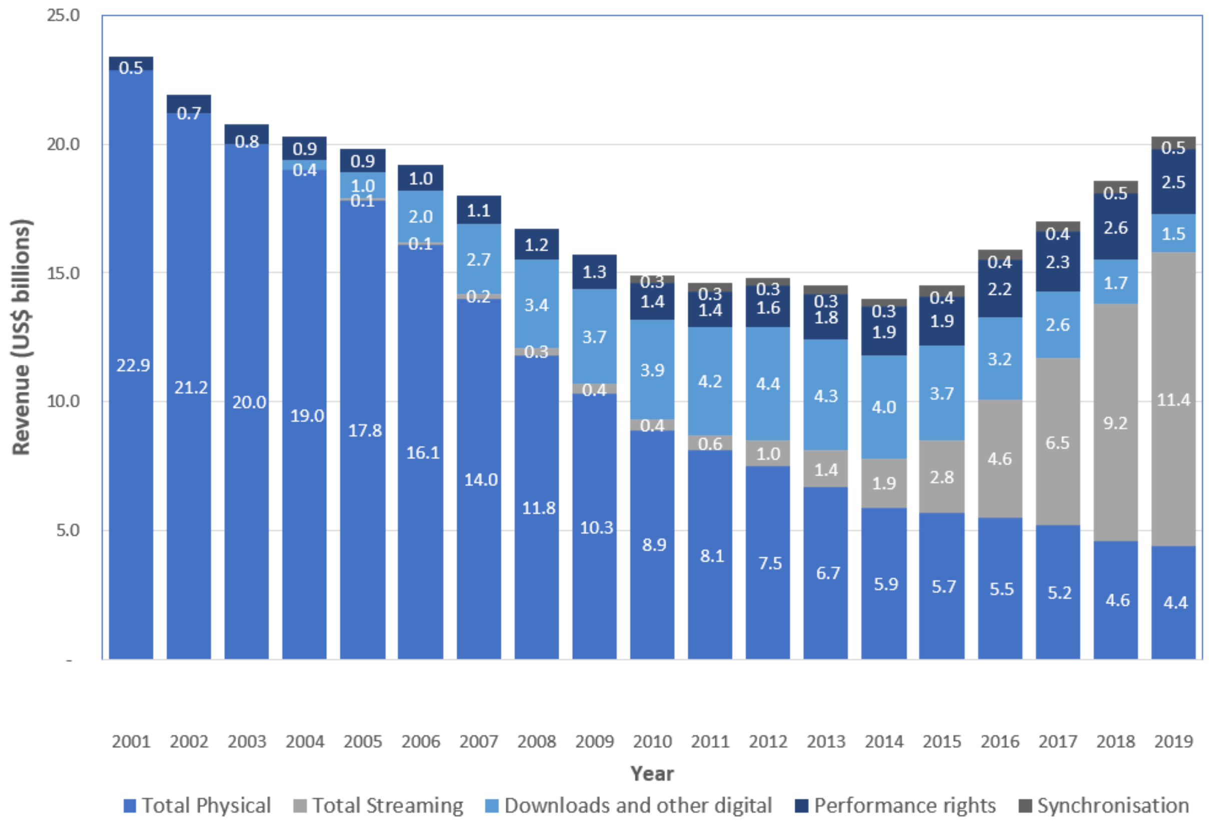
Furthermore, as both the vinyl record and streaming services are growing as a carrier in today's recorded music market, the way music listeners make use of both carriers is important for this research. What are the habits and preferences of music listeners in terms of their preferred music carrier? For this subquestion, habits and preferences of music listeners in general and specific to both carriers will be tested and studied. Through this, the studied sample will also show whether these music listeners make use of both vinyl records and streaming services and what the difference in use might be. Do today's music listeners make use of both vinyl records and streaming services? Do they make use of both carriers in the same way or is their usage different for both carriers? The answers to these subquestions should give a more elaborate answer and explanation to the main research question.

Through a cross-sectional research design using a quantitative online questionnaire, this research aims to answer the research question and its subquestions (Bryman, 2016). Data from the music listening habits and preferences from 225 vinyl record consumers has been retrieved through a total of 20 questions, which included Likert scales, multiple choice questions and open-ended questions. The questionnaire has been spread online through the social media pages of multiple Dutch independent record stores and two private Facebook groups, with vinyl records as their subject, have distributed the questionnaire on their pages. In chapter three this research method will be further discussed and elaborated on, including an explanation of how the theories have been modified into variables that the survey has measured. In chapter four, the found results will be presented and interpreted. The last chapter will discuss the results further and arrive at a conclusion and final answer to the main research question. But first, chapter two contains an overview of previous research on the subject and a theoretical framework will be formed. Most of the discussed theories here, will also be of importance in the chapters thereafter.

Chapter 2 – Theoretical framework

In a market for carrier formats of reproducible cultural products, oftentimes one carrier dominates the market at a given point in time (Handke, 2010). In the US music industry, the dominating carrier has shifted from vinyl to cassettes to CD's to downloads (RIAA, 2020). Nowadays, streaming generates the most revenue for the music industry and is therefore the dominating music carrier globally, but also in national markets (IFPI, 2020; NVPI, 2020; RIAA, 2020). Nevertheless, the sales of the analogue vinyl records have been increasing since 2006 (Bartmanski & Woodward, 2015; 2018; Nokelainen & Dedehayir, 2014; Palm, 2019). However, this has not immediately lead to a global increase in revenue, as revenues for the vinyl record only started increasing from 2014 and onwards (see graph 2.2).

Graph 2.1 - Global recorded Music Industry Revenues 2001 - 2019 (US$ Billions)

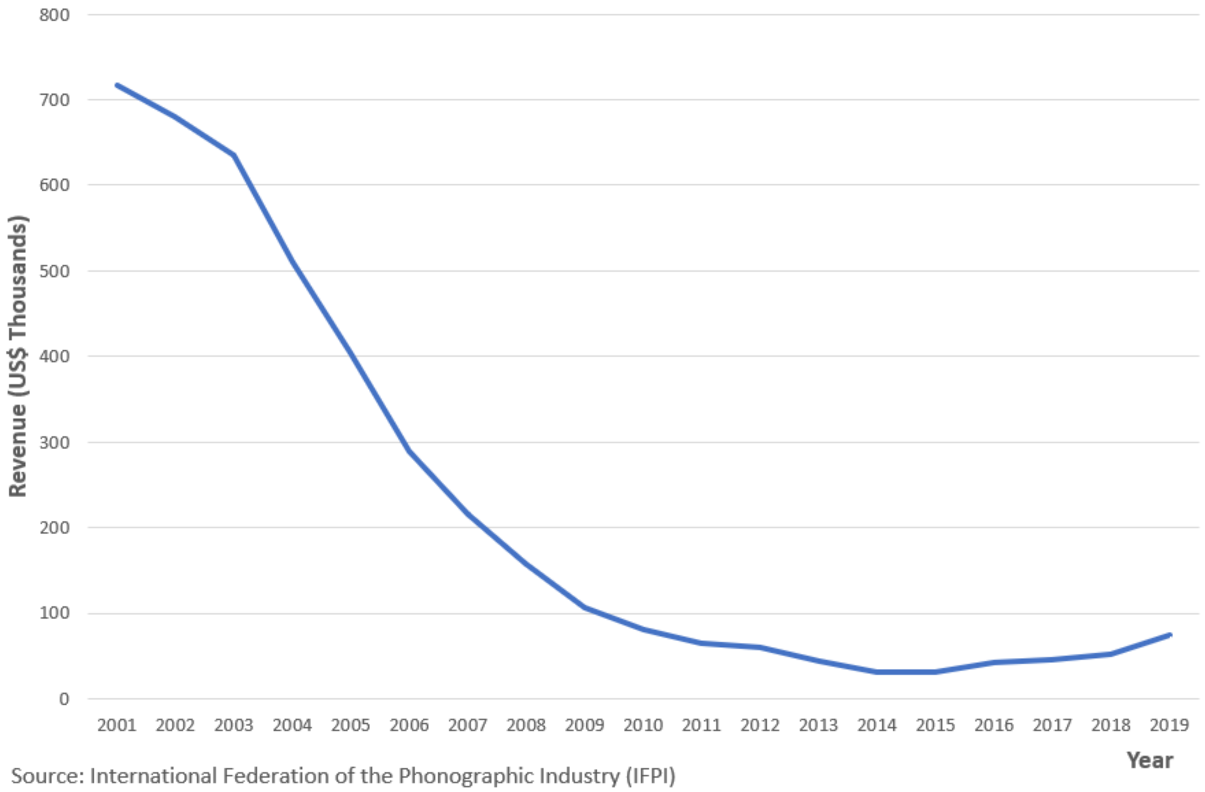


Source: International Federation of the Phonographic Industry (IFPI)

The recorded music industry was initiated with the first carriers around the late nineteenth, early twentieth century with the phonograph music records (Peterson & Anand, 2000). At that time, selling the recorded music on physical products became the primary source of revenue for the music industry. At first, these phonograph records were made from shellac, but starting in the 1940s, it became common to use vinyl to produce recorded music on, hence the name 'vinyl records' or simply 'vinyl' (Dowd, 2006; Remic, 2015). The analogue technique used to play recorded music from a rotating record on a wax plate has only slightly changed over the years. Its 78 rpm (rotations per minute) was altered to 45 rpm for a single and $33^1/_3$ rpm for the vinyl long-playing (LP) after which the technological developments of the vinyl record were brought to an end around the 1950s. Compared to the vinyl records that are being produced today, these do not differ in technology from those produced in the 1950s.

After the vinyl record, cassettes became the most popular music carrier, but this was also replaced after digitalization of the music industry was initiated with innovative MP3 files and CDs (Bartmanski & Woodward, 2015; 2018; Nokelainen & Dedehayir, 2014; Palm, 2019). Nowadays, this digitalization has grown even further and global and national markets are dominated by the digital streaming services as the most popular recorded music carrier. However, the consumer side of the market has shown a surprising increase in demand for the analogue vinyl record that started around 2006. At this point, the music industry has had the time to overcome the shortage of supply of vinyl records and adapt to the new consumer demand. Nevertheless, there is still a lot of uncertainty on both the supply and the demand side in terms of the 'vinyl revival', as the phenomenon is often called in academic literature.

Graph 2.2 - Global Vinyl Record Revenue 2001-2019 (US$ Thousands)



Source: International Federation of the Phonographic Industry (IFPI)

Consumer demand

In microeconomics it is assumed that traditional consumers are searching to interrelate their demand, the price of goods or services and their income so their utility would be maximized (Einarsson, 2016; Moscati, 2007; Zhuang, 2019). According to consumer demand theory, every marginal unit of a good or service that is consumed, will add to the utility of that good or service until utility is maximized and the consumers' needs will become satiated. Three basic assumptions of human behaviour are thus at play: utility maximization, satiation and decreasing marginal utility.

Cultural economics, however, does not often contain 'traditional' consumers. Demand for culture increases with every consumption of culture (Einarsson, 2016). In the case of music, this means that frequently listening to music creates a taste for that music and can lead to a positive addiction and increased consumption capital (Schulze, 2003). The marginal utility of music increases with every additional consumption and thus rises over time. This also leads to consumers wanting to consume more instead of their needs getting satiated. The non-satiation of cultural goods, like music, leads to an untraditional and often irrational market.

Following the theory of consumer demand, individuals make choices based on their individual preferences and budget constraints. This applies in the cultural sector too, but slightly differs for every branch (Schulze, 2003). Focusing on the music industry, changes in consumer demand of recorded music carriers have showed up in this industry quite often in the last fifty years. Demand for recorded music carriers has changed from vinyl records to CD's to download singles. Within 30 years, sales of vinyl records on the US market have gone from their peak year in 1977 to an all-time low in 2006 (RIAA, 2020). Nevertheless, the number of sales and the total earned revenue for this carrier has started rising again from 2007 and onwards. In the digital age that the music industry has entered since the developments of CD's and MP3-files (Dowd, 2006), consumer demand has also risen for the analogue carrier that is the vinyl record. This not only counts for the US music market, global data from the IFPI also shows an increase in consumer demand for vinyl records since 2007 (IFPI, 2020).

Remarkable for the increase in sales and revenue of the physical vinyl record, the total revenue and number of sales for all physical records has been in a state of decline for over twenty years (IFPI, 2020). This indicates that other physical recorded music carriers, like cassettes and CD's have been in a downfall and hardly have any consumer demand left (Nokelainen & Dedehayir, 2018). As can be seen in graph 2.1, streaming revenue now makes up more than 50% of the total global recorded music industry revenues. Both the digitalization of the music industry and the ongoing renaissance in vinyl format sales are thus present in the contemporary global recorded music market. Following the theory of consumer demand, this is a noteworthy phenomenon.

When deciding whether to purchase a vinyl record or a subscription on a streaming platform, the consumer makes a rational decision based on the perceived utility both products would bring them (Einarsson, 2016; Moscati, 2007; Zhuang, 2019). The utility received from the consumption of one or the other should be maximized as much as possible. To make a completely rational decision, is practically impossible. Nevertheless, the price and value of each decision is often taken into consideration when deciding on consuming that good or the other. The information of the price and value of the content of a cultural good is, however, complex and very subjective (Einarsson, 2016). In the case of the music industry, the cultural good that does not have full information available before consuming, is the musical content. Besides that, the media formats themselves also add to the hard decision-making process. The enormous catalogue of artists and genres available on streaming services should rationally outweigh the costs of buying a vinyl record with a very limited number of songs. On the short term, a paid monthly subscription is therefore much less costly than purchasing one record. The long term, however, suggests otherwise as a vinyl record would only have to be paid for once to listen to the musical content and the paid streaming subscription must be paid for every month to maintain access to the same musical content (Arditi, 2018). This does, however, not count for all streaming subscriptions since multiple recorded music media formats have a free option, for instance Spotify or YouTube. The downside of these free options is the presence of advertisements. Many subscribers therefore choose to pay a small monthly fee to gain access to the large catalogue (Spotify, 2020). Deciding on whether to buy one or the other media format, does not only depend on the information available on the content, but also on the short and long term price-value preference.

Another point of interest in rational decision-making, is the network effect that purchasing the same carrier as others brings with it (Handke, 2010). Being able to play multiple different recordings on a single device and exchange the carriers with other consumers is very convenient. However, the network effects that vinyl records bring with them, do not immediately outweigh the advantages of digitally streaming music (Arditi, 2018).

The analogue vinyl record and the digital streaming services

The reason why vinyl records became one of the first recorded music carriers with a rising consumer demand, is simple: at the time, it was the only carrier available. Nowadays, the analogue carrier must compete in the market against multiple different analogue and digital recorded music carriers and is not the only carrier available anymore. The reasons why consumer demand for vinyl is still present, and increasing, are thus different from the reasons to buy recorded music on vinyl (see table 2.1).

Table 2.1 - Comparison of features: vinyl records and streaming services

Vinyl records - Analogue	Streaming services - Digital
Superior sound quality (for some)	Compressed digital files, lesser sound quality
Nostalgia and authenticity of older and original records	Newest technology does not yet have nostalgia and authenticity
Tangible, collectible and aesthetically pleasing appearance	Intangible, digital files
Purchase one record (high price to pay once), own it	Paying monthly subscription fee (or free account with advertisements) gives access to large music catalogue
Accessible on large turntable, not practical to be portable	Portable and accessible on (nearly) any digital device
Limited number of songs available on one record	On-demand (enormous catalogue allows music to be accessible anytime, anywhere)
Personal recommendation from record store owner	Personal recommendations are computer-generated

In the academic fields of culture and media, extensive qualitative research has already been done to explain the reasons behind the counterintuitive phenomenon that is the vinyl revival (Bartmanski & Woodward, 2015; 2018; Dowd, 2005; Giles, et al., 2006; Nokelainen & Dedehayir, 2018; Styvén, 2008). In terms of specific features of the carrier as a product, multiple reasons for consuming vinyl records today have been concluded from previous research. Firstly, for some people, the sound quality of vinyl records is better than their digital alternatives (Nokelainen & Dedehayir, 2018; Styvén, 2008). According to LP enthusiasts, the richer sound from the analogue carrier is more ‘natural’ and ‘true’ to the actual nature of music and the digital alternatives sound more ‘sterile’. Especially when listening through stereo speakers, the discrepancies between the original recording and the compressed, digital version is noticeable. Nevertheless, most people do not solely consume vinyl based on its sound quality, simply because most consumers do not hear a clear difference. Furthermore, when taking technological developments into account, it is contradictory that the older carrier is perceived to have a better sound quality than the new and improved carrier (Bartmanski & Woodward, 2015). Digital formats of recorded music are, as mentioned, compressed files of the original recording. The quality that the original had to offer, that is still audible via vinyl record, has been reduced to a smaller, less audible quality compared to the original.

As an older carrier, older generations of recorded music consumers have grown up with vinyl records as one of only a few recorded music carriers available (Giles, et al., 2006; Nokelainen & Dedehayir, 2018; Palm, 2019). It could therefore be very nostalgic for those people to listen to the music of their youth via the carrier of their youth. It is therefore more likely that older generations are the ones creating more consumer demand for the vinyl record in these digital times. Building on the nostalgia, or authenticity, and sound quality that vinyl records have to offer, some consumers do not want to transit away from the familiar vinyl record to newer, digital technologies (Nokelainen & Dedehayir, 2018).

Another explanation of the increase in popularity of vinyl records, is the music that is available on vinyl only. Some artists have not reissued their music on a newer format and therefore have only made their music available on vinyl (Nokelainen & Dedehayir, 2018). Furthermore, there is a distinction to be made between new records of music released after 2005, original versions of older records released before 2005 and the remastered versions of those older records (Palm, 2019). Most often, original versions of older records are being sold on the second-hand market via independent merchants, thrift shops and flea markets. However, these sales are not tracked by the industry. The global vinyl revival that can be seen in global and national data, is therefore based on the sale and generated revenue of new records and remastered records. It is thus important to note that data and figures that represent the vinyl revival do not include the whole market for vinyl records. Consumers wanting to buy the original vinyl version of their favourite artist, are not fully included in the numbers, but can still be a new consumer of vinyl records and has therefore contributed to the contemporary vinyl revival.

A large difference between vinyl records and digital streaming services, is the tangibility (Bartmanski & Woodward, 2015; 2018; Giles, et al., 2006; McCourt, 2005; Nokelainen & Dedehayir, 2018; Palm, 2019; Styvén, 2008). Vinyl records are physical products that can be touched and felt. The tangible experience of listening to music via vinyl, is a reason for some to consume music via vinyl instead of any other carrier. The attractive, aesthetic appearance of vinyl records make the carrier ideal to collect. Physical carriers are very collectible, but the appearance of the vinyl record contributes some more to the collectability of the carrier.

In terms of the specific features of the vinyl record, there are multiple different explanations of why the analogue carrier became popular in these digital times. Nevertheless, there are also multiple studies done on the advantages of digital music streaming services as compared to the analogue vinyl records. For streaming services, these advantages are related to the use of the carrier, since it is an intangible music carrier and therefore does not contain physical features like the vinyl record does. The streaming service model has been developed some time ago and has now fully reached the predictions that were made then (Arditi, 2018). It was predicted that the music industry would become increasingly more service-like than goods-like (McCourt, 2005; Styvén, 2008). Music has become more of a service than a product in which licensing and subscriptions are central in the new business models and marketing approaches. The shift has gone from music collectors to music users since the distribution system has shifted from purchasing and then owning a physical music carrier, to paying a monthly or yearly subscription and having access to nearly all music as long as the subscription is being paid.

Here it must also be considered, that most music streaming services also have a free subscription possibility (Arditi, 2018). The ‘freemium’ model offers the complete service, but with interruptions from advertising. The streaming service that has had the most success with its freemium service, is the Swedish Spotify. As of April 29, 2020, the platform had 130 million paid subscribers and 286 million monthly active users (Spotify, 2020). This also means that 156 million Spotify users are not willing to pay any money for a monthly subscription without advertisements. The revenue of streaming services, paid subscriptions, is now responsible for more than half of the total industry’s revenue (IFPI). It is remarkable that most music users are, however, not willing to pay a small monthly fee for an enormous catalogue but they are willing to pay more to own a physical album or single on vinyl.

Another key advantage of streaming services is the ‘on-demand’ accessibility (Hracs & Jansson, 2017). The digital content on all streaming services, not just for music, is available whenever and wherever consumers want access to the enormous digital catalogues. For music streaming services this means that the only conditions to have music available to them on-demand, is having created a subscription account, whether free or paid, and to have internet access. In the digital era, nearly everyone in the world has access to the internet through a smartphone, which can also house the applications for different streaming services. When wanting to have access to a very large number of artists, genres and songs, the streaming services facilitate this access immediately to their consumers. Compared to vinyl records and the other physical precursors of this digital music carrier, the on-demand accessibility of music streaming services has an enormous advantage in today's society where everything has to go increasingly quicker every day. Nevertheless, data and academic research has shown that music consumers do not unconditionally favour the quick streaming services above vinyl records. Music consumers want to take their time with music. They are not looking only for the quickest way to get access to their favourite artists or genre anywhere and at any time of the day, they are looking for an extra experience that digital files cannot facilitate (Nokelainen & Dedehayir, 2018). Still, streaming services have also never had such a high number of subscribers as they have today. The market for music carriers remains predominantly digital.

Personal recommendations from record store owners have been very important for the vinyl revival, but streaming services also benefit from their own recommendation systems (Hracs & Jansson, 2017). The digital online presence of streaming services also calculates computer-generated recommendations based on previous music you listened to. The collaboration of social media pages and streaming services makes it possible to also make recommendations based on what your friends listen to. Studies have, however, shown that music consumers use streaming services and their easy recommendation system to find out what they like, which they then buy on vinyl (Giles, et al., 2006; Hracs & Jansson, 2017; Nokelainen & Dedehayir, 2018; Palm, 2019).

Streaming services are meant to be a technological development that improves every precursor as a music carrier, there are multiple aspects on which the vinyl record and the streaming service differ, and streaming does not always come out on top. The music consumer makes decisions based on the differences of experience between both carriers. This has led to an increase in consumer demand for vinyl records in the last fifteen years, but also an even bigger increase of streaming subscribers. In the market of discovering new music, streaming services have taken the lead since music consumers have admitted to listen to new music via streaming first before making the decision to purchase the full album on vinyl.

Experience attributes

As explained before, music is a cultural good that does not satisfy the needs of the consumer once it is consumed more (Einarsson, 2016). Consuming more music, leads to an increase of the consumers' cultural capital, which leads to a non-satiated increase of consumer demand in music. For cultural goods, like music, demand increases with the increase in consumption.

Looking specifically at artists or albums, the non-satiation principle as explained above could also be applied. Discovering new music that you might like, is done via streaming services nowadays since it is the cheapest short term option (Arditi, 2018). Through the digital streaming service subscription, consumers have access to an enormous catalogue of new and old songs, artists and genres. To build up cultural capital, streaming is the music carrier that is the most rational based on the amount of content offered and the short term price. It is also exactly why a large number of music consumers use this new music carrier.

Music as content is a very subjective good in terms of taste. Consuming and experiencing new music therefore play a central role in taste formation (Giles, et al., 2006; Handke, 2010; Handke, et al., 2016). As rational consumers, music listeners are willing to pay for the music they know they already like. In order to get experienced with new music, streaming services are used to get more information and experience with the music after which a rational decision can be made on whether to purchase the vinyl record, which is more expensive.

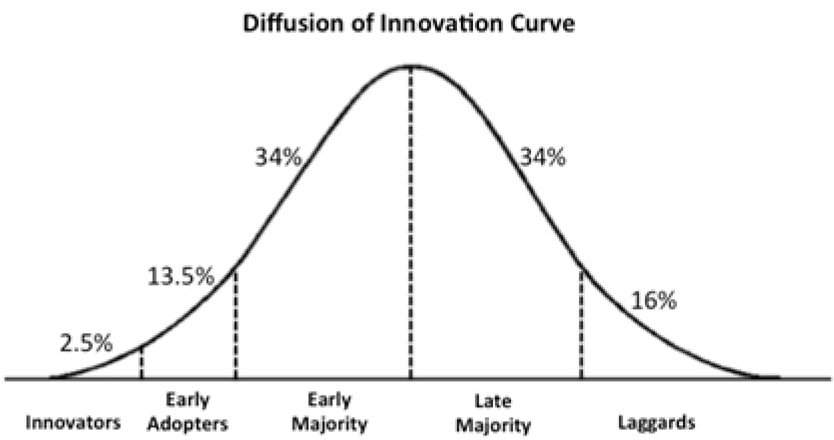
Contemporary vinyl consumers therefore do not immediately purchase the vinyl record with music they have not yet heard before. Instead, they first listen to the music via streaming services, since it is cheaper on the short-term, to gain experience with the music itself. This act of using streaming services as a way to circumvent the experience attributes of music on a vinyl record, shows that new media has played a vital role in boosting vinyl sales. Without meaning to, the newest technological development within the market for recorded music carriers, is partly responsible for the revival of analogue vinyl records in today's digital times.

This also weighs in the argument of the potential difference in sound quality for vinyl records and digital files on streaming services. As consumers are using their streaming subscription, whether free or paid, to get more acquainted with new music before purchasing it on vinyl, they indirectly put forward their opinion that vinyl records have more value for the asked price (Arditi, 2018; Giles, et al., 2006; Hracs & Jansson, 2017; Nokelainen & Dedehayir, 2015; Palm, 2019). The previously discussed features of the vinyl record, such as better sound quality, tangibility, aesthetic appeal and nostalgic feeling, could all contribute to the greater product value opposed to the value streaming services offer.

Fads, fashions and re-adopters

The current understanding of the vinyl revival in academic literature has been an extended result of analysing the larger social, historical and intellectual context within which vinyl has emerged as the preferred recorded music carrier (Sarpong, et al., 2015). The sudden renewed interest in the analogue carrier was quite unexpected by both academics and the industry itself. The future of this revival is therefore still quite unpredictable.

In the history of technological developments in the music industry, some consumers have started to adopt innovations earlier than others. This too counts for both vinyl records and streaming services when both were first developed in, respectively, the 1940s and the early 2000s. The life cycle of both recorded music carriers has followed Rogers' (1962) adoption curve. Whereas the life cycle of streaming services is still moving along the curve and is now in the late majority fase, vinyl records have already moved along the entire curve (Datta, et al., 2018). In fact, the vinyl revival shows that vinyl consumers are, in some way, moving along the adopter curve again. In the case of vinyl records, a small group of consumers has developed such a loyalty to the product, that they have stayed with it during all technological innovations that were developed for music carriers thereafter. These consumers could be seen as the innovators of the vinyl revival that have never stopped consuming vinyl (Wells & Nieuwenhuis, 2018). Others that have abandoned the market of vinyl records and adopted newer technologies to play music from, are now 're-adopting' vinyl and could be the early adopters of the vinyl revival. Re-adopting an older technology, is often caused by nostalgia (Wells & Nieuwenhuis, 2018).



Source: Rogers, 1962.

Following Rogers' Diffusion of Innovation Curve and the growing vinyl revival, more consumers have started to adopt the analogue format (1962). Like mentioned before, the music industry has been quite uncertain and unpredictable in terms of the popularity of recorded music carriers nowadays. The vinyl revival could be a fad or fashion making its way into the recorded music carrier market. The uncertainty, however, also makes it possible for the future of the vinyl record to be brighter and more viable than being just a temporary fad that will go away once another fad is developed.

The innovators and early adopters have likely emulated the decision of others to participate in the vinyl revival as well. Instead of independently collecting information, the early majority depends on the behaviour of others when deciding. Making a decision based on others, is in the music industry, and many other cultural industries, often the most rational decision since there is a lack of complete information on the product or service (Handke, 2010; Handke, et al., 2016; Nelson, 1970). The 'informational cascade' that the music industry has depended on for years, has thus become visible in today's vinyl revival (Bikhchandani, et al., 1992; Handke, et al., 2016). Until today, the informational cascades are holding up the vinyl revival, however, once some consumers are interpreting purchasing the vinyl record in the contemporary digital era as a mistake, the cascade breaks and the vinyl will stop reviving.

Through streaming services, a lot of information about the content of vinyl records is available online. The decision to purchase the vinyl record of a specific album or artist, can thus be quite rational based on previously collected information and personal taste. Today's vinyl revival was thus not completely depending on the innovators and early adopters to spread information to get the snowball rolling, as the informational cascade theory suggests. Instead, the early majority has decided to participate in purchasing vinyl records with nearly full information available on the different music carriers and their content. Having all this information available, streaming services should then have been the most rational decision based on its convenient features, however, music consumers followed others and decided to purchase the content on vinyl instead. Herd behaviour has hereby found its way into the decision-making process of different music carriers in the contemporary music industry (Banerjee, 1992; Handke, et al., 2016). As increasingly more music consumers are showing herd behaviour and are purchasing vinyl records, the music industry itself is responding by commercialising the analogue carrier (Bates, 2019; Palm, 2019).

The introduction of the cassette and later the CD has driven the vinyl record to become the carrier of sophisticated audiophiles looking for nostalgia, authenticity and alternative coolness, the music snobs (Bartmanski & Woodward, 2015; Handke, et al., 2016). Record labels were more likely to sell cassettes and CDs at the time, so the production and marketing for vinyl record was put on a lower pit. In the 1990s, however, DJs became the gatekeepers between the artistic vinyl enthusiasts and their commercial audience by using vinyl records in their sets (Bartmanski & Woodward, 2015). The turntable, including vinyl records, became an instrument for DJs through which the carrier found its way back into the collective memory of the mainstream music audience. Nowadays, a harddrive or USB-stick is enough for a well-known DJ to play his or her set. The analogue vinyl records have been digitally replaced here as well. Nevertheless, the start of the vinyl revival has been awakened by DJs playing for a mainstream audience.

The first step into commercialising the vinyl record again, was made by DJs (Bartmanski & Woodward, 2015). Herd behaviour caused the audience to mimic professional DJs and purchase vinyl records. Until 2006, this was not part of the noticeable vinyl revival, but this herd behaviour planted the seed. Once the mainstream audience began to follow others in purchasing vinyl, record labels and the whole music industry jumped in on the commercialisation of the carrier too. Nowadays, not only independent record stores and small fairs are selling vinyl, online shops and large retail chains have also started selling vinyl records based on the shifting demands of the music consumer.

Once record labels saw the shift in demand of vinyl records, they started distributing reissues of popular albums on vinyl again, these are the remastered versions of older records (Palm, 2019). They also picked up on an independently organised initiative called Record Store Day (RSD) (Bates, 2019; Palm, 2019). Whereas in 2008, the first year, the event was quite small and only celebrated in the US, RSD is now a large annual international event to celebrate the vinyl record that is focused on buying records in a physical, independent, record store instead of elsewhere. Major record labels are using this day as an occasion to ‘peddle erstwhile hits’ and sell repackaged and remastered records as RSD exclusives (Palm, 2019: 644). By doing this, the bubble around the vinyl record has become fully commercialised for the profit of major record labels.

The analogue and independent features that belong to the vinyl record have become questionable through the commercialisation of the carrier. Next to the growing influence of streaming services in the music industry, the vinyl revival has continued to be present due to its unique features, commercialisation and the use of streaming to overcome the experience attributes of vinyl. Nevertheless, the future of the vinyl record in today’s digital era is still uncertain. Similarly, the present place of the vinyl record in the market has not been made quite clear yet. Taking the previously conducted research on the subject into account, this research strives to find the present and future place of the vinyl record in the contemporary music industry.

Chapter 3 - Method

To answer the research question, and the accompanying subquestions, a quantitative research strategy with a cross-sectional design were chosen (Bryman, 2016). A quantitative strategy ensures more data collection from a larger sample size in a shorter amount of time. A qualitative research could have gone more in-depth of the subject, however, for this research it important to get as much data from as much individual music listeners as possible.

As mentioned before, the vinyl revival itself has been studied quite a lot in the academic field. Especially in the larger social, historical and intellectual context, research has found and studied the resurgence of popularity in vinyl records (Sarpong, et al., 2015). Nevertheless, its impact on the economic market of music carriers, has not been studied, yet. A deductive approach has been taken to formulate hypotheses based on the known theory on the vinyl revival:

H1: Vinyl records and streaming services co-exist in the same economic market and act as both complements and imperfect substitutes.

H2: Older, higher educated music listeners have a higher average monthly expenditure on recorded music as a whole.

H3: The music carriers CD and computer harddrive are being listened to significantly less than vinyl records and streaming services.

H4: Contemporary music listeners have made use of both vinyl records and digital streaming services regularly in the last year (2019).

Research design

To test these hypotheses, data has been gathered from music listeners that filled in an online self-administered questionnaire (Bryman, 2016, p. 52). The data has been collected at a more or less single point in time. The questions and its data have been gathered to be quantifiable so that the variation of a large number of cases could be studied.

Doing research with a questionnaire in the contemporary digital era, allows it to be spread to a large number of people in a short amount of time. Nevertheless, this research strategy also brings some limitations with it. The ambiguity about causality in the cross-sectional research design makes it difficult to examine the relationship between variables as a causal relationship (Bryman, 2016). This could be overcome by letting the respondents answer the same questionnaire over a longer period of time, however, for this research that was not achievable. The internal validity is quite weak as it is difficult to establish a causal direction from the resulting data (Bryman, 2016, p. 54). The results, that will be discussed in the next chapter, will therefore produce associations from which causal inferences can be made.

The external validity of this cross-sectional design is quite strong when the sample is completely randomly selected. Sampling, as will be discussed later-on, has been done with a convenience sample. The sample is representative of a greater context and therefore the results of this study can be generalized beyond its research context but is still limited to the Dutch population of vinyl listeners. Even though causal inferences cannot be made completely ambiguous, the findings can be generalized on a larger population.

Furthermore, this research has measured concepts similarly as previous research so to keep the measurement validity high. It is here of importance to also note the limitations in doing research through an online questionnaire, since behaviour is not directly observed. To study the social world, as this research is doing, it is often deemed inappropriate to use a natural science model (Bryman, 2016, p. 169). However, as mentioned earlier, this research also benefits from its cross-sectional research design since it is a quick way of getting a large number of data in a short amount of time.

The operationalisation of the concepts has been done in the questionnaire itself. It measures, amongst other, the usage preference and habits of music listeners. Oftentimes the questions have been asked in relation to the purchasing behaviour, habits and preferences of respondents in the last year. Despite, this measure strengthens the measurement validity of the research, it makes it harder to repeat the results of this study. The results of this study are very reliable today, however, as the market that is being researched has shown to be quite unpredictable in the past, the results could also be very different doing the same research next year. For a cross-sectional research, the procedures for sampling, data collection, concept design and analysis of data are specified. Therefore, replicability is likely to be present, however, it is uncertain whether the results are as reliable that they could be replicated as well.

Sampling

To collect the sample to use for this research, a convenience sampling method has been applied (Bryman, 2016, p. 176). Using a convenience sample is limiting to the generalization of the results. A full generalization of the results will therefore not be possible. Nevertheless, the results can be generalized to a smaller population. The responses were gathered within three weeks, after which the questionnaire was closed for further responses.

To get a large number of music listeners and especially vinyl record consumers to respond to the questionnaire, multiple physical record stores were approached with the question whether they were willing to share the questionnaire on their social media. Most of those record stores responded enthusiastically and said to publish the questionnaire on their social media. Nevertheless, after the questionnaire was created using the Qualtrics software, not all these record stores actually published it on their social media accounts. Around 75 responses were gathered from only two record stores sharing the online link of the questionnaire on their Facebook pages. These record stores did indirectly bring in the rest of the responses as well. A member of a private Facebook group around vinyl records approached me online after seeing the questionnaire on a record store's Facebook to ask whether he could share the questionnaire in that private group. Through this and one other group about vinyl records, more than enough responses were gathered, namely 332 of which 107 were responses in progress. These 107 non-responses were not used in the analysis of the results to overcome the non-response bias of including respondents that had not seen and filled in the complete questionnaire. The other 225 respondents that completed the entire questionnaire were included in the sample that has been used to generate the results from (see table 3.1).

Since the sampling took place with the help of record stores in Rotterdam and Schiedam and two Dutch-speaking Facebook groups, most respondents are Dutch as well. This shows in the data too since the questionnaire was translated in both Dutch and English. Of the 225 responses, 217 were completed in Dutch and only 8 in English. The age difference between respondents was between 16 and 70 years old with an average age of 46. Most respondents were fairly high educated with 36,9% having finished a university of applied sciences degree and 20,9% having finished a university degree. The employment status of this sample varies too. Most respondents are employed either full-time (138) or part-time (31). Furthermore, the sample also houses multiple retired music listeners (20) and two respondents are retired but do have a part-time job. There is also a noteworthy number of students present in the sample (18), of which 6 have a part-time job next to their study, one is looking for a job and another one is not looking for a job. Next to these unemployed students, there are 16 more unemployed respondents of which 6 are looking for a job and 10 are not. The sample varies a lot in terms of employment status, age, and educational level. The influence of these demographics on their habits and preferences of music carriers has been researched and will be discussed in the next chapter.

Table 3.1 - Information and demographics of the sample (N=225)

	Respondents	
Respondents in sample	225	
Total respondents	332	
Non-responses	107	
Language filled in (N=225)		
Dutch	217	96.4%
English	8	3.6%
Age (N=225)		
Average	46	
Lowest	16	
Highest	70	
Highest education completed (N=225)		
Primary education	2	0.9%
Secondary education	33	14.7%
Vocational education	59	26.2%
University of applied sciences	83	36.9%
University degree	47	20.9%
Other	1	0.4%
Employment status (N=225)		
Full-time	138	61.3%
Part-time	39	17.3%
Unemployed, looking	7	3.1%
Unemployed, not looking	11	4.9%
Retired	22	9.8%
Student	18	8.0%
Part-time and retired	2	0.9%
Unemployed, looking and student	1	0.4%
Unemployed, not looking and student	1	0.4%
Student and part-time	6	2.7%

Data collection

The distributed questionnaire consisted of a total of 20 questions. Those questions consisted of nine multiple choice questions, including four dichotomous questions, six four-point and five-point Likert scale questions and five (semi) open-ended questions (see appendix A for the full questionnaire).

The first part of the questionnaire established a demographic profile of the respondents by asking about their age, highest level of education, employment status and entertainment expenditure. The latter was asked to get insight in the presence of the purchasing power of each individual respondent on entertainment, not just music. Deducing from theory, the importance of DJs and vinyl records should not be underestimated. Therefore, each respondent was asked whether he or she works as a DJ, paid or unpaid and if yes, which recorded music carrier they have made use of during the last year. As DJs started popularizing vinyl records in the 1990s again, it is important to know whether they still make use of this carrier or that these gatekeepers have made the switch to the digital carriers (Bartmanski & Woodward, 2015).

To get a total insight in the use of different music carriers, each respondent was next asked to indicate how often they have listened to vinyl records, streaming services, CDs, radio, and computer harddrive in the form of downloads and other digital music not mentioned before, in the last year. This question will rule out the less popular carriers of today and is able to make indications on the usage of both streaming services and vinyl records by the same music listeners. The full picture of each music listener is not complete without asking about his or her preferences when it comes to the music itself and the carriers.

The purchasing power of entertainment as a whole has already been asked, but it is also important to know the purchasing power of each individual respondent for recorded music as a whole. Since the study focuses on vinyl records, the specific purchasing of a vinyl record has asked in a dichotomous question. Furthermore, vinyl records have taken over mainstream society and are available nearly everywhere now. Whether physical record stores still have the most customers, is questionable, but will be discussed further. The number of bought original, remastered and new music albums released on vinyl gives an insight in the rising popularity of music on vinyl after the vinyl revival took place. Music labels have jumped in on the rising consumer demand, but have the respondents also jumped on board of those music labels' commercialization of the music carrier?

For this research, the difference in usage between vinyl records and streaming services is of great importance. The last questions therefore concern the difference in use and opinions about both vinyl records and streaming services. To answer the research question, it is especially important to get an indication whether music listeners listen to the same music on both carriers, or not. This is directly operationalised by asking which music carrier they use when listening to their favourite artist, favourite genre, new music and popular music. Also, their opinion in differences in performance of the carriers has been asked for in terms of better value for money, better sound quality, and authenticity. All these operationalised variables have been collecting data from 225 respondents and will be analysed to get an answer to the main research question.

In the distributed online questionnaire, questions were divided in different categories. The names of these categories were not visible to the respondents but were applied to give more structure to the questionnaire. The first couple of questions asked for some demographic information on the respondent. Here included, were questions about age, highest level of education, employment status and entertainment expenditure on average per month.

Data analysis

To analyse the data retrieved from the online questionnaire on Qualtrics, the data was exported to SPSS. Within SPSS, descriptive statistics, multivariate analysis and multiple regression analysis were done to gather results from the data. In the multiple regression analysis, the average monthly expenditure on recorded music was the dependent variable and the independent variables were age, education, employment, working as a DJ, different music carriers, general habits and preferences, carrier habits and preferences, purchasing location of vinyl, and use of streaming services. By conducting this multiple regression analysis, data has shown the predictability of this sample's average monthly expenditure on recorded music. It also analyses multiple factors that could contribute to the increase in consumer demand for vinyl records and other recorded music carriers.

When analysing music carriers, not only vinyl records and streaming services were chosen as contemporary popular recorded music carriers. The use of CDs, radio including online radio, and computer harddrive were also measured. With computer harddrive, USBs containing music files, legal and illegal digital downloads and use of iTunes downloads were meant and defined for the respondents. These five music carriers were chosen since they are still the most prominent carriers when it comes to presence in the market. Especially for the Dutch market, radio was included since this carrier is still one of the most used carriers by music listeners (IFPI, 2019, p. 19). To analyse the influence of age on the usage of music carriers, a multivariate analysis of variance of age towards the usage of these five different recorded music carriers was conducted.

The general music habits and preferences of respondents were operationalised through a five-point Likert scale question. Statements in this question could be answered on an agreement scale going from 'strongly agree' to 'strongly disagree'. Variables like discovering new music, staying up-to-date, listening to the same or various artists and genres, or to mainstream music, music enthusiasm and the social factors of music were measured in this question. As some of these variables were asked about quite literally, for instance discovering new music, staying up-to-date, and listening to various artists and genres, others were rewritten to be operationalised better. By asking 'I like to think music is an important part of my life' the music enthusiasts were separated from others. The social factor of music was measured through the scale of agreement for 'I like to talk about music with others' and 'I like to impress others with my sophisticated music taste', the latter also served as operationalisation to separate the music snobs from the others.

The Likert scale question described above relates to general listening habits and preferences, specific features of the carriers were not considered here yet. This was done via another Likert scale question that operationalised specific features of music carriers like the tangibility, aesthetic appeal, on-demand availability, recommendation systems and sound quality. The variable 'recommendation systems' was operationalised by asking about the importance of information on what others are listening to and the importance of personalized recommendations based on music previously listened to. The on-demand feature, that is mostly present for streaming services, was measured through the importance of the ability to listen to music anywhere and whenever. Furthermore, the respondents were asked about the sound quality to create a difference in quality perception in general. This was further operationalised by asking directly whether respondents believed vinyl records or streaming services had a better sound quality. That question also directly asked about the better carrier with regards to value for price and authenticity. The differences between vinyl records and streaming services was further researched through the different usages of both carriers. This question was displayed only to respondents who had previously indicated to listen to the same music on both vinyl and streaming so a true indication of the different usages of consumers of both carriers could be made. Here, the five-point scale went from 'I always use vinyl records' to 'I always use streaming services' and asked statements about favourite artist, discovering new music, background listening, listening to different genres and artists, or to music that is not popular among a mainstream audience. A true difference between the usages of both carriers could thereby be created and the difference of two products with an increasing consumer demand could be measured to answer the research question and its subquestions.

Chapter 4 - Results

In this chapter the results of the research will be discussed. As the research was conducted with the help of an online self-administered questionnaire, as discussed previously, respondents' profiles therefore could only be made from their answers. The first analyses that this chapter will therefore provide, is an analysis of the music listeners that filled in the questionnaire. Along, an analysis of their consumer demand for recorded music carriers in general and specifically vinyl records and streaming services are done.

Furthermore, this chapter consists of an analysis of the general music listening habits and preferences of the respondents and their preferences for specific features for recorded music carriers. The results will be presented in graphs and tables and discussed further in the accompanying text. Lastly, the usage of both vinyl records and streaming services will be analysed. As discussed in the theory section, the vinyl revival has become increasingly more commercialised.

Table 4.1-Table for descriptive statistics of all measured continuous variables

	N	Min.	Max.	Mean	Median	Mode	Std. Deviation	Variance
Age	225	16.00	70.00	46.3689	49.00	22.00*	13.66539	186.743
Vinyl records bought	204	1.00	3000.00	112.9412	40.00	100.00	254.30903	64673.080
Original records	204	0.00	2800.00	76.9755	20.00	10.00	236.75662	56053.699
Remastered records	204	0.00	300.00	13.0049	5.00	0.00	29.36848	862.507
New records	204	0.00	230.00	17.7353	7.50	0.00	29.78955	887.417

Notes: * Multiple modes exist. The smallest value is shown.

Table 4.2 - Table for descriptive statistics of all measured categorical and nominal variables

	N	Min.	Max.	Mean	Median	Mode	Std. Deviation	Variance
Education	225	1	6	3.64	4.00	4	1.014	1.027
Employment status:								
Full-time	225	0	1	0.61	1.00	1	0.488	0.238
Part-time	225	0	1	0.17	0.00	0	0.379	0.144
Unemployed, looking	225	0	1	0.03	0.00	0	0.174	0.030
Unemployed, not looking	225	0	1	0.05	0.00	0	0.216	0.047
Retired	225	0	1	0.10	0.00	0	0.298	0.089
Student	225	0	1	0.08	0.00	0	0.272	0.074
Entertainment expenditure	225	1	9	6.46	7.00	9	2.518	6.339
Working as a DJ	225	1	3	2.88	3.00	3	0.442	0.195
Computer harddrive	17	1	3	2.06	2.00	3	0.899	0.809
Vinyl records	17	1	3	1.53	1.00	1	0.717	0.515
Streaming services	17	2	3	2.94	3.00	3	0.243	0.059
CDs	17	1	3	2.29	3.00	3	0.849	0.721

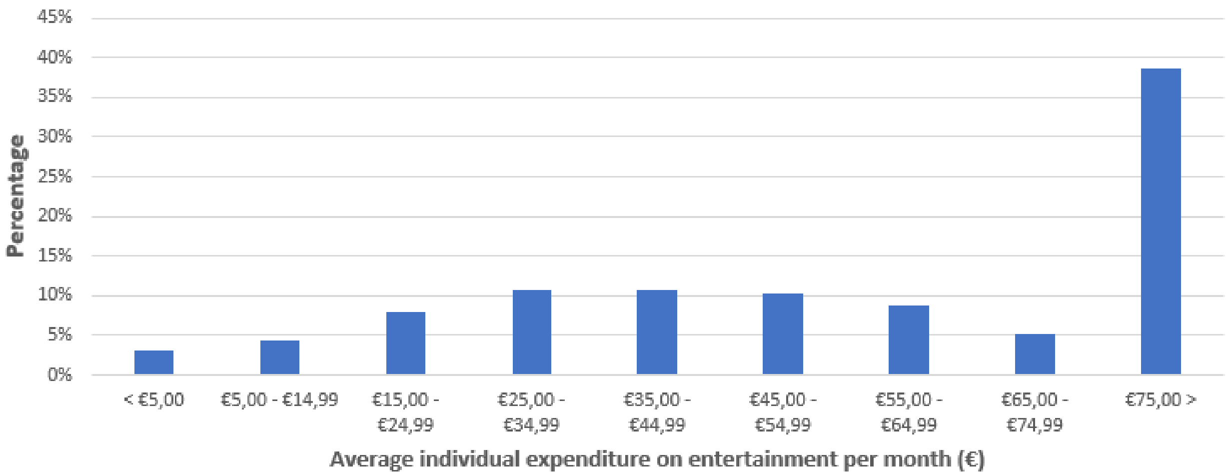
<u>Use of music carriers:</u>								
Vinyl records	225	1	5	1.76	1.00	1	1.023	1.047
CDs	225	1	5	2.94	3.00	4	1.299	1.689
Streaming services	225	1	5	2.28	1.00	1	1.570	2.463
Radio	225	1	5	2.11	2.00	1	1.349	1.819
Computer harddrive	225	1	5	3.24	3.00	5	1.524	2.324
<u>General habits and preferences:</u>								
Music is part of life	225	1	4	1.15	1.00	1	0.448	0.200
Discover new music	225	1	5	1.94	2.00	1	0.994	0.987
Up-to-date about music	225	1	5	2.06	2.00	1	1.126	1.269
Different artists	225	1	4	1.36	1.00	1	0.612	0.374
Different genres	225	1	5	1.56	1.00	1	0.823	0.677
Same songs and albums	225	1	5	2.61	3.00	2	1.125	1.265
Talk with others	225	1	5	1.52	1.00	1	0.813	0.661
Sophisticated taste	225	1	5	3.09	3.00	3	1.255	1.576
Unpopular music	225	1	5	2.00	2.00	1	1.056	1.116
<u>Carrier habits and preferences:</u>								
Tangibility	225	1	4	1.54	1.00	1	0.802	0.643
Aesthetically pleasing	225	1	4	2.66	3.00	2	0.997	0.994
Everywhere and anywhere	225	1	4	1.97	2.00	1	1.024	1.048
Whenever	225	1	4	1.36	1.00	1	0.627	0.393
Information on others	225	1	4	2.71	3.00	2	0.892	0.796
Personal	225	1	4	2.65	3.00	2	0.976	0.952
recommendations	225	1	3	1.34	1.00	1	0.529	0.280
Good sound quality								
Expenditure recorded music	225	1	10	7.58	8.00	10	2.408	5.798
Ever bought a vinyl record	225	1	3	1.11	1.00	1	0.350	0.123
<u>Purchasing location:</u>								
Physical (record)store	204	0	1	0.84	1.00	1	0.365	0.133
Online	204	0	1	0.72	1.00	1	0.450	0.202
Market or fair	204	0	1	0.63	1.00	1	0.485	0.235
Concert	204	0	1	0.39	0.00	0	0.489	0.240
Other	204	0	1	0.08	0.00	0	0.277	0.077
Use of streaming services	225	1	2	1.40	1.00	1	0.490	0.240
Same music vinyl and streaming	129	1	3	1.34	1.00	1	0.552	0.305
<u>Uses of vinyl and streaming:</u>								
Listen to favourite artist	90	1	5	2.61	3.00	3	0.803	0.645
Discover new music	90	2	5	4.02	4.00	4	0.703	0.494
Music in background	90	1	5	3.11	3.00	3	0.941	0.886
Different genres	90	1	5	3.09	3.00	3	0.713	0.509
Different artists	90	1	5	3.17	3.00	3	0.811	0.657
Unpopular music	90	1	5	2.76	3.00	3	0.865	0.749
<u>Opinions vinyl and streaming:</u>								
Better value for money	225	1	4	1.48	1.00	1	0.892	0.796
Better sound quality	225	1	4	1.72	1.00	1	0.977	0.954
Authenticity	225	1	4	1.21	1.00	1	0.713	0.508
Same favourite genres vinyl and streaming	225	1	5	2.32	2.00	2	1.179	1.390

Consumer demand

The market for recorded music carriers has been uncertain ever since the music industry began to create a market for music carriers (Peterson & Anand, 2000). In the contemporary digital era, it was therefore a surprise that demand for the analogue vinyl records started rising again in 2006 (Bartmanski & Woodward, 2015; 2018; Nokelainen & Dedehayir, 2014; Palm, 2019). The increase in demand was recorded on both a national and global scale (IFPI, 2020; NVPI, 2020; RIAA, 2020). Nevertheless, the Dutch NVPI shows a slight decrease in revenue for vinyl records since 2018.

As this research has been done on a sample taken from the Dutch population of music listeners, their consumer demand for vinyl records has been studied. Firstly, the purchasing power on entertainment is remarkable. In the survey entertainment is defined as all media content for entertainment and amusement and includes all expenses for (online) subscriptions, memberships, books, television, radio, sound equipment and more, and specifically excludes live performances. Of the respondents, 38.7% indicates that last year they have spent over €75,00 on average per month on entertainment (See graph 4.1). The other 61.3% are skewed between spending less than €5,00 per month and between €65,00 and €74,99 on entertainment per month.

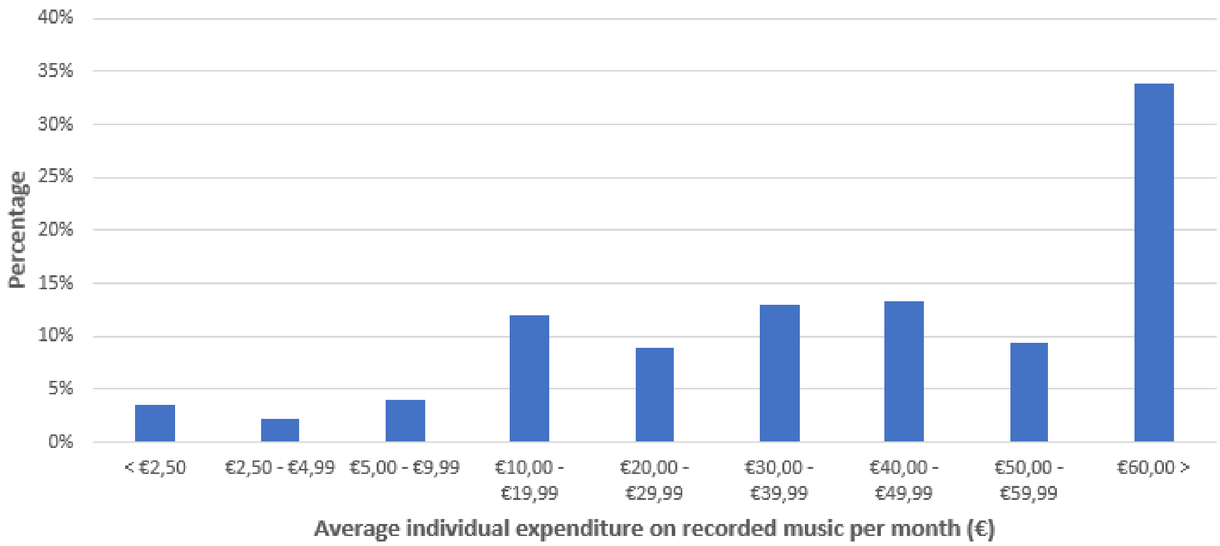
Graph 4.1 - Percentage of average individual expenditure on entertainment per month



Average monthly expenditure on recorded music specifically shows a more or less equally divided result (see graph 4.2). Of the respondents to the questionnaire that was distributed for this research, 33.8% have indicated that, on average, they have spent over €60,00 on recorded music per month. Recorded music here includes all digital and physical formats for music. Both vinyl records and streaming services are thus incorporated within these results.

Comparing both graphs 4.1 and 4.2, a conclusion can be made that indicates the possible presence of substitutes. In these scales, substitutes in the form of other types of entertainment are not present in large numbers. A larger scale that expands the more than €60,00 and €70,00 value could bring a different insight into the possible presence of substitutes for recorded music.

Graph 4.2 - Percentage of average individual expenditure on recorded music per month (€)



Next to possible substitutable entertainment goods and services, other variables could also be of influence on their average monthly expenditure on recorded music. In a multiple regression analysis, the dependent variable of expenditure on recorded music on average per month has been tested to be influenced by age, education, employment, working as a DJ, use of music carriers, general habits and preferences, carrier habits and preferences, purchasing location of vinyl records, and use of streaming services. A significant regression equation was found ($F(35, 168) = 5.929$, $p < .000$), with an R^2 of .553.

Results from the regression analysis show that using vinyl records, listening to the same songs and albums, and the tangibility of music carriers have a significant influence on the average monthly expenditure on recorded music ($p < .05$) (see table 4.3). This indicates that the more respondents have used vinyl records to listen to music in the last year, the more they enjoy listening to the same songs and albums over and over again and the greater the importance of tangibility for music carriers, the larger the average monthly expenditure of recorded music carriers in general will be. Noteworthy here, is the insignificance of demographics like age, education and employment status. All variables here have a p-value that is higher than the set alpha ($p < .05$). H2 can hereby be rejected: the average monthly expenditure on recorded music is not higher for older, higher educated music listeners.

Table 4.3 - Regression model for predicting the average monthly expenditure on recorded music (N=204)

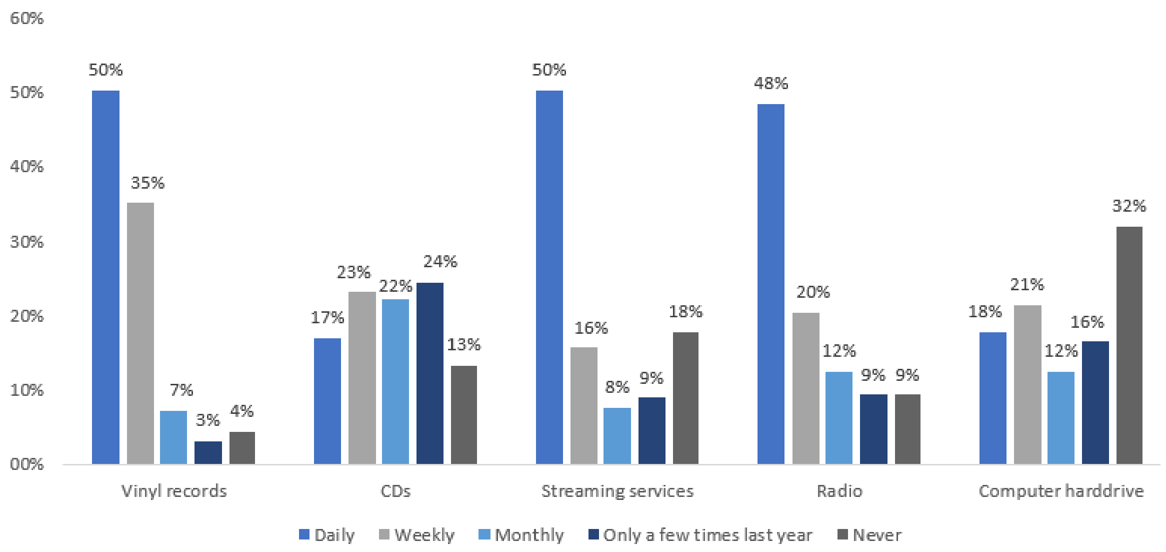
	B	b*	p
Constant	10,581		.000*
Age	-.005	-.031	.706
Education	-.047	-.022	.728
Employment:			
Full-time	1.307	.291	.137
Part-time	.654	.112	.427
Unemployed, looking	.597	.050	.558
Unemployed, not looking	.077	.008	.937
Retired	.532	.069	.568
Student	-1.403	-.163	.053
Working as a DJ	-.031	-.006	.912
Use of music carriers:			
Vinyl records	-.693	-.236	.001*
CDs	-.210	-.123	.056
Streaming services	.225	.163	.054
Radio	.073	.045	.432
Computer harddrive	-.052	-.036	.539
General habits and preferences:			
Music is part of life	.033	.006	.928
Discover new music	-.302	-.134	.081
Up-to-date about music	.130	.066	.357
Different artists	-.323	-.089	.222
Different genres	.239	.091	.160
Same songs and albums	.243	.126	.034*
Talk with others	-.221	-.078	.217
Sophisticated taste	-.218	-.126	.055
Unpopular music	.058	.028	.634
Carrier habits and preferences:			
Tangibility	-.735	-.224	.001*
Aesthetically pleasing	.264	.121	.063
Everywhere and anywhere	.036	.017	.808
Whenever	-.272	-.080	.201
Information on others	.099	.040	.551
Personal recommendations	-.102	-.045	.498
Good sound quality	-.347	-.083	.157
Purchasing location:			
Physical (record)store	-.466	-.078	.218
Online	.573	.118	.052
Market or fair	.280	.062	.301
Concert	.428	.096	.123
Use of streaming services	-.398	-.090	.277
df regression	35		
df residual	168		
R^2	.553		
F	5.929		

Notes: Predictors – (Constant), Age, Education, Full-time, Part-time, Unemployed, looking, Unemployed, not looking, Retired, Student, Working as DJ, Vinyl records, CDs, Streaming services, Radio, Computer harddrive, Music is part of life, Discover new music, Up-to-date about music, Different artists, Different genres, Same songs and albums, Talk with others, Sophisticated taste, Unpopular music, Tangibility, Aesthetically pleasing, Everywhere and anywhere, Whenever, Information on others, Personal recommendations, Good sound quality, Physical (record)store, Online, Market or fair, Concert, Use of streaming services;
Dependent variable – Average monthly expenditure on recorded music.
Significance: * = p < .05.

Carrier preferences and habits

Music listeners is a broad concept. Anyone who has a phone, radio or walks outside listens to music, whether consciously or unconsciously. Therefore, delving deeper into the usage of different recorded music carriers, namely vinyl records, CDs, streaming services, radio (including online radio) and computer harddrive (including USB, iTunes and (il)legal downloads) is important for this research. Cassettes were not taken into account since previous academic literature and international and national databases have already indicated that the number of cassette users in the contemporary market is small enough to be said to have nearly disappeared from it (IFPI, 2019; Nokelainen & Dedehayir, 2015; NVPI, 2020; RIAA, 2020). From the retrieved data can be concluded that, in the last year, vinyl records, streaming services and radio were the most daily used recorded music carriers (see graph 4.3). Over 50% has listened to vinyl records and streaming services on a daily basis last year. Also, most respondents have listened to all these carriers at least once last year (see table 4.4). In fact, CDs are the third carrier that the respondents have listened to at least once and are hereby even more popular than streaming services. This is against the expectation that CDs have been replaced completely by the digital streaming services and are being further showed under by the vinyl revival. It would not be fair to completely compare CDs and streaming services from these numbers since streaming has 50.20% of its users to use it daily and CDs are mainly being used only a few times last year, but it is certain that CDs are still present in the market and are not gone, yet. To simply conclude that there is one carrier that truly dominates the market at the moment, is not possible nowadays (Handke, 2010). All five tested carriers are being used, more or less, at least a few times per year (see table 4.4).

Graph 4.3 - Percentage use of recorded music carriers in the last year (2019) (N=225)



On top of that, it is not surprising that the results show a large number of radio listeners since this research studies the Dutch music market. The IFPI Music Listening report of 2019 shows that globally music listeners spent 5.4 hours listening to the radio per week (IFPI, 2019, p. 19). This includes all broadcast radio and online radio stations. For The Netherlands, this average is nearly doubled since Dutch people listen to the radio 10.5 hours per week. Next to the increase in market power for both streaming services and vinyl records, in The Netherlands, radio must not be forgotten as a recorded music carrier that is used by many. Between all five tested music carriers, one is not being used significantly more than the others. Therefore, H3 will also be rejected. CDs and computer harddrives do still matter as a music carrier in the contemporary music market.

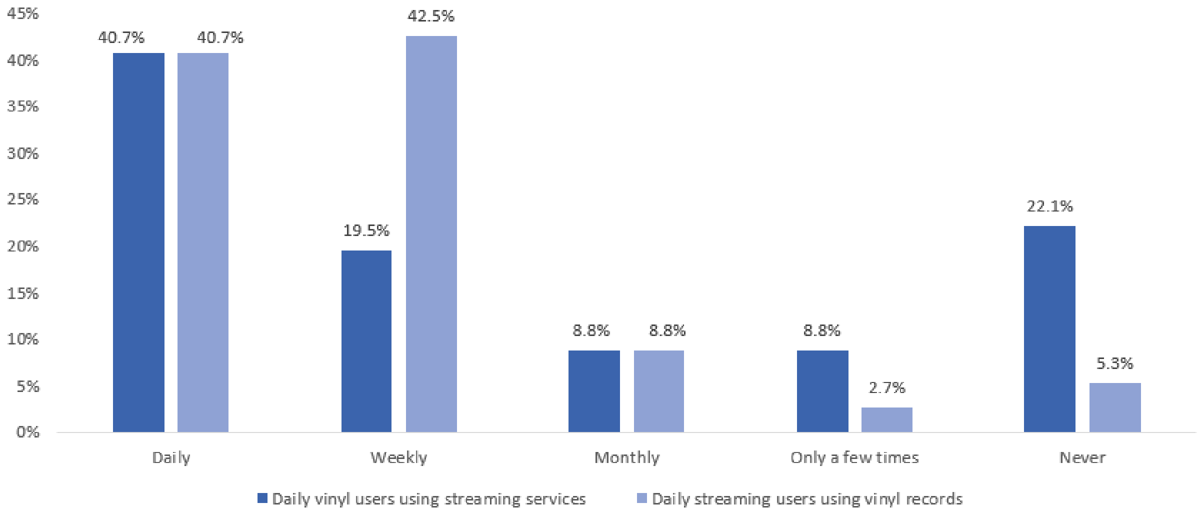
Table 4.4 - Use of recorded music carriers last year (2019) (N=225)

	Vinyl		CDs		Streaming		Radio		Computer harddrive	
Daily	113	50.2%	38	16.9%	113	50.2%	109	48.4%	40	17.8%
Weekly	79	35.1%	52	23.1%	35	15.6%	46	20.4%	48	21.3%
Monthly	16	7.1%	50	22.2%	17	7.6%	28	12.4%	28	12.4%
Only a few times	7	3.1%	55	24.4%	20	8.9%	21	9.3%	37	16.4%
Never	10	4.4%	30	13.3%	40	17.8%	21	9.3%	72	32.0%
Listened to at least once*	*215*	*95.6%*	*195*	*86.7%*	*185*	*82.2%*	*204*	*90.7%*	*153*	*68.0%*

Notes: * Counted responses here include all 'daily', 'weekly', 'monthly' and 'only a few times' data and excludes all 'never' data

As this research is meant to study the use of streaming services by vinyl users and vice versa, analyses have been done on the use of both carriers by only the daily users. Interestingly, of both the 113 daily users of vinyl records and of streaming services, 40.70% also seem to listen daily to the other carrier. As digital streaming services now have a global market of over 50% (IFPI), it is no surprise that many fanatic daily vinyl listeners also make use of streaming services on a daily basis. Therefore, H4 is accepted, the contemporary music listeners tested in this sample, have regularly made use of both vinyl records and digital streaming services in the last year (2019). It is noteworthy to mention that there are more daily vinyl listeners that never make use of streaming services, than there are daily streaming users that never listen to vinyl records (see graph 4.4). This indicates that most daily vinyl users have not adapted along with the digital developments in the market for recorded music carriers. Vice versa, most streaming users are well aware of the presence of analogue vinyl records. As is showed in graph 4.4, daily streaming users are keen on listening to vinyl records on a daily or weekly basis. It is likely that they are part of the early majority that are now following the innovators and early adopters into making use of the vinyl record, again (Rogers, 1962).

Graph 4.4 - Percentage of daily vinyl and streaming users, using the other carrier in the last year (2019) (N=113)



When it comes to the usage of different recorded music carriers, age might be of influence since older people have grown up with vinyl records and younger have grown up with CDs and streaming services. As nostalgia has played a large role in the resurgence of the popularity of vinyl records, the impact of age on the usage of different carriers has been tested as well. This has been done with a multivariate analysis of variance (see table 4.5).

Results show that there is a significant effect of age on the use of vinyl records, $F(51, 173) = 1.674$, $p < .05$. Indicating that older people are more likely to listen to music via vinyl records than younger people. This is in line with the expectations that nostalgia triggers people

Table 4.5 - Multivariate analysis of variance of age towards the usage of music carriers (N = 225)

		Sum of Squares	df	Mean Square	F	p
Vinyl	Between groups	77.490	51	1.1519	1.674	.008*
	Within groups	157.026	173	.908		
	Total	234.516	224			
CDs	Between groups	110.599	51	2.169	1.402	.057
	Within groups	267.650	173	1.547		
	Total	378.249	224			
Streaming	Between groups	155.324	51	3.046	1.329	.092
	Within groups	396.472	173	2.292		
	Total	551.796	224			
Radio	Between groups	99.059	51	1.942	1.090	.336
	Within groups	308.381	173	1.783		
	Total	407.440	224			
Harddrive	Between groups	99.711	51	1.955	.804	.818
	Within groups	420.804	173	2.432		
	Total	520.516	224			

Significance: * p < .05.

to make use of the carrier from their past. Therefore, the people that were young when vinyl records were first produced, are now falling back to the nostalgic feeling that the carrier of their youth brings with it. There was no significant effect of age on use of CDs ($F(51,173) = 1.402$, $p > .05$), streaming services ($F(51,173) = 1.329$, $p > .05$), radio ($F(51,173) = 1.090$, $p > .05$) and computer harddrive ($F(51,173) = .804$, $p > .05$). Indicating that for all ages tested, between 16 and 70, there was no significant indication that younger or older people are more likely to listen to music with that particular music carrier.

To measure the co-existence of the analogue vinyl record and the digital streaming services in one market, the different features of both carriers need to be considered. Preferences and habits of listening to music in general and related to specific carriers have been measured using Likert scale questions. Statistics retrieved from these questions show that music listeners have some clear habits and preferences when it comes to music in general and the specific features of music carriers (see Tables 4.6 and 4.7). Regarding listening to music in general, 88% of the respondents strongly agree that music is a part of their life and 0% strongly disagrees with this statement, indicating that the convenience sample indeed consists of music listeners and enthusiasts. Furthermore, respondents strongly agree that they like to listen to different artist (69.8%) and genres (60.4%). Diversity of music supply is thus of great importance to many music listeners. Nevertheless, the respondents are also fans of listening to the same songs, albums or artists repeatedly. Nearly 50% of the respondents either strongly or somewhat agrees with liking to listen to the same music repeatedly, thus indicating that the diversity of multiple different artists and genres is actually not that big. However, being up-to-date with new music and discovering new music that they have not yet been familiarised with, is a preferred habit by most respondents. This also goes against the statistic that indicates that there are only a few songs that the respondents listen to each time. It is therefore likely to assume that music listeners go along with their time when it comes to the music itself. They enjoy discovering new artists, genres, music that they like and then listen to it repeatedly. Instead of following the innovations made for the carriers, they follow the newest releases and adapt their list of favourites accordingly. For them, it is fortunate that nearly every newly produced album is not only being distributed online via streaming services, but also on the analogue vinyl records (Bartmanski & Woodward, 2015; Palm, 2019). That way, music listeners can keep up with the fast changing music industry and its music, whilst listening to music on their favourite carrier.

New music is not the only music that is preferred to be discovered by the respondents. 71.5% either strongly or somewhat agrees that they enjoy listening to music that is not popular amongst the general public, thereby indicating that they do not prefer to participate in the commercialisation of music in general.

In general, listening to music is a social activity that is more enjoyed when talking to others about it, according to the respondents. Over 60% strongly agree talking to others about music is something they prefer to do when it comes to music. These conversations are, however, not entered merely to impress others with their sophisticated music taste. Over 30% neither agrees nor disagrees that they like to impress others with their music taste. Sophisticated audiophiles or music snobs that listen to vinyl records, are perhaps present in other academic literature, but this sample does not give a large indication of their presence (Bartmanski & Woodward, 2015; Handke, et al., 2016).

Looking at the preferences and habits for specific features of music carriers, other noteworthy results come across (see table 4.7). The most obvious difference between vinyl records and streaming services is perhaps the tangibility. Whereas the vinyl record is a physical product that can be touched and felt, streaming services distribute music through compressed digital files in their catalogue (Bartmanski & Woodward, 2015; 2018; Giles, et al., 2006; McCourt, 2005; Nokelainen & Dedehayir, 2018; Palm, 2019; Styvén, 2008). Over 60% find it very important to have a tangible and collectible music carrier in their hands, thereby ruling out the digital compressed files that streaming services supply. Nevertheless, for the aesthetic appeal of the tangible product, the importance was more skewed. Here over 25% of respondents indicated that the appearance of the carrier was of no importance at all, 28.0% found it slightly important, 33.8% found it somewhat important and only 12.9% found it very important. The appearance that the vinyl record often brings with it, does not contribute to the collectability of the carrier here. The feature that is of great contribution, is its tangibility.

Another great difference that is noticeable for many carriers regarding streaming services, is the portability. Streaming services distribute online, digital compressed music files that can be accessed and played from nearly every digital device nowadays, whereas multiple older carriers need devices, that are not portable, in order to be played. For vinyl records, this device is the turntable that is not portable and thus does not allow the listener to be able to listen to music everywhere, anywhere and whenever. The on-demand feature of streaming services does allow all these possibilities (Hracs & Jansson, 2017). When asked about the possible on-demand features of music carriers, the respondents gave mixed responses. Over 70% find it very important to be able to enjoy different music whenever they want, but just 42.7% also find it very important to listen to music anywhere. The on-demand feature that streaming services

Table 4.6 – General music habits and preferences (N=225)

	Mean	Median	Mode	Std. Deviation	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
Music is an important part of life	1.15	1.00	1	0.448	88.0%	9.3%	2.2%	0.4%	0.0%
Like to discover new, unfamiliar music	1.94	2.00	1	0.994	40.9%	34.7%	15.6%	7.6%	1.3%
Like to be up-to-date about new releases	2.06	2.00	1	1.126	39.1%	33.3%	14.2%	9.3%	4.0%
Like to listen to different artists	1.36	1.00	1	0.612	69.8%	25.8%	3.1%	1.3%	0.0%
Like to listen to different genres	1.56	1.00	1	0.823	60.4%	28.0%	8.0%	2.7%	0.9%
Like to listen to the same music over and over again	2.61	3.00	2	1.125	16.9%	32.4%	29.8%	14.2%	6.7%
Like to talk about music with others	1.52	1.00	1	0.813	63.6%	24.9%	8.4%	2.2%	0.9%
Like to impress others with my sophisticated music taste	3.09	3.00	3	1.255	9.3%	26.2%	30.2%	14.2%	20.0%
Like to engage with music that is not popular among the general public	2.00	2.00	2	1.056	40.4%	31.1%	19.6%	5.8%	3.1%

Table 4.7- Habits and preferences of specific features of music carriers (N =225)

	Mean	Median	Mode	Std. Deviation	Very important (1)	Somewhat important (2)	Slightly important (3)	Not at all important (4)
Enjoy tangible, collectible music carriers	1.54	1.00	1	0.802	61.3%	28.0%	6.2%	4.4%
Enjoy to have tangible carriers on display as decoration	2.66	3.00	2	0.997	12.9%	33.8%	28.0%	25.3%
Enjoy listening to music everywhere and anywhere	1.97	2.00	1	1.024	42.7%	28.9%	17.3%	11.1%
Enjoy listening to different music whenever	1.36	1.00	1	0.627	70.7%	23.1%	5.3%	0.9%
Enjoy information on what others are listening to	2.71	3.00	2	0.892	7.6%	35.6%	35.1%	21.8%
Enjoy receiving personalized recommendations based on previously listened to music	2.65	3.00	2	0.976	11.1%	37.8%	26.2%	24.9%
Enjoy good sound quality	1.34	1.00	1	0.529	68.4%	28.9%	2.7%	0.0%

offer and most other carriers do not is thus more important when it comes to the timing, but less important when it comes to the place.

As discussed before and shown in table 4.6, most respondents like to talk about music with others. However, the importance of having information about what others are listening is quite low with most respondents finding it either somewhat (35.6%) or slightly (35.1%) important. Recommendations from others are often supplied by streaming services but are apparently not a large advantage for this carrier. Recommendation systems in general, are not preferred by the respondents. Just 11.1% find it very important to receive personal recommendations based on previous music they listened to and 24.9% find this not important at all. Since these numbers are skewed quite negatively with regards to the importance of personal recommendations, both computer-generated recommendations and recommendations from record store owners seem to be unimportant. The difference in both carriers at this point, does not make a difference for the listeners and users.

Lastly, this question asked respondents about the importance of good sound quality. Without further specifying sound quality, 68,4% indicated that this is a very important aspect for them. Following the literature, it can be assumed that vinyl records have better sound quality than digital streaming services since they supply original recordings and not the compressed versions (Bartmanski & Woodward, 2015; Nokelainen & Dedehayir, 2018; Styvén, 2008).

Usage of vinyl records and streaming services

Usages and preferences for both vinyl records and streaming services give insight in both their positions in the contemporary market for music carriers. Specifications of previously asked habits and preferences with regards to vinyl records and streaming services were therefore asked. Also, to avoid assuming and check the generalizability of the research. Firstly, all 225 respondents were asked to directly indicate whether the sound quality, value for money and authenticity are better for vinyl records, streaming services or both equally (see table 4.8). To avoid non-responses and answers for ‘not applicable’, respondents that do not make use of either carrier, were asked to answer according to what they thought would be most applicable. In line with previous results, academic research and expectations, more than half of the respondents (60.9%) then indicated that they believed vinyl records have the best sound quality. From the other 39.1%, 11.6% believed the sound quality of music is better for streaming services and 22.7% indicated an equal sound quality for both vinyl records and streaming services. As was discussed in the theory section, academic research found that most music listeners find the sound quality best for vinyl records, but some did not. The findings of this survey among mostly Dutch music listeners, gave the same results.

As nostalgia and authenticity play a large role in the renewed popularity and use of vinyl records, that variable was expected to give a significant result of the opinions of music listeners (Bartmanski & Woodward, 2015; Nokelainen & Dedehayir, 2018). This indeed was the case: a clear distinction in authenticity was made since 91.1% of the respondents indicated that music is most authentic when being played via vinyl record. Only 0.9% indicated a more authentic feeling for music via streaming services and 3.6% indicated an equal authenticity for both carriers.

Lastly, the value for the money paid for both vinyl records and streaming services is important for the decision-making process to buy music on one of either carriers (Arditi, 2018; Giles, et al., 2006; Hracs & Jansson, 2017; Nokelainen & Dedehayir, 2015; Palm, 2019). Purely relating to the music, on the short-term, streaming services would rationally deliver a much higher value, since they have a larger catalogue available for a lower price. However, the many tangible features of the vinyl record could add to its value. For most music listeners that responded to the questionnaire, the extra features of the vinyl records indeed contribute to its value opposite streaming services. 73.8% of the respondents indicated that vinyl records deliver a better value for money, whilst only 8.9% believe streaming services do so. Nevertheless, there is also a share of 12.4% of the respondents that believes there is no difference in received value for money for either records. With regards to sound quality, authenticity and value for money, most of the respondents thus believe vinyl records come out on top. Nevertheless, as discussed before, streaming services are being used daily by over 50% of the respondents. Therefore, it is interesting to look further into the differences in usage between the two carriers.

According to the results discussed above, consumers of vinyl records and streaming services believe there is a significant difference between both carriers where vinyl records comes out on top with the researched variables here. Nevertheless, most users consume both carriers regularly each year (see graph 4.3). The 90 users (N=90) that indicated to listen to the same music via streaming services and vinyl records, were asked follow-up questions about their usage with regards to both carriers (see table 4.9). From the results can be concluded that the large majority of these respondents most often use both carriers to reach the same outcome. There are, however, some noteworthy results to mention.

When it comes to discovering new music, 0.0% indicated that they always use vinyl. Instead, 57.8% indicated that they often use streaming services and 23.3% always uses streaming services for this. This is in line with the theory that suggests that it is most rational to experience new music via the, on the short-term, cheaper streaming services (Arditi, 2018; Giles, et al., 2006; Handke, 2010; Handke, et al., 2016; Nelson, 1970). Overcoming the experience attributes of music via the cheaper recorded music carrier, also strengthens the result that the value for price of vinyl records is apparently larger than for streaming services.

Even though most respondents indicate to listen to their favourite artist (47.8%) and music that is not popular amongst the general public (43.3%) on both carriers, these variables also show a larger number of respondents that use vinyl records than streaming services. Of the other 52.2% that uses both carriers to listen to their favourite artist, 43.3% uses vinyl records, either always or often, and 8.9% uses streaming services, either always or often. In other words, there is a slight indication that vinyl records are reserved for favourites. Similarly, 40.0% of respondents use vinyl records, either always or often, and 16.6% uses streaming services, either always or often, to listen to music that is not popular amongst the general public. Here too, there is a tendency towards a more frequently use of vinyl records for this specific usage.

When it comes to a variety of artists and genres, both carriers are used. A small majority is leaning towards using streaming services more often for these ends, however, the difference is quite small and clear conclusions can therefore not be made for these variables. Nevertheless, when being asking about their favourite genre to listen to via vinyl record and via streaming, clear conclusions can be drawn. Of all respondents, 154 have mentioned their favourite genre for both vinyl and streaming (N=154). Of these respondents, 40.91% indicated the same genres as their favourite when listening to both carriers and 59.09% indicated a different genre. There is thus a slight majority that indicates that both carriers are being used to listen to the same genre, which also leads to the conclusion that the carriers cannot be perfectly substituted for one another since the usage of both is different. As both carriers do serve the same purpose, playing recorded music, they act as imperfect substitutes in the same market (Power, 2010).

The above mentioned question that asked favourite genres per music carrier was an open-ended question with plenty of room for the respondents to write down their favourite genre(s). Some of the respondents took this opportunity to not only indicate their favourite genre, but also elaborated on their answers by mentioned specific uses of both genres. For instance, in response to the question that asked their favourite genre for streaming services, multiple respondents noted that they use streaming 'discover all genres of music and subsequently buy on CD or vinyl' and ' to listen to an unknown album to know how it sounds and if I like it I buy it on vinyl'. In this sample, vinyl consumers have thus indicated that they make use of streaming services to try new music which they then might buy on vinyl, thus indicating a complementary relation between streaming and vinyl.

Table 4.8 – Opinions about vinyl records and streaming services (N=225)

	Mean	Median	Mode	Std. Deviation	Vinyl records (1)	Streaming services (2)	Both vinyl and streaming (3)	Not applicable (4)
Better value for money	1.48	1.00	1	0.892	73.8%	8.9%	12.4%	4.9%
Better sound quality	1.72	1.00	1	0.977	60.9%	11.6%	22.7%	4.9%
Music feels more authentic	1.21	1.00	1	0.713	91.1%	0.9%	3.6%	4.4%

Table 4.9 – Usage of vinyl records and streaming services (N=90)

	Mean	Median	Mode	Std. Deviation	Always use vinyl records (1)	Often use vinyl records (2)	Use both vinyl and streaming (3)	Often use streaming services (4)	Always use streaming services (5)
Listen to favourite artist	2.61	3.00	3	0.803	6.7%	36.7%	47.8%	6.7%	2.2%
Discovering new music	4.02	4.00	4	0.703	0.0%	2.2%	16.7%	57.8%	23.3%
Listen to music in the background	3.11	3.00	3	0.941	4.4%	16.7%	51.1%	18.9%	8.9%
Listen to different genres	3.09	3.00	3	0.713	2.2%	10.0%	68.9%	14.4%	4.4%
Listen to different artists	3.17	3.00	3	0.811	3.3%	10.0%	58.9%	22.2%	5.6%
Listen to music that is not popular amongst the general public	2.76	3.00	3	0.865	4.4%	35.6%	43.3%	13.3%	3.3%

Although 'listening to music in the background' gives a similar result as listening to different artists and genres, some conclusions can be drawn from those results. There is a slightly higher percentage of respondents that have chosen to either use streaming services (27.8%), either often or always, than that have chosen to use vinyl records (21.1%) in this regard. This slight difference indicates the active listening activity that playing vinyl records brings with them. The technology and physicality of the vinyl record asks the consumer to engage with the music and especially the carrier (Nokelainen & Dedehayir, 2018). The, in comparison, passive consumption of streaming services, could be perceived more as an activity to be enjoyed in the background, which is in line with the results.

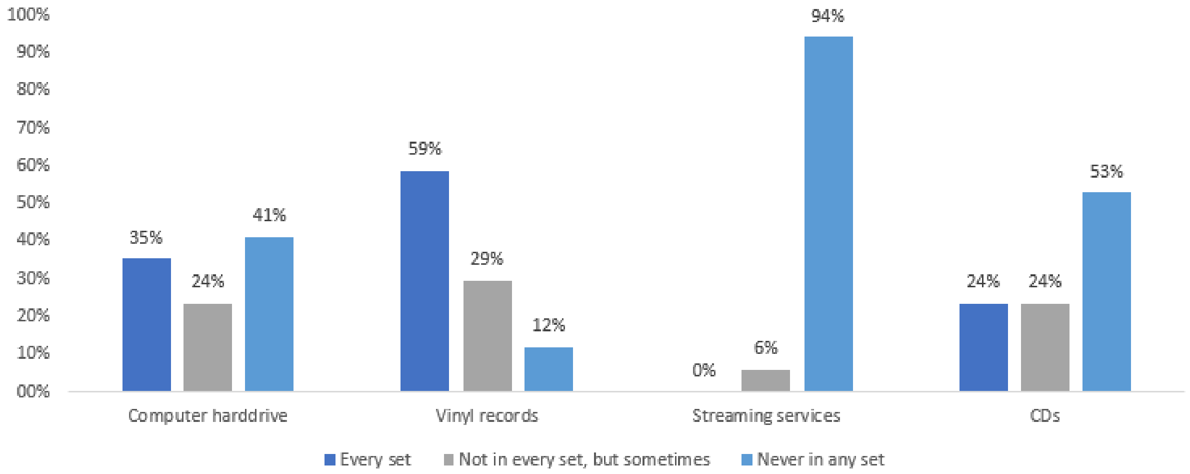
Whereas the respondents value vinyl records above streaming services in terms of sound quality, authenticity and value for price, both carriers most often have the same usage. That most respondents do not make use of both carriers in the same way, could indicate that there is no indication of consumers following a fad or fashion and consuming it the same way they are consuming similar products. To completely rule this out, the steps that lead to the re-commercialisation of vinyl records in the first place, have been researched further.

Contemporary commercialisation of the vinyl record

The first gatekeepers in the 1990s that started increasing consumer demand for vinyl records again, were DJs (Bartmanski & Woodward, 2015). In the sample, there are only 17 DJs present who receive either (some) payment or no payment at all. Within this small number of DJs, there is a clear preference visible to use vinyl records as the main music carrier when playing a set (see graph 4.5). Only 12% indicated that they never use vinyl records and 59% use them every set. What is also striking from these results, is the unpopularity of using streaming services during a set. Of the 17 DJs, 94% indicated that, over the last year, they have never made use of streaming service to get access to music and the other 6% only sometimes made use of this carrier. The popularity of the digital music carrier has thus not, yet, travelled to one of the most influential gatekeepers of music carriers within the music industry. Vinyl records are, just like in the 1990s, being used by DJs and could be partly responsible for the contemporary increase in vinyl records. However, the sample of DJs is too small here to draw clear conclusions from these numbers.

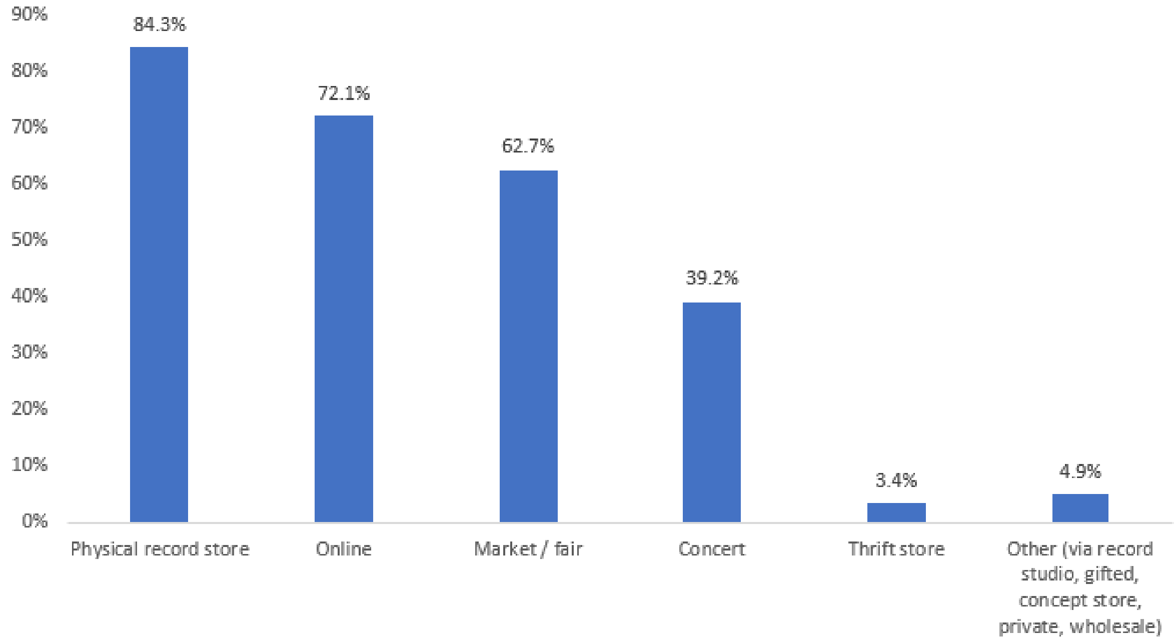
As the commercialisation of vinyl records jumped from DJs to record labels in the past, the market for vinyl records now is full of original editions of albums, remastered versions of those albums and new, contemporary music produced on vinyl (Palm, 2019). As could be expected from a sample derived from record store's social media followers and vinyl Facebook group-members, a large number of respondents has been quite the vinyl collector. The mean for number of purchased vinyl records in the last year is 113, with the median being 40 and the mode 100. The numbers lie so far apart that conclusions cannot be drawn from this. However, As a follow-up to this question, the number of purchased original, remastered and new music albums in the last year has also been asked. Here too, the numbers are quite high. Nevertheless, a comparison of the means will be provided in order to determine the impact of the record labels' commercialisation of the vinyl revival on this research sample. The mean of the purchased original recordings released before 2005 is 77 (around 69%). For the remastered versions of those original albums, the mean is 13 (around 12%) and for new albums produced after 2005, this is 18 (around 16%). From these numbers there is a significant preference for original recordings visible and the commercialisation that remastered versions and new productions have brought with them, has not yet reached this sample of vinyl enthusiasts.

Graph 4.5 - DJs use of recorded music carriers per set last year (2019) (N=17)



On the contrary, the vinyl revival did bring the respondents in connection with more sales locations in the last year. From the 225 respondents, 204 indicated that they had bought a vinyl record in the last year. As can be seen in graph 4.6, the locations where these respondents bought a record last year, are very diverse. The most striking result comes from the 72.1% that have bought a record online in the last year. As the vinyl record is the analogue carrier rising in the contemporary digital era, it is remarkable that many consumers looked online to buy a record. It also shows, that these vinyl enthusiasts are not completely resilient against the powerful music industry's attempt at commercialising the vinyl revival. Though they are, for the large part, able to resist the industries' remastered and newly produced vinyl records, they cannot stand up against the ease of online shopping. As always, the vinyl record has stirred the market for recorded music carriers in a way that is hard to make sense of. However, the results discussed in this chapter, have led to some remarkable conclusions about the market as it is today.

Graph 4.6 - Percentage of respondents buying vinyl records at different sales locations in the last year (2019) (N=204)



Chapter 5 – Discussion and Conclusion

As the results in the previous chapter have shown, music listeners make use of both vinyl records and streaming services but not always for the same uses. The research question (In what way are analogue vinyl records and digital music streaming services able to co-exist within the same recorded music market?) assumed that both carriers are able to co-exist in the same economic market and this is indeed the case. Furthermore, the way both music carriers co-exist in this market is of great interest. As both carriers serve the same purpose, playing recorded music, but are used differently, they act as imperfect substitutes (Power, 2010).

Besides being imperfect substitutes, vinyl records and streaming services also appear to be complements. Results show that streaming services are not only regularly used by this sample to listen to music, but its use also has another purpose. The cheaper short term expenses of streaming services, whether paid or free, are used to outweigh some of the experience attributes of music as content before purchasing the more expensive tangible album. The carriers thus complement each other. In this regard, it is also interesting that respondents have indicated that they not only use streaming before purchasing vinyl records, but also before purchasing CDs. Results indicate that CDs are still very much present in the market for recorded music carriers which is enforced by the indication that respondents do not distinguish the complementary aspects of streaming and vinyl from streaming and CDs. In this regard, it can be concluded that contemporary music listeners make use of the short term cheapest solution to slightly overcome the experience attributes that music as content has on all music carriers.

It is interesting that out of the total amount of vinyl listeners in the sample, 60.4% have indicated to also have a streaming subscription or regularly make use of streaming services. Nevertheless, most respondents have preferences when it comes to listening to music via either vinyl or streaming. When it comes to the value received for the money paid, the sound quality and the authenticity of the carrier, results indicate that vinyl records show significantly higher percentages (see Table 4.8). Nevertheless, the results comparing the different usages of both carriers indicate that there are some aspects in which one carrier is preferred, but in general both carriers are often used for the same ends (see Table 4.9). This shows that there is indeed a difference in the usage of both carriers, however, this difference is quite small and oftentimes not even present since respondents indicated to use both vinyl and streaming for the same purpose.

Against expectations, the results for this sample showed that demographics like age, education and employment status are not significant influencers of having a higher average monthly expenditure on recorded music. The vinyl revival does not take place in a specific demographic group of people, instead the sample indicates that the population of Dutch vinyl listeners is very diverse in terms of age, education and employment status. Furthermore, Dutch vinyl listeners do not only listen regularly to music via vinyl record and streaming services, CDs, computer harddrive and radio were also still listened to on a regular basis last year. The market for all these recorded music carriers is thus still very broad even though all serve the same purpose.

The way analogue vinyl records and digital music streaming services can co-exist within the same recorded music market leans on being both imperfect substitutes and complements of each other. The growth in sales and revenue of both carriers is reinforced by the growing popularity of both these carriers in a way that, theoretically, the growth in numbers of sales and revenues could continue for several years. However, as mentioned earlier, the music industry remains uncertain and unpredictable and so it is difficult to create a clear picture of the future of music carriers.

Limitations

Even though the quantitative research method with which this research has been conducted has resulted in multiple interesting results and conclusions, it also brings some limitations to this research that must be acknowledged. Via the social media pages of record stores and vinyl-related Facebook groups, a convenience sample was drawn. To generalize the results, this way of sampling is limiting. The results explained previously are therefore only to be generalized to the Dutch vinyl listening population.

Furthermore, an online questionnaire also brings several limitations along. Behaviour is not directly observed which is often deemed inappropriate. To measure social sciences, respondents should not only fill in an online questionnaire, but should also be observed for their behaviour and asked follow-up questions related to their responses and behaviour. At the time that this research was conducted, the covid-19 virus made the world of social research a little smaller. It was therefore not quite possible to observe behaviour besides doing an online questionnaire. Using this cross-sectional research design, it was still possible to receive a large number of responses and retrieve data from their answers. This cross-sectional design, however, also brought ambiguity about causality along. The relationship between variables explained in the results and discussion sections are therefore not full causal effects, but associations from which causal inferences are made.

As many as five different contemporary recorded music carriers have been tested in the questionnaire. Within these five, the online video-sharing platform and streaming service YouTube was not specifically included. This could limit the results as some respondents placed the website in the streaming service category whilst others believed it was not present among the options given.

Future research

As much as academic literature has already covered the vinyl revival, there is plenty more to be discovered regarding the renewed interest in the analogue product. Results have shown a significant difference in original records being purchased more than remastered and new records. The reason behind this apparent preference of originals above other records, might lie in the authentic and nostalgic area, but could be researched further.

Much is still to be researched about the vinyl revival itself too. Most straightforward is the question about the future of the vinyl revival. Global numbers show that the popularity of vinyl records is still growing, but on the Dutch national level, numbers have already shown a small decrease (IFPI, 2020; NVPI, 2020). Furthermore, the tangible and analogue features of the vinyl record seem to have had an impact on its revival. Consequently, the increase or decrease in sales and revenues for both CDs and cassettes will be interesting to research as well. Will they too get their own revival, or will they completely disappear from the market? As results indicated, the cassette is not far from disappearing, but the CD is still quite present in the market. The future of both carriers could be of influence on the future of the vinyl revival too.

As the history of the music industry has already shown, multiple carriers have been developed as the newest technological development of that time. It could be expected that a new carrier is already on its way. In the case a new carrier enters the market, future research on the impact that this new carrier might have on the co-existence of other carriers in the market will be of great interest.

Furthermore, in the light of the time in which this research was conducted and written, the crisis that the global corona-virus pandemic has created, will most likely bring changes in the music industry. Whether these changes will also appear in the market for recorded music carriers and will have an impact on the vinyl revival, remains to be discovered.

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Appendix A – Questionnaire Design

Survey Flow

Standard: Block 1: Introduction (1 Question)
Standard: Block 2: Demographics (4 Questions)
Standard: Block 3: Working as a DJ in the music industry (2 Questions)
Standard: Block 4: Music listening habits and preferences (8 Questions)
Standard: Block 5: Comparison of vinyl records and streaming services preference and use (6 Questions)
Standard: Block 6: Ending (1 Question)

Page Break

Start of Block: Block 1: Introduction

Q1 **Nederlandse versie beschikbaar door rechtsboven 'Nederlands' te selecteren**

Thank you very much in advance for taking part in this questionnaire that has been developed for my master thesis for the Master Cultural Economics and Entrepreneurship at Erasmus University Rotterdam.

The study aims to understand the odd renewed interest in vinyl records of the latest years (the 'vinyl revival'). Asking music listeners about their use of different music carriers, this study aims to understand today's market of vinyl records and other (digital) music carriers which could benefit all parties involved in the recorded music market. That includes record stores, streaming platforms, record labels, but also you, the consumer.

It will take **no more than 10 minutes** to complete the questionnaire. Please note that there are no right or wrong answers. Your participation in this study is completely **voluntary and confidential.** Your answers will only be used for academic research purposes.

If you have any questions at any time about the survey, the procedures or my thesis, please contact me by email: **451861aj@student.eur.nl (Annika Jansen)**.

Thank you very much for your time and support!

End of Block: Block 1: Introduction

Start of Block: Block 2: Demographics

Q2.1 What is your age?

____

Q2.2 What is the highest level of education you have completed?

Note: *If you are currently studying, please select the option in which you are currently enrolled.*

- ○ Primary education (1)
- ○ Secondary education (VMBO, HAVO, VWO) (2)
- ○ Vocational education (MBO) (3)
- ○ University of applied sciences (HBO, associate degree) (4)
- ○ University degree (WO bachelor, master, doctoral) (5)
- ○ Other, namely (6) ____

Q2.3 Which of the following categories best describes your employment status at present?

Note: *Multiple answers are possible.*

- ▢ Employed full time (30 hours or more per week; including project-based or freelance) (1)
- ▢ Employed part time (1-30 hours per week; including project-based or freelance) (2)
- ▢ Unemployed looking for work (3)
- ▢ Unemployed not looking for work (4)
- ▢ Retired (5)
- ▢ Student (6)

Q2.4 How much money have you personally spent on entertainment, over the last year on average **per month**?

Note: *Entertainment is here defined as all media content for entertainment amusement. This includes all expenses for (online) subscriptions, memberships, books, television, radio, sound equipment and forms of amusement. It excludes live performances like concerts, theatre and cinema.*

- Less than €5,00 per month (1)
- €5,00 - €14,99 (2)
- €15,00 - €24,99 (3)
- €25,00 - €34,99 (4)
- €35,00 - €44,99 (5)
- €45,00 - €54,99 (6)
- €55,00 - €64,99 (7)
- €65,00 - €74,99 (8)
- €75,00 or more per month (9)

End of Block: Block 2: Demographics

Start of Block: Block 3: Working as a DJ in the music industry

Q3.1 Do you work as a DJ?

Note: *For this study, the definition of a DJ is someone who chooses and plays recorded music at an event, nightclub, or on the radio. In this definition, a DJ could receive (some) payment or no payment for his/her services.*

- Yes, I receive (some) payment for my services (1)
- Yes, I don't receive any payment for my services (2)
- No (3)

Display This Question:

If Q3.1 = 1

Or Q3.1 = 3

= Randomization of categories

Q3.2 When playing a DJ set, which of the following recorded music carriers have you made use of during the **last year**?

	Every set (1)	Not every set, but sometimes (2)	Never in any set (3)
Computer harddrives (e.g. USB, iTunes, (il)legal downloads, etc.) (1)	○	○	○
Vinyl records (2)	○	○	○
Via streaming services (3)	○	○	○
CD's (4)	○	○	○

End of Block: Block 3: Working as a DJ in the music industry

Start of Block: Block 4: Music listening habits

= Randomization of categories

Q4.1 Below multiple recorded music carriers are listed.
Please indicate how often you have listened to each carrier in the last year.

	Daily (1)	Weekly (2)	Monthly (3)	Only a few times last year (4)	Never (5)
Vinyl records (1)	○	○	○	○	○
CD's (2)	○	○	○	○	○
Streaming platforms (3)	○	○	○	○	○
Radio / online radio (4)	○	○	○	○	○
Computer harddrive (e.g. USB, iTunes, (il)legal downloads, etc.) (5)	○	○	○	○	○

= Randomization of categories

Q4.2.1 Below are multiple statements related to general music preferences and habits. Please indicate to what extent you agree with the following statements.
'When it comes to my personal music preferences, I like ..'

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)
.. to think music is an important part of my life (1)	○	○	○	○	○
.. to constantly try to discover music that I am not familiar with (2)	○	○	○	○	○
.. to be up-to-date about recently released music (3)	○	○	○	○	○
.. to listen to music from very different artists (4)	○	○	○	○	○
.. to listen to music from very different genres (5)	○	○	○	○	○
.. to listen to the same songs or albums over and over again (6)	○	○	○	○	○
.. to talk about music with others (7)	○	○	○	○	○
.. to impress others with my sophisticated music taste (8)	○	○	○	○	○
.. to engage with music that is not popular among the general public (9)	○	○	○	○	○

= Randomization of categories

Q4.2.2
Every recorded music carrier has features which are specific for that carrier and create a unique experience.

Below are multiple statements related to different features of music carriers.
Please indicate **the importance** of each of the statements below in relation to your preferences when listening to music.

'When it comes to my personal music preferences, I enjoy ..'

	Very important (1)	Somewhat important (2)	Slightly important (3)	Not at all important (4)
.. tangible, collectible music carriers (1)	○	○	○	○
.. to have tangible music carriers on display as decoration (2)	○	○	○	○
.. listening to music everywhere and anywhere (e.g. public spaces or on the go) (3)	○	○	○	○
.. the freedom to choose to listen to different music whenever I want (4)	○	○	○	○
.. to get offered information on what others are listening to (5)	○	○	○	○
.. to receive personalized recommendations based on previous music I listened to (6)	○	○	○	○
.. good sound quality (7)	○	○	○	○

Q4.3 How much money have you spend on recorded music last year on average **per month**?
This includes all subscription fees and physical vinyl records, CD's or other recorded music bought.

- ○ Less than €2,50 per month (1)
- ○ €2,50 - €4,99 (2)
- ○ €5,00 - €9,99 (3)
- ○ €10.00 - €19,99 (4)
- ○ €20,00 - €29,99 (5)
- ○ €30,00 - €39,99 (6)
- ○ €40,00 - €49,99 (7)
- ○ €50,00 - €59,99 (8)
- ○ €60,00 or more per month (9)

Q4.4 In the last twelve months, have you bought a vinyl record?

- ○ Yes (1)
- ○ No (2)
- ○ I don't remember / I don't know (3)

Display This Question:

If Q4.4 = 1

= Randomization of categories

Q4.5 In the last twelve months, **where** have you bought a vinyl record?

Note: *Multiple answers are possible.*

- ☐ In a physical (record) store (1)
- ☐ Online (2)
- ☐ At a market or fair (3)
- ☐ At a concert (4)
- ☐ Other, please specify (5) ____

Display This Question:

If Q4.4 = 1

Q4.6
How many vinyl records have you bought in total in the last twelve months?

Note: A rough estimate is sufficient.

____

Display This Question:

If Q4.4 = 1

Q4.7
Below, three types of vinyl records are described. In the last twelve months, how many vinyl records have you bought per type of vinyl record?

Note: *A rough estimate is sufficient.*

	Number of vinyl records bought in the last 12 months (1)
Original editions of music albums released before 2005 (1)	
Remastered versions of those original editions (2)	
New music released after 2005 distributed on vinyl (3)	

End of Block: Block 4: Music listening habits

Start of Block: Block 5: Comparison of vinyl records and streaming services use

Q5.1 Do you have a music streaming subscription or regularly make use of a music streaming service?

○ Yes (1)

○ No (2)

Display This Question:

If Q5.1 = 1

And Q4.1 != 1 [6]

Q5.2
Do you listen to the same music via music streaming services that you also listen to on vinyl?

○ Yes (1)

○ No (2)

○ I don't know (3)

Display This Question:

If Q5.2 = 1

= Randomization of categories

Q5.3.1
The statements below compare vinyl records to music streaming services in terms of your personal use when listening to music.
For what purposes do you more often use vinyl records, compared to music streaming services

	I always use vinyl records (1)	I often use vinyl records (2)	I use both vinyl and streaming (3)	I often use streaming services (4)	I always use streaming services (5)
To listen to my favourite artist .. (1)	○	○	○	○	○
To discover new music .. (2)	○	○	○	○	○
To listen to music in the background .. (3)	○	○	○	○	○
For listening to multiple different genres .. (4)	○	○	○	○	○
For listening to multiple different artists .. (5)	○	○	○	○	○
When listening to music that is not popular among the general public .. (6)	○	○	○	○	○

= Randomization of categories

Q5.3.2

The question below compares vinyl records to music streaming services in terms of your personal opinions about both carriers.

Could you please specify for each of the statements below, whether you find these more applicable to vinyl records or streaming services?

Note: *If you don't make use of either one of these carriers, please try to pick the carrier of which you think would be the most applicable to each statement.*

	Vinyl records (1)	Streaming services (2)	Both vinyl and streaming (3)	Not applicable (4)
I believe to receive better value for money via .. (1)	○	○	○	○
I believe the sound quality of music is best via .. (2)	○	○	○	○
I believe music feels more authentic via .. (3)	○	○	○	○

Display This Question:

If Q4.1 != 1 [6]

Q5.4 Please name your favourite music genre to listen to **via vinyl**:

____

Display This Question:

If Q4.1 != 3 [6]

Q5.5 Please name your favourite music genre to listen to **via streaming services**:

____

End of Block: Block 5: Comparison of vinyl records and streaming services use

Start of Block: Block 6: Ending

Q6 Thank you very much for participating in this study!

If you have any further questions, don't hesitate to email me via: 451861aj@student.eur.nl

End of Block: Block 6: Ending