

A Work Project, presented as part of the requirements for the Award of a Master's degree in
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Understanding Consumer Behavior in Mini-Arcade industry: Perceptual map and Brand
Positioning

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Abstract

In the following research, from the point of view of a consulting marketing firm, we will analyze the Italian market of mini-arcade games, to understand what the consumer preferences are and how a retailer chain could take advantage of them. To reach our objective, two marketing research methods have been implemented: perceptual map and conjoint analysis. Following that, different scenarios simulation has been run. The results were fundamental to implementing the marketing strategy to suggest to the retailer the right actions for different sales channels.

After carefully analyzing the Italian competitors' landscape and conducting two interviews with industry experts, a perceptual map has been implemented to understand customer perception on four selected mini-arcade brands. Following that, a brand-specific conjoint analysis has been conducted to examine the importance of the selected product attributes to consumers. Furthermore, various scenario simulations were run to understand preference shares and price sensitivity. Eventually, a marketing strategy has been developed to support the retailer's action in optimizing their sales.

Keywords: Brand Position, Mini Arcade, Marketing Strategy, Conjoint Analysis, Perceptual Map, Market Research, Consumer Behavior.

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1. Introduction (Group part)

In recent years, mini-arcade market is experiencing an explosive development, which is mainly driven by a blend of nostalgia. Moreover, this trend is gradually extending reach into different customer segments. The mini-arcade, a portable device, can bring arcade game enthusiasts the real arcade experience in their house, even in some out-door scenarios, has attracted a niche. The arcade gaming market is estimated to grow at a CAGR of 1.99% between 2022 and 2027. The size of the market is forecasted to increase by USD 1,984.1 million. The growth of the market depends on several factors:

1. The increasing physical activities in arcade gaming, modern mini-arcade devices are thoughtfully designed to encourage physical engagement, promoting an active and immersive gaming experience;
2. The expansion of Amusement Expo International (AEI). AEI serves as a crucial hub for industry stakeholders, providing a platform where the most recent innovations, trends, and products in arcade gaming are prominently featured and exhibited;
3. The launch of new arcade games. The continuous introduction of fresh and innovative gaming experiences excites players while attracting new enthusiasts to the Arcade.

Although the data does not directly reflect the growth of mini-arcade, we can still learn that the arcade market and the number of Arcade lovers is developing, which means the number of our potential customers is increasing. As gaming enthusiasts are seeking a combination of modern technology and nostalgia, the mini-arcade market presents unique opportunities and challenges for both producers and marketers.

In this era of highly developed technology, the game industry is booming. With the development of technology, more and more games can be selected by players, such as VR games, metaverse and triple-A games. The launch of VR is a trend influencing the arcade gaming market growth, making the game an experiential. The gaming hubs segment was valued at USD 15,061.09 million in 2017 and continued to grow by 2021. For the forecast period (2022-2027), APAC (geographical area) is estimated to contribute 50% to the growth of the global market. In this trend, the market of mini-arcade can only be used as a niche in the huge gaming market. The potential impact of emerging technologies on the development of mini-arcades remains uncertain, as the industry is developing under a rapidly changing technological competitive landscape. However, its potential cannot be underestimated. The charm of classic Arcade gaming, combined with the convenience of portable mini-arcades, has attracted the interest of a diverse consumer base, ranging from avid gamers to casual players of all age groups. Avid gamers would use mini-arcades as a means to relive the authentic arcade experience, due to iconic games and retro aesthetics of mini-arcade. For family and friends' gatherings, mini-arcades offer enjoyable entertainment suitable for these occasions. This research thesis aims to assess the potential and opportunities for a toy's retailer in the Italian market by examining consumer behavior and preferences within the market.

2. Literature review (Group part)

In order to know the potential clients in the local market, marketing research is an excellent tool for discovering opportunities in the marketplace (Carl McDaniel & Roger Gates, 2017). Hence, we are planning to conduct a market research study to identify opportunities for the presence in the Italian market. Market segmentation has been a primary objective in performing traditional conjoint analysis in commercial applications (Wittink and Cattin, 1989). Simulated purchase decisions, as indicated by the derived part-worth utilities in conjoint analysis, offer a valuable means to understand how product attributes impact and are accommodated by the market. This analytical approach can provide brands and retailers with a clearer understanding of market dynamics. Perceptual maps, derived from consumer ratings and brand preference data, provide a visual representation of how consumers perceive brand positions, aiding marketers in identifying underlying dimensions, cognitive factors, and competitive positioning, ultimately helping to shape advertising strategies and understand market opportunities. (Jaishankar Ganesh & Gillian Oakenful, 1999). "Moreover, the utilization of a perceptual map serves as a valuable tool in enhancing the comprehension of benefit clusters and in identifying the negative associations between dimensions within the cognitive frameworks of consumers. Multidimensional Scaling (MDS), a multivariate analysis that is applied to map out the customers' perception of products and brands, we could use MDS to generate perceptual map. A perceptual map is created based on the assessments of similarity and dissimilarity provided by respondents. To achieve this, SSPS is commonly used to consolidate responses and generate a perceptual map through aggregate analysis. (Gigauri, 2019) These methodological approaches to market research will assist us in advancing our research more effectively.

About general customer value creation, value, in the context of any product or service, derives from attributes that not only motivate the customer to make a purchase but also contribute significantly to advancing them towards the attainment of their goals (Walter and Lancaster, 1999). Essentially, value creation is strictly connected to the ability of a product or service to resonate with the customer's objectives and aspirations.

Expanding on this basic knowledge, characteristics that lead value creation are divided into two main groups (Woodall, 2003):

- Factors that increase the customer's benefits or make it easier for them to meet their needs are included in the first category. These elements are essential to improving a product or service's overall value proposition because they improve their usefulness, functionality, or other aspects that directly affect customer satisfaction.
- Factors intended to lower the costs for the customer are included in the second category. When it comes to this situation, costs are not limited to money; they also include the customer's time, effort, and resources. This category of attributes takes a strategic approach, looking to simplify procedures, cut down on complexity, or lessen any obstacles that clients may run into when attempting to achieve their goals.

By examining these categories in greater detail, it becomes clear that value creation is a complex process that is deeply ingrained in the features of goods and services. Features that magnify benefits do more than just meet the customer's immediate needs; they also add to a better overall experience, which builds brand loyalty and favorable associations. On the other hand, features that cut expenses show a deep understanding of the customer's journey and work to remove obstacles and annoyances in order to simplify the customer experience.

Identification of these value-adding characteristics becomes critical when attempting to comprehend customer needs. An in-depth examination of elements that increase benefits and those that reduce costs offers priceless insights into the mechanics of consumer decision-making. Businesses can strengthen customer relationships and increase the perceived value of their products or services by closely aligning their offerings with customer expectations through a methodical evaluation of these attributes.

Sources of benefit/value to customers

Sources of benefit	Example
Product Quality	functionality, reliability, customization based on client need, aesthetic, ease of use
Quality of customer service processes	after sales support, delivery time, reliability of delivery, information about product, responsiveness in case of emergency, product return and compensation policy
Quality of customer service personnel	communication, quality of response to request, friendliness, professionalism, looks, helpfulness in solving problems
Brand image	main perception dimensions, sincerity, competency, maturity, vitality
Emotion based quality	Atmosphere of the sales place, promotional events, PR, emotions generated during service: trust, pleasure

Source: adapted from Ferrel et al., 1998; Band, 1991; Best, 2000, Walsters, Lancaster,1999; Woodall, 2003.

Regarding the framework for mini-arcade market research, there is a limited amount of research on mini-arcade. Hence, we decided to utilize research framework of video games that share a high

degree of similarity with mini-arcade games to study our market and customers. Conceptual Framework of value Creation in the Video Game Industry could be distinguished by 2 paths (André Marchand & Thorsten Hennig-Thurau, 2013):

1. Vertical path: represents the “Gaming environment” which is a gaming experience created by brands for its customers.
2. Horizontal path: communication and distribution efficiency. (André Marchand & Thorsten Hennig-Thurau, 2013)

In terms of the market situation and competition landscape, we conducted research about mini-arcade in Italy, including their product portfolio and brand characteristics. In the Italian market, numerous suppliers are available, and our decision is to specifically select the four most recognized brands. This choice is informed by their track record of either already introducing the product to the market or having imminent plans for implementation in the upcoming years. Whether it be due to a product resembling the ideal mini-arcade game, as seen with Legami, or their expertise in production and realization, exemplified by Sega, these chosen brands stand out for various compelling reasons. After interviewing an industry expert, namely Fabrizio Solfanelli, we discovered that the biggest players in the mini-arcade cabinets industry, are the following:

- Giocheria
- Legami
- Crayola (MyArcade)
- Sega

2.1 Research question (Group part)

"What mini-arcade game is optimal for sale in the Italian market by a major retailer?"

Additionally, how can it be effectively marketed in Italy?"

We represent a consulting firm engaged by a prominent retailer in the Italian market, wielding considerable influence over suppliers. Our task is to identify the optimal mini-arcade game among the four major supply brands (Sega, Giocheria, Crayola (MyArcade), Legami) for a consolidation in Italy. The objective is to conduct thorough analyses, including conjoint analysis and perceptual map, to pinpoint the most promising product and features. Subsequently, we aim to suggest to the retailer which brand to collaborate with (the one resulting as the best from our research) and possibly to customize the product based on the results. The overarching goal is to determine the best-suited product for successful marketing in Italy. We operate under the assumption that the retailer's substantial influence allows us to request modifications to certain features of the chosen product based on our analytical results. Furthermore, we are going to define a marketing strategy online and offline to promote the final product for the retailer.

The reasons why we choose Italian Market as our target market are the following:

- 1) The Italian toy market has experienced a slight decline in recent years, attributed to the diminishing demographic growth rate, dropping from 1.44 children per family in 2010 to 1.24 in 2021. To offset potential losses, toy retailers are strategically exploring a new and emerging niche known as "Kidult," catering to customers aged 12 to 99 years old. This aligns with our targeted demographic, encompassing both children and adults. In the 90s, children in Italy commonly played arcade games like Pac-Man, Puzzle Bubble, and Metal Slug in bars and game spots. Now, as these individuals have transitioned into adulthood,

there is an opportunity to attract them as customers, capitalizing on the nostalgic appeal of these games.

- 2) Our research team is mainly composed of members hailing from Italy, and one of us is running a gaming merchandise store, possessing a profound understanding of the Italian Arcade and Video game market and having access to local information. Hence, we decided to choose Italy as our base and research object.

3. Competitors landscape (Group part)

On this market there are several products coming from different sectors such as toys, electronics and gaming. So before to go into the Italian market we decided to analyze the general categories of mini-arcade games. According to the data and information from Literature review and following the interview with the experts, we summarize 3 categories of mini-arcade game where the brands can take opportunities:

1) Tiny Arcade (Example Tiny Arcade by Super Impulse); It has the smallest size among these 3 types of categories. Tiny Arcades exhibit fewer intricate details compared to their counterparts. Notably, they are constructed entirely from plastic, whereas others employ a combination of wood, metal, and plastic in their designs. Moreover, Tiny Arcades generally exhibit lower build quality, rendering them less appealing to dedicated arcade enthusiasts or those driven by nostalgia. Nevertheless, their affordability and portability cater to a broader demographic, particularly the younger generation and children, which represents a substantial market segment. People would purchase a Tiny Arcade for curiosity or use it as a decoration on the bag.

2) Standard Mini-Arcade; These products contain basic features of classic arcade, including Screen, joystick, and cabinet. The product's price fluctuates in the range of 50 to 100 dollars.

However, there are some deficiencies in the details of the Standard Arcade, for example, some arcades are solely powered by 4 AA batterie, almost all of them are made by plastic and Standard Arcades normally do not have coin slot which is an important detail of an authentic arcade machine. Generally, Standard target audience could be Arcade game lovers who want to put an arcade machine in their home at a reasonable price.

3) Collectible Premium Mini-Arcade; This type of mini-arcade possesses nearly all characteristics of an authentic arcade machine with high quality, including high quality screen with high solution, various construction materials like wood, plastic and metal. A classic example of this type is New Way Toys, they not only produce the mini-arcade with high quality, but also communicate effectively with their audience, they introduce their product thoroughly in their website in order to allow their potential customers to learn their product better and finally choose their product. Beyond fulfilling customer entertainment requirements, this product category also embodies inherent collectible worth. However, Premium Arcade machines come with a higher price tag, the Premium Arcade's price is highest among 3 types of competitive landscape which is between 150 dollars and 200 dollars. Its target audience is Arcade lovers who want to purchase high quality mini-arcades to have a better gaming experience, furthermore, they purchase them for collection.

Based on the information gathered during the interview, we are going to analyze carefully the Italian market taking in consideration mini-arcade cabinets, excluding the collectible premium ones, which are aimed to an even narrower target. Our objective is to conduct an in-depth analysis of the Italian market to determine the optimal positioning strategy for mini-arcade product. This analysis will encompass an exploration of the Italian market's preferences and tendencies related to mini-arcades. Our goal is to identify the key product features that confer competitiveness and

devise a strategy to create a product that can secure a prominent foothold in the domestic Italian market.

3.1 Competitors in Italy (Group part)

Legami: Legami offers 3 different types of mini-arcade games. 2 out of 3 have their design inspired to the 90s to install a feeling of nostalgia for older players, serving also as a point of contact between new and old generation. While the third mini-arcade game, which is the most expensive, is entirely dedicated to a single game which is “speed race”. The “speed race”, according to the official store, has a price of €29.95, while the others are, respectively, €12.95 with 152 games in colors 8-bit graphics, and €19.95 with 8-bit graphics. **Sales channels:** Physical retail store, Sponsored ad products on Amazon (does not apply for “speed race”), e-commerce selling worldwide, distributors and wholesalers (to sell their products to a wide range of retailers). They charge higher prices in third party online websites.

Sega: Sega offers the “Sega Astro City Mini”, a miniature arcade cabinet that contains a collection of classic Sega arcade games from the 1980s and 1990s. It features a big screen, joystick, and buttons, allowing players to enjoy games like “Virtua Fighter”, “Golden Axe”, and many more in a compact form factor. The price is higher than the other brands, about 129,99 € and slightly varies across the different retailers. **Sales channels:** SEGA’s official website, Amazon, physical retailer stores, online retailers, distributors and wholesalers.

Crayola: Crayola offers the widest range of mini-arcade games in the Italian market under the name of “MyArcade”, 4 in total. The retailer price is uniform and equal to €44.99 for 3 out of 4 games, and €39.99 for the cheapest. Prices might change according to the platform; we reported prices of a physical retailer shop located in Italy. The games have common features, like the screen dimension, equal to 7cm (about 2.76 inches), the battery which can be charged by USB cable or

any 4 batteries AA, while the number of games differs from 200 to 300 games per mini-cabinet, to mini-arcade games that contain just one game. The titles are: “All Star Arena”, “Retro Galaga Micro Player”, “Karate Champ”, “Retro Machine”. All these titles evoke nostalgia in the players, and they readapt the old titles with modern technical qualities. **Sales Channels:** Crayola’s official website, physical retailer stores (which charge, on average, higher prices), Amazon (where some games might be cheaper), online retailers, wholesale and distributors.

Giocheria: Giocheria offers one mini-arcade game, called “Mr.Genio”. It contains 200 classic games, on a 10cm screen. The price charged is cheaper than its competitors, and it is equal to €29.99. **Sales channels:** online retailers, Giocheria’s official web store, distributors and wholesalers, physical retailer stores.

These competitors’ have been selected thanks to the interview with Adriano Di Marco (Exhibit 6), a small retailer operating in the Italian market, who suggested us the main brands of mini-arcade games that should always be present and that get more attention from clients.

4. Methodology (Group part)

In our current market research initiative, we embarked on a comprehensive analysis that commenced with an introductory investigation into both global and local competition, specifically within the Italian landscape. Firstly, our focus revolved around summarizing the key attributes of their products, based on the Fabrizio Solfanelli’s market analysis (Exhibit 6), an industry expert operating in the Italian local market, and literature review. We then proceeded to categorize the market into three primary product types and delineated the competitive dynamics prevalent within these segments. This initial exploration provided us with a foundational comprehension of the mini-game console industry within a broader context. As a next step, we are planning to conduct a perceptual map analysis, which will allow us to visually represent how consumers perceive the

brands in the market in relation to their respective positions within the market. Additionally, we will also conduct a perceptual map analysis for the selected brands in our preliminary survey.

Moving forward, our strategy entails the utilization, in addition to perceptual map, another market research methodology: conjoint analysis. Through conjoint analysis, we aim to discern the optimal product features and pricing strategies, thereby shaping our product positioning strategy. Before delving into these quantitative methodologies, we will engage in preliminary interviews with an Italian retailer and an industry expert in the Italian market (Exhibit 6). This qualitative phase aims to provide us with preliminary insights into industry dynamics, customer preferences, and potential challenges that we might encounter. It is important to realize that the findings from the preliminary interviews will serve as an initial reference point. Subsequently, we will employ a mixed-method approach for data collection during the conjoint analysis phase. Our primary focus will be on offline data collection, complemented by supplementary online data gathering methods. We intend to establish collaborations with local B2C retail stores in Italy to distribute QR codes to customers making in-store purchases. Additionally, we plan to strategically place QR codes in selected online specialized forums for arcade enthusiasts. This dual approach is intended to provide a comprehensive and precise understanding of our potential customer base and their nuanced preferences. Following the collection and analysis of data, we will craft a product that encompasses competitive attributes tailored to the Italian market, leveraging the insights derived from the conjoint analysis. This will enable us to make informed predictions regarding its performance within the Italian market. In parallel, the perceptual map exercise will entail a comparative analysis of brand's data alongside that of mini-arcade Brands, ultimately resulting in a clear determination of market in Italy. In conclusion, this comprehensive research endeavor aims to evaluate the feasibility of developing a competitive mini-game console in the Italian market. We will not only

provide a definitive assessment of feasibility but also deliver a strategic roadmap with recommendations and future expectations for development and market penetration. Thanks to the analysis run we will be able to identify the perfect mini-arcade and features rise by the conjoint analysis and decide the adapt marketing strategy based on the position of the brand into the perceptual map, in this way we will be able to identify the key aspects that we are going to underline into the marketing strategy approach.

At the end of the analysis, we develop a marketing strategy for the retailer that consists of online and offline marketing strategies. The marketing strategy will have the duty of guiding the retailer to reach prospective consumers and turning them into customers of their mini-arcade game, both using the online and physical channels.

5. Preliminary Research (Group part)

The preliminary research phase serves as an important role in our research. In the context of academic inquiry, it allows us to have a comprehensive understanding of our chosen research methodology which is conjoint analysis and perceptual map, it equips us with the necessary knowledge and insights to navigate research methodologies effectively, ensuring our academic research is methodologically sound. In a professional context, it provides us with an initial understanding and insights of the target market, including a comprehensive understanding of market competition and market condition, potential market opportunities and risks for mini-arcade Industry. It provides a solid foundation for following market research, ensuring that our academic and business research is targeted and successful.

We are conducting a professional interview with the expert of Industry (Exhibit 6), the expectation of this interview is to provide a complete overview of the market, in order to underline the

importance of choosing the right market segment that fits the product better, by checking how the same products are perceived differently among different segments than our target. Additionally, we are able to understand the industry's upstream and downstream components and the structure of the industrial chain, and gaining clarity on how this industry and brands operate, including where it sources its products from and how it sells them.

6. Perceptual Map (Group part)

6.1 Theoretical Introduction to Perceptual Map (Group part)

A perceptual map, also known as a positioning map or brand map, is a visual representation that illustrates how consumers perceive products or brands in a particular market. It is a valuable tool in marketing research that allows businesses to understand the relative positions of different offerings in the eyes of consumers. The map typically plots brands or products in a multi-dimensional space, helping to visualize their perceived attributes, strengths, and weaknesses.

Nowadays, perceptual map is a marketing tool used to offer the most suitable products in the marketplace, influencing the decision making, seeking a competitive advantage, and the implementation of business strategies.

The scope of the perceptual map is of marketing positioning analysis, as it helps us to see where brands stand in relation to each other by looking at consumers and customers preferences, and to strategically position the products to occupy a unique and most favourable position in the market. The perceptual map serves such purpose by providing insight on how consumers and customers evaluate products based on attributes, in this way influencing the business strategies, product

development, pricing, and branding, through a visual representation, which is useful to simplify data.

In addition, it can also serve as an instrument to identify different market segments, and then to tailor effective campaigns for the specific target segment that we are going to choose, making the internal communications within teams clearer by providing a shared landscape.

There are different types of perceptual maps, the most common are:

Standard Perceptual Map: it is the simplest, and it implies the creation of a graph with a vertical and horizontal axis with opposite attributes at each end. Also called two-dimensional perceptual map, brands are put on specific areas of the map depending on how they are perceived by customers. The closest the brands, the more similar attributes these have

Multi-Dimensional Scaling Map (MDS): MDS is a statistical technique that analyzes the perceived similarities or dissimilarities between objects (such as brands or products) based on consumer perceptions. It identifies the underlying dimensions that drive consumers' perceptions. Graphically, MDS maps generate spatial representations where the distance between points (brands or products) on the map reflects the perceived similarities or differences between those points. Closer points on the map are considered more similar, while points that are farther apart are perceived as more dissimilar. In contrast to the standard perceptual map, a multi-dimensional has more than two axis with various attributes. The brands are then plotted on the map, based on their closeness to the vector containing the product or brand attribute or feature.

To understand better the types of perceptual maps, the pros and cons have to be analysed to justify our research choices.

Attribute-Based Map/Standard Perceptual Map

Pros:

1. Insights are clear and focused on specific attributes: this type of maps give an idea on how certain products or brands are perceived regarding specific attributes
2. Practical application: when attributes are well-defined, these maps are generally easier to put in practice for marketing strategies
3. Ease of communication: attribute-based maps are often easier to communicate to a wider range of audience, including those stakeholders who might not have the deepest understanding of statistical methods
4. Actionable suggestions: The results from attribute-based maps can lead to actionable recommendations. Businesses can identify areas for improvement and work towards enhancing specific attributes that are crucial for consumer decision-making.

Cons:

1. Oversimplification: Attribute-based maps may oversimplify consumer perceptions by focusing only on predetermined attributes, leaving out other attributes that might be considered relevant for the customers
2. Lack of exploration: attribute-based maps do not allow for exploration of underlying dimensions that emerge from data

3. Lack of flexibility: this type of map does not adapt to changes in consumer preferences or market dynamics. An attribute might become less relevant over-time, and this might not be accurately reflected on the ever evolving landscape

Multi-Dimensional Scaling Map (MDS):

Pros:

1. Identification of dimensions: MDS allows the identification of underlying dimensions without predefine them
2. Flexibility: MDS is flexible and can be applied to various types of data, making it suitable for a wide range of research questions and industries
3. Capture nuances: MDS maps capture nuances in consumer perceptions that might be missed in more rigid attribute-based approaches, and it allows to see which attributes are considered similar or dissimilar in the consumer's mind
4. More complete overview: it gives a more complete, detailed, and better picture on how consumers see the brands within the marketplace

Cons:

1. Complexity: MDS can be very challenging to interpret, especially for those who do not own a background on statistical techniques, as the spatial interpretation might not be intuitively read
2. Results communication: communicating the findings of MDS to a non-technical audience can be challenging due to the abstract nature of the results

In terms of utilization of SPSS, it is used to compare and analyze different dimensions, including multidimensional scale analysis, cluster analysis and correlation analysis. Based on the results of

the analysis, a perceptual map will be created, using a data visualization tool. This investigation will enable us to define the location of different brands in the market and gain insights into the competitive landscape and the prevailing market dynamics. In order to have a more comprehensive approach and a better overview, without leaving out attributes that might be significant for customers and consumers, we decided to opt for a multi-dimensional scaling map (MDS). In this way, we can quantify and analyse the correlation among 5 attributes, and then summarize them on a two-dimensional diagram, by dividing the attributes into 2 main categories. So, from an MDS, we will turn our model into a two-dimensional map.

In summary, our perceptual map research in Italian market is an essential process in shaping the brand's strategy and marketing strategy. It is rooted in a rigorous methodology and academic survey, providing a strong foundation for data-driven decision-making process, securing our brand's success in our target market.

6. 2 Dimensions Selection (Lai Annan)

According to the literature review, product quality, quality of customer service processes, quality of customer service personnel, brand image and emotion-based quality are the main sources of customer value. (Ferrel et al., 1998; Band, 1991; Best, 2000; Walster, Lancaster, 1999; Woodall, 2003). We could see a strong relation between customer value and quality of the product and service. In order to assess the company's performance in these two aspects, we plan to utilize "Arcade Quality" to measure the perceived quality of the brand's products by customers. Additionally, we will use "Reliability and Trust" to evaluate the trustworthiness of the brand's services and products in the eyes of customers, encompassing overall quality.

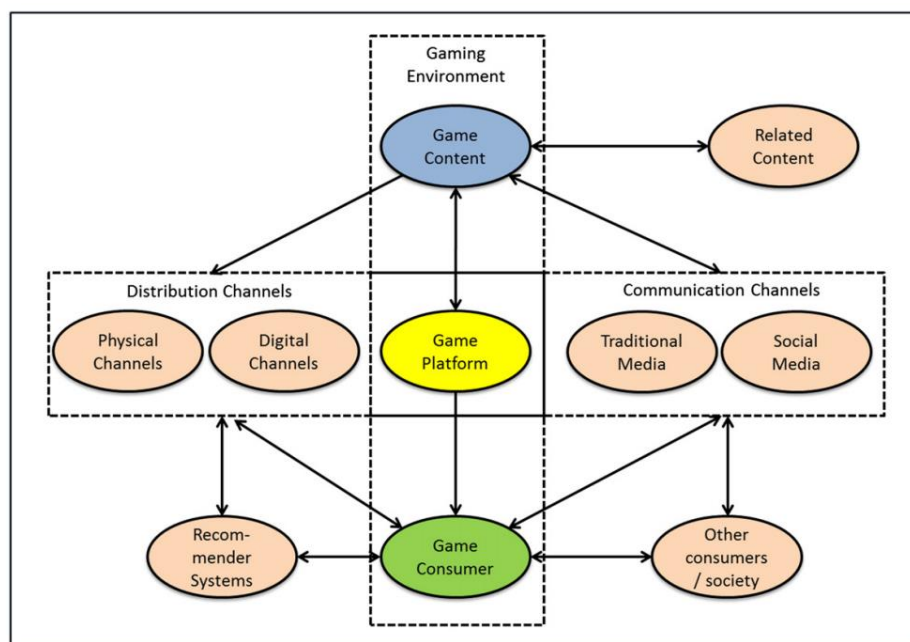


Fig. 1. Conceptual framework.

Source: Value Creation in the Video Game Industry: Industry Economics, Consumer Benefits, and Research Opportunities

Based on the research of video game market research framework, the value creation can be divided into 2 paths: 1. Vertical path (Gaming Environment) 2. Horizontal Path (Communication and

distribution efficiency) (André Marchand & Thorsten Hennig-Thurau, 2013). For the Gaming Environment, we use “Enjoyment” and “Innovation” that the brand. We utilize these two dimensions to assess the gaming environment created by the brand for customers. "Enjoyment" indicates the brand's ability to provide customers with a strong sense of pleasure, which may come from engaging game content or other related contents (such as gaming hardware) For mini-arcade Industry, nostalgia can also bring joy to customers, which brings some differences for mini-arcade industry compared to the video game industry. "Innovation" measures the level of innovation attributed to the brand in the eyes of customers, similar to enjoyment, and this innovation can manifest in hardware design or game content. Regarding Communication channels, we choose “Perceived value” to measure the effectiveness of marketing and communication strategy of the brands.

The relevant attributes chosen to create a perceptual map were also discussed during the interview with the industry expert Adriano Di Marco, after asking to him which criteria and attributes customers evaluate with products and services in the mini-arcade games industry.

After analyzing the literature review and conducting an interview with the industry expert, the 5 relevant dimensions and questions of survey chosen to create a perceptual map are:

1. **Enjoyment:** Which level of enjoyment do you associate with the various brands?
 - We intend to incorporate the concept of enjoyment into our analysis because we believe it is a pivotal factor that significantly influences consumer behavior regarding their purchase decisions. Enjoyment serves as a central and unifying element that connects various aspects,
 - such as game modes, the quantity of games, their level of competition and, most importantly, it exerts a profound impact on the level of fun derived from playing the games,

the overall quality of the games, and their enduring appeal.

To sum up, this dimension evaluates the overall enjoyment it brings to its customers and their willingness to play. For the purpose of creating our perceptual map, we have established a rating scale ranging from 1 to 5. Within this scale, a rating of 1 denotes "Not enjoyable," indicating that players perceive engagement with a product from a particular brand as boredom. Conversely, a rating of 5 represents "Enjoyable," indicating that players believe the product consistently delivers enjoyment and fun, making it a long-lasting source of entertainment.

2. **Perceived Value:** Compared to the amount that you pay, how do you consider the experience that you obtain?

- The variable regards to the assessment of customer perceived value goes beyond the real cost of mini-arcade, but also is built by feeling, experience and expectation of its customers. The assessment of perceived value could be influenced by the quality of a product, brand's reputation and communication strategy, personal preference, price and market competition etc.... Perceived value is an abstract and subjective concept. In our thesis, our focus is to understand how customer's the perceived value offered by various brands of mini-arcade. For the purpose of creating our perceptual map, we have established a rating scale ranging from 1 to 5. Within this scale, a rating of 1 denotes "The brand barely does not have value for the customer". Conversely, a rating of 5 represents "The brand has value for the customer"

3. **Quality of the arcade:** How do you consider the "quality" of the arcade games?

- This attribute describes the overall perceived quality of the mini-arcade. This dimension prioritizes the assessment of the games' collectible attributes and the value it delivers to

consumers as a commoditized product. It is subjective and is subject to influence from various factors. For example, the construction materials of the mini-arcade, the presence of supplementary features such as Headphone access, screen, rechargeability and even the design of the product and brand's logo which is not related to the real quality of the product. Additionally, the perceived quality of the mini-arcade is tied to the quality of the games it offers. It is not depicted merely under a technical level of games, but also by subjective traits like the enjoyment of playing the games, gameplay complexity, level of cooperation and sharing experience, competitiveness, storyline, and number of games. In this dimension, it is imperative to recognize that customers often associate product quality with its price. Hence the balance of price and quality emerges an important variable in the analysis of customers perceptions' quality within this professional and academic context. On a scale from 1 to 5, with 1 being the lowest and 5 being the highest, 1 stands for "Low quality", while 5 stands for "High Quality".

4. **Trust and reliability:** How "reliable" is each brand?

- In the mini-arcade industry, trust and reliability are crucial dimensions. Because clients consistently seek a stable and consistent gaming experience. In addition, a large part of mini-arcade products has a low price, reliability serves as a hint to significantly guide customers' behaviors. This dimension is applied to assess the level of confidence and dependability that customers associate with the brand's products and services. Firstly, customers' trust in the brand is closely tied to the perceived quality of the product. The clients' evaluation criteria could be well-built products, durability and free from defects
- etc... Consistency also influences the perception of customers in terms of reliability and trust. Customers always expect that brand's product performance consistently and as

advertised. Additionally, Customer support, word of mouth, and transparency etc... could be the elements that affect customers' trust. In short, this dimension illustrates the capabilities of a brand that consistently delivers on their promises and provides quality products and services. On a scale from 1 to 5, with 1 being the lowest and 5 being the highest, 1 stands for "No trust and reliability, while 5 stands for "High trust and reliability".

5. **Innovation and Novelty:** How "innovative" is each brand?

- It refers to customers' perceived level of technology and describes how customers perceive or evaluate the technological specifications or technology integration of the brand. Additionally, customers' judgement toward companies will be significantly influenced by the information that brands provide in the market and brands' marketing and communication strategy. Plus, customers' objectivity and information are limited, hence, the dimension only reflects their subjective judgment regarding the brands. This perception can vary widely depending on factors such as features, user interface, innovation, and overall technological advancement, also depends on which specification or features the brands want to emphasize in their promotion and publicity. On a scale from 1 to 5, with 1 being the lowest and 5 being the highest, 1 stands for "Low Innovation". There are 2 possible orientations that audiences perceive a brand as 'Low innovation': 1. A negative orientation, where audiences might interpret the brand as lacking innovation due to outdated technology, obsolete design, or insufficient environmental consciousness, resulting in a diminished perception. 2. Alternatively, there is a positive orientation, as some may view the brand as intentionally emphasizing a retro or vintage approach, which can be perceived as a unique brand characteristic. 5 stands for "High Innovation and technology".

In our evaluation process, we will present 4 different mini-arcade brands. Participants will establish a brand positioning regarding the dimensions we mentioned above, guided by the information provided. As our focus is the Italian local market, hence the research will encompass Italian local mini-arcades brands. Additionally, the survey will be conducted exclusively in Italy and in Italian language. The following brands are the brands we selected for our survey.

- Sega
- Legami
- Crayola
- Giocheria

6.3 Results expectations of Perceptual Map (Lai Annan)

Based on our understanding and experience in the Italian Market, we anticipate the customer perception of 4 brands in the following manner:

Giocheria: Because Giocheria is a relatively new brand in the market with low awareness and only launched one console in the last 2 years, it could face challenges in market recognition. Additionally, the brand may struggle due to low quality and innovation, resulting that it could be perceived as a low-quality and low trusted brand. However, it could be offering a high level of enjoyment for its customers due to its 200 games on the console.

Crayola: It is expected to perform moderately in the market with cabinets featuring both single game and 200-game options. Regarding the brand reputation and perceived value of the brand, the brand is likely to maintain competitiveness due to its high trust, global recognition and excellent quality.

Legami: Because of a balanced combination of price and quality, it is projected to perform well in the market with a high perceived value. The brand is expected to have a strong presence, particularly in the Italian local market, with high trust and significant popularity. The strong local presence could be attributed to successful local community engagement.

Sega: Sega is one of the largest worldwide mini-arcade manufacturers. However, in the Italian local market, it owns low awareness and competitiveness due to its weak local marketing strategy. On the other hand, it has achieved a balance in price, high quality and trust in the global market.

6.4 Interpretation of Factor Analysis (Lai Annan)

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Enjoyment	3.6000	.37173	4
Value	3.6545	.39529	4
Quality	3.7545	.45236	4
Reliability	3.7000	.47748	4
Innovative	3.3682	.41815	4

Correlation Matrix^a

		Enjoyment	Value	Quality	Reliability	Innovative
Correlation	Enjoyment	1.000	-.562	.999	.995	-.855
	Value	-.562	1.000	-.558	-.523	.901
	Quality	.999	-.558	1.000	.998	-.848
	Reliability	.995	-.523	.998	1.000	-.819
	Innovative	-.855	.901	-.848	-.819	1.000

a. This matrix is not positive definite.

The presented data regards a set of descriptive statistics for 5 different variables for 4 brands that we choose: Enjoyment, value, quality, reliability and Innovation. The mean provides an indication of the central tendency of the data. In this survey, it represents the average score given by our Italian customers for each variable. The variable “Quality” receiving the highest score indicates that Italian consumers are relatively more satisfied with quality of these 4 brands, comparing with

the other 4 variables. And, the “Innovation” variable has a slightly lower means, indicating a comparatively lower perception of innovativeness among the participants. The Standard deviation illustrates variation situation of the dataset. A higher standard deviation indicates greater variability in participants’ responses. We can learn from the graph that deviations are around 0.3, which are relatively low, indicating a relatively homogenous or consistent. N represents the number of observations in the sample, in this context is 4, including Sega, Legami, Crayola and Giocheria. The number of participants in this survey is 53.

Correlation Matrix shows the relationship between pairs of variables. According to the graph, there are strong positive correlations between Enjoyment and Quality (0.999) and between Quality and Reliability (0.998), indicating that consumers in Italian market tends to associate Enjoyment with Quality and Reliability. When a brand demonstrates higher levels of reliability and superior product quality, it results in an elevated enjoyment level for customers. The rationale behind these correlations might lie in the positive experience customers derive from products of superior quality of the brand. Moreover, Perceived quality of a brand plays a vital role in shaping the level of trust and reliability of customer. When customers perceive a brand as consistently delivering high quality products, it establishes a positive reputation and fosters a sense of reliability. Additionally, once a brand successfully generates a sense of enjoyment for customers, customers also naturally have reliability and trust in the brand.

On the other hand, there is a strong negative correlation between Enjoyment and Innovative (-0.855) and a positive correlation between Value and Innovative (0.901), indicating that customers in the Italian marketplace tend to consider innovation in brands and the deployment of new

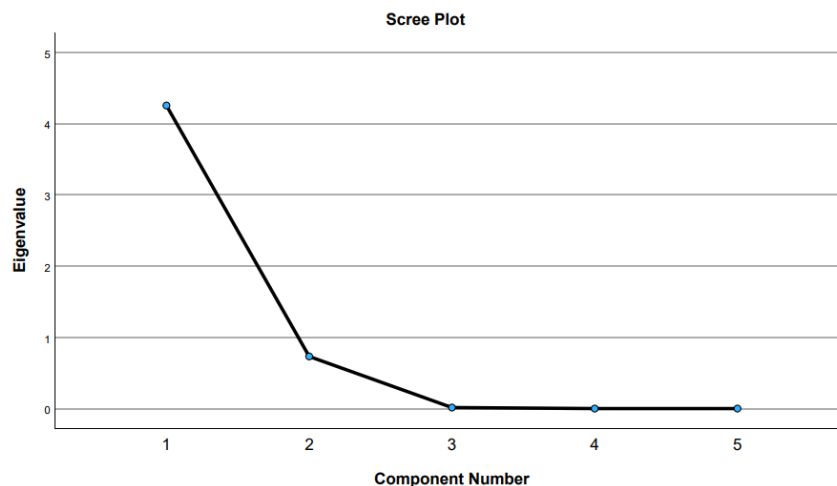
technologies as a good feature in the market, as it increases the overall perceived value of a brand. However, innovation is highly negatively correlated with enjoyment, meaning that innovation makes the customer perceive the product as a better one, but it negatively affects the perception of enjoyment of each brand. In addition to this, we can find a negative correlation between Quality and Innovative (-.848), and Quality and Value (-.562), meaning that even though the latest technologies might be more “technically” appealing, they negatively affect the overall perception of the Quality of the arcade game within each brand, even if they raise their perceived value. Moreover, we have the same trend for Reliability and Value (-0.523), and between Reliability and Innovative (-0.819), which implies that customers trust more “what they know” and tend to consider innovation as a factor increasing uncertainties, while the negative correlation between Reliability and perceived Value. The reasons behind these correlations would be:

1. People generally tend to more positively enjoy playing brands that evoke nostalgic elements rather than those that emphasize innovation. Normally, customers find enjoyment in nostalgic and emotional elements, and attribute greater perception to them. Nostalgia tends to build a strong emotional connection with customers and contribute to the perceived enjoyment of a brand.
2. The brands that focus on innovation probably neglect customers' experience development and research and communication with consumers and audiences. This oversight can result in a gap between technological advancements and the actual needs and preferences of their customer's base.

There is a weak correlation between Value and 3 customer experience associated variables (Quality, reliability and Enjoyment). At first glance, this result is not expected. After having a closer look at the findings, we can notice that the correlation between the perceived value and

Enjoyment is mediumly negative (-0.562), even if customers have a high perception of enjoyment of a brand, the value x price is still too high, so what you get is not equally perceived as what you give (in terms of money in this case). The same negative correlation level of the attribute Value is also present with Reliability and Quality, while the opposite trend is with Innovative, meaning that customers think that the latest and most modern technologies increase the perceived value of the product, while decreasing the perceived Quality of the arcade games of the considered brands and their Reliability level, probably because the latest trends are at their birth and customers might feel them as “not ready” to be purchased, even if they undoubtedly increase the value of the brand.

Scree Plot



Scree plot is a visual representation illustrating the explained variance for each newly defined component, often referred to as a principal component. The plot can use either the percentage (The Elbow Method) or absolute values (Kaiser’s Rule) of the explained variance as the measurement. In practical terms, it is typical for the initial principal components to account for a significant portion of the overall variance.

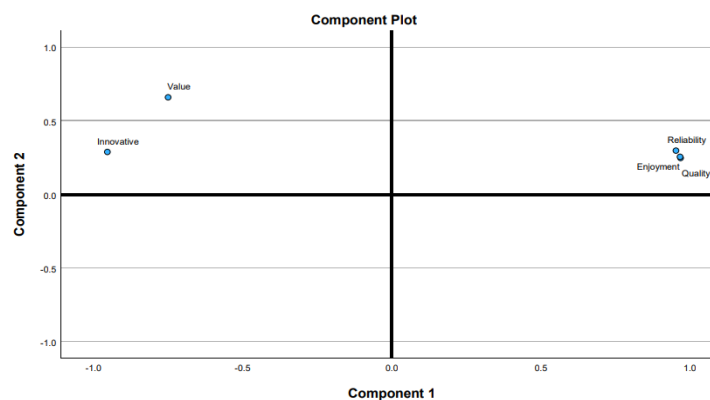
In this thesis, Kaiser's rule is adopted to principal Component Analysis. In Kaiser's rule, it is based on keeping the components with eigenvalues greater than 1. According to the Scree plot of our survey, the Eigenvalue of the second dimension is below 1 (Around 0.8). However, we decided to prioritize interpretability over strictly following Kaiser's Rule. After balancing the trade-off between dimension reduction and information loss, we decided to still create 2 dimensions for our perceptual map. Retaining 2 dimensions can still offer a simplified representation of the data compared to the original variables, making it easier to interpret and analyze.

Component Matrix^a

	Component	
	1	2
Enjoyment	.969	.247
Quality	.967	.255
Innovative	-.954	.288
Reliability	.953	.297
Value	-.750	.659

Extraction Method: Principal Component Analysis.

a. 2 components extracted.



After deciding the number of Components that the survey will apply. 2 components will be extracted. In PCA, the component matrix shows the relationship between the variables (Enjoyment, Quality, Innovative, Reliability and Value) and the extracted principal components (1 and 2). The values in the matrix represent the correlations between each variable and each principal component. When the value is closer to 1, it indicates a stronger positive correlation, and when the value is closer to -1, it indicates a stronger negative correlation.

For component 1, it illustrates strong positive correlations with Enjoyment (0.969), Quality (0.967), and Reliability (0.953) and a strong negative correlation with Innovative. However, regarding variable "Value", Component 1 shows a relatively weak correlation compared to the 3 variables mentioned above. The survey chooses to exclude the correlation between Value and component 1

with the intention of simplifying the research and improving its interpretability. The reasons for exclusion are:

1. Reduction of Complexity: Including “Value” can make the model more complex and harder to interpret. By ignoring the correlation between Value and component 1, the analysis is simplified.
2. Focus on key variables: Ignoring the correlation is a deliberate choice to focus on the most important variables, emphasizing their individual impact on the outcome.

Consequently, the two extremes of Component 1 can be defined by the maturity of the brand. One represents that the brand has understood their customer well and been able to improve product quality and optimize the customer experience based on their customers’ preferences. Customers tend to trust the brand of this side. The other end represents mini-arcade's focus on development and research of technology to increase product's innovativeness, The innovativeness could be from content innovation of mini-arcade game or arcade innovation. The negative correlation between innovation and customer experience implicitly indicates that the brand is developing, and focusing on the product development, brands in this side do not understand their customers as the maturity brand does. Hence, their innovation and technical development could not be considered as positive customer experience related.

For component 2, it exhibits low correlations with Enjoyment (0.247), Quality (0.255), Innovative (0.288) and Reliability (0.297). Component 2 shows a significant positive correlation only with perceived value from customer (0.659). Therefore, Component 2 can be related to customer – perceived value, unrelated to the customer experience. This can be interpreted as the value created by the brand for customers beyond the product experience, such as content marketing, viral campaigns, or social responsibility initiatives (such as environmental conservation or human rights

advocacy). There are various ways in which a brand can create value, and further research is needed to explore how mini-arcade company generates value beyond customer experience in the Italian market. For analytical convenience, we have decided to attribute the enhancement of brand value to the brand's content marketing efforts.

Communalities		Total Variance Explained			
	Extraction	Extraction Sums of Squared Loadings			
		Component	Total	% of Variance	Cumulative %
Enjoyment	.999	1	4.254	85.084	85.084
Value	.997	2	.732	14.630	99.714
Quality	1.000				
Reliability	.997				
Innovative	.993				

Extraction Method: Principal Component Analysis.

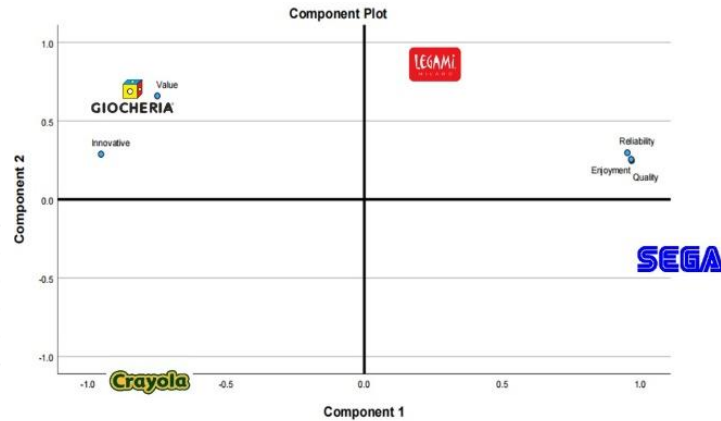
Communalities represent the amount of variance in each variable that is accounted for in 2 extracted dimensions. Communalities close to 1 indicate that a large proportion of the variance of each variable is well explained by the principal components. According to the communalities, all variables are well explained by the principal components.

Additionally, the first component captures the majority of the variance in the data, it 1 explains 85.084% for the total variance and component 2 explains an additional 14.640% of the total variance. In sum, these 2 components explain 99.914% of the total variance. In summary, the high communalities and total variance explained suggest that a substantial amount of variance of variables is retained, guarantying the trustworthiness and meaningfulness of data and research.

Component Score Coefficient Matrix

	Component	
	1	2
Enjoyment	.228	.338
Value	-.176	.901
Quality	.227	.349
Reliability	.224	.406
Innovative	-.224	.394

Extraction Method: Principal Component Analysis.
Component Scores.



Utilizing a multidimensional analysis, we aim to uncover qualitative insights into these brands' positioning. The component Score Coefficient Matrix illustrates the coefficient scores of each variable on the first and second principal components. The scores represent the contribution of each variable in constructing the principal components. By incorporating the Component Score Coefficient Matrix with the results of our market survey, we can position our competitor brands within the perceptual map.

Sega (X: 1.39326, Y: -0.48477): Sega, as a mature brand, is positioned towards the positive side of the X-Axis, suggesting a focus on traditional values such as improving products and optimizing the customer experience. Italian customers consider Sega is a brand that has high quality and is reliable. Compared to other brands, Sega might be considered the brand that places the greatest emphasis on customer experience, dedicated to delivering a high-quality, reliable, and enjoyable gaming experience. The negative Y-coordinate suggests a positioning slightly below the center on the Y-axis, which might represent a lower emphasis on marketing compared to other brands.

Legami (X: 0.02343, Y: 0.97640): Legami is situated close to the origin, indicating a balanced approach between the two strategies defined by Component 1. This suggests that Legami may be striving to offer a mix of both innovative and customer-centric elements, the maturity level of

legami is medium, or Legami has no competitive advantage in this component. However, the highly positive Y-coordinate indicates a strong emphasis on marketing, potentially outperforming other brands in this aspect. In summary, Legami focuses on marketing and communication with customers instead of developing technology or optimizing the customer experience.

Crayola (X: -0.87382, Y: -1.16527): Positioned on the negative side of both the X-Axis (maturity), indicating a focus on innovation and technology development and it has the greatest emphasis on innovation and lowest maturity level among 3 brands. Regarding to Y-Axis (Marketing), it is positioned on the negative side of the Y-Axis, implying a less emphasis on creating value beyond the product, signaling a potential focus on the products' intrinsic and technological features rather than marketing-driven elements.

Giocheria (X: -0.54288, Y: 0.67364): Giocheria shares a similar innovative focus with Crayola, as it is positioned on the negative side of the X-Axis. On the other hand, its placement on the positive side of Y-Axis suggests a simultaneous commitment to creating value beyond the product experience. Due to differing corporate strategy with Legami, they are likely to adopt different marketing paths when engaging in content marketing. Giocheria, with its focus on innovation and development, is supposed to create content that revolves around technology. On the other hand, Legami's content marketing strategy is potentially to emphasize building connections with customers, fostering a sense of intimacy with customers to instill trust in the brand.

6.5 Perceptual Map Final Results (Lai Annan)

Sega is positioned as a reliable, high-quality brand with a strong emphasis on optimizing customer experience. Legami adopts a balanced approach between Innovation and customer-centric strategies, excelling in marketing communication. Crayola distinguishes itself with an emphasis

on innovation and technological development. Giocheria, aligning with Crayola's innovative focus, adds value by content marketing.

Based solely on the results derived from the perceptual map, we can be informed that if a brand is carving out its niche market in the industry, the strategic direction designed for it will emphasize traditional values, product and gaming experience optimization and the creation of value beyond product, namely being a mature brand. By delivering high-quality and reliable products, this brand should differentiate itself in customer experience. In terms of marketing, the brand should focus on traditional values and customer intimacy through some meaningful interactions and communication. Simultaneously, the brand should focus on content marketing, striving to establish profound connections and adding additional value beyond the product experience, setting it in contrast to Giocheria's strategy. This brand aspires to obtain a market presence that is customer experience-oriented, meeting consumers' demands for exceptional experiences and emotional connections. This strategic direction is not suitable for emerging mini-arcade companies because simultaneously addressing product development, customer experience research, and content marketing production requires a substantial investment. And the image of a mature brand could not be built in a short period. On the other hand, this strategic direction can help international companies which are planning to develop their new mini-arcade product lines, finding their positioning or, assist companies that already have a certain market share in optimizing their positioning strategies. For emerging mini-arcade companies, the most effective strategy is to benchmark against a larger brand, adopting a follow-up approach, and making trade-offs between marketing, product development, and technological advancements.

As a consulting company, the final goal is, combined with the results of the conjoint analysis, to utilize the results of the perceptual map to advice for the ideal product of one of the four brands

examined within the Italian market. If used alone, the perceptual map is not sufficient to provide a complete explanation of which is the ideal best product, but it would still be useful in the creation of a marketing strategy and the positioning of the product. In the eventuality that it would not be possible to create a whole new product, we would still advice focusing on already existing products on the market that more closely describe and get closer to the ideal one. Monitoring changes over time becomes crucial to adapt to the ever-evolving market dynamics, as perceptual map is not static, and customer perceptions can change. A regular update would serve to monitor marketing efforts and adapt strategies accordingly.

7. Conjoint Analysis (Group part)

7.1 Theoretical Introduction to Conjoint Analysis (Group part)

In today's rapidly changing and increasingly competitive environment, satisfying customers' needs and wishes has become an important challenge for many companies.

In the effort to continuously offer better products and at the same time make profits, companies have the duty of implementing well thought-out strategies. Considering the price and cost limitations, a company cannot completely fulfil all the desires of its customers. Therefore, a crucial task of a company's marketing department is to create a value proposition that maximises profits. The key question to be answered at this point is how to exploit the company's limited resources in the design and development of products and services to achieve profit maximisation.

Marketing experts look at the Conjoint Analysis as one of the best methods to explore and examine customer needs. It is a market research technique used to assess the preferences of the consumers and to determine how the customers purchase decisions are driven by specific products features. This methodology is based on the conduction and construction of detailed experiments among customers in order to shape their decision-making process provides. Prospective clients are asked to make evaluations about the product attributes that influence their purchasing decisions conjointly, as the analysis suggest, instead of judging them individually. Consequently, the analysis enables the company (in our case the retailer) to discover which product attributes create value for a customer and how they will react to a variety of product configuration. Hence, it

provides a crucial perspective on consumers value perception and allows companies to take conscious decisions on products design, market positioning and pricing.

In this chapter, it will be analysed in detail what a Conjoint Analysis is. The different types of Conjoint Analysis will be examined, underlying each major positive and negative aspects. The purpose of conjoint analysis will then be discussed, and eventually the process from attribute definition to data analysis and interpretation will be examined. Following the theoretical discussion, a conjoint analysis will be conducted for the mini-arcade games market, in Italy, to see what value is most appreciated by the different segments of the market. Furthermore, to understand market scenarios, simulations will be run to analyse the preference shares of the mini-arcade games and the price sensitivity.

7.2 Types of Conjoint Analysis (Group part)

The Conjoint Analysis is a statistical and data analysis technique used in the market research field to quantify and understand the preferences of the consumers towards a specific product or service.

For the purpose of our research, it is essential to understand which type of Conjoint Analysis fits better to investigate the customers' preferences for the mini-arcade games in the Italian market. To reach the scope, it is needed to examine the most common forms of Conjoint Analysis and their positive and negative aspects.

There are several ways to do conjoint analysis, the most typical are:

- Choice-Based Conjoint (CBC) Analysis: one of the most common forms of conjoint analysis and measures willingness to pay for goods and services as well as preferences (such as attribute priority). In a competitive setting, CBC challenges customers to choose

which products to trade off. These trade-off choices can then be utilized to determine the impact of different product factors, such price, brand, or technical features, on the likelihood of a purchase.

- Adaptive Conjoint Analysis (ACA): The questionnaire for this kind of conjoint is created in real time, during the interview. In order to maximize a particular parameter, it "adapts" to participants' responses (e.g., minimizing confidence intervals for certain part-worth utilities). Respondents are asked to indicate their choices for a few possible attribute levels, following that, based on the responses provided in the first stage, the algorithm optimizes the projected combinations of discrete choice options.
- Full-Profile Conjoint Analysis: This form of analysis presents the respondent with a series of full product descriptions and asks them to select the one they'd be most inclined to buy. In full-profile investigations, each decision set displays every trait.
- MaxDiff Conjoint Analysis: an analytical technique for quantifying preferences, in which participants are asked to evaluate a range of options and narrow it down to the best and worst choices. This removes ineffective answers that rank every option ambiguously.

To understand better the above types of Conjoint Analysis, the main pros and cons of each has to be analyzed.

Choice-Based Conjoint (CBC) Analysis:

Pros:

1. **Realistic Decision Making**: CBC asks respondents to select from a range of products while considering trade-offs between various features, simulating real-world decision-making.

2. Quantitative Measurement: Pathways utilities can be estimated thanks to CBC's quantitative estimates of preference utilities for every attribute level.
3. Interaction Effects: CBC can record the ways in which several qualities interact with one another, giving information about how the values of one attribute may influence the preference for another.
4. Scenario Analysis: By providing respondents with various products and evaluating the influence on preferences, researchers can use CBC to do scenario analysis.

Cons:

1. Complexity of Data Analysis: CBC data analysis can be challenging and necessitates sophisticated statistical techniques. Sophisticated models are used in the assessment of part-worth utilities, and the conclusions drawn from the analysis may depend on certain assumptions.
2. Assumption of Independence: The CBC makes the same assumption about respondents' choice-making in each set. This could not always represent how decisions are made in the actual world, as decisions are sometimes influenced by past choices.
3. Limited Knowledge of Attribute Interaction: Although CBC can record interaction effects, certain complicated interactions between attributes may not have enough depth.

Adaptive Conjoint Analysis (ACA)

Pros:

1. ACA customizes and streamlines the choice tasks for each respondent by considering their past choices. Through a personalized approach that focuses on the most relevant trade-offs for each individual, data collection can become more efficient.

2. **Enhanced Information Efficiency:** The goal of ACA is to maximize data collection efficiency by collecting more information for each choice task. This is accomplished by customizing each respondent's profile according to their past responses.
3. **Comprehensive Individual Preferences:** ACA can offer comprehensive insights into the preferences of individual respondents, enabling a more in-depth comprehension of the ways in which various attributes and levels affect overall utility.

Cons:

1. **Limited Generalizability:** The results of ACA may be more specific to individual respondents and may not translate well to a larger market because of its personalized nature.
2. **Dependency on Technology and Software:** To apply adaptive algorithms and conduct data analysis, ACA depends on software tools, which could limit accessibility.
3. **Potential Bias in the Adaptive Process:** Because the adaptive process depends on respondents' initial decisions, bias may be introduced if respondents' decisions are influenced by outside forces or if they lack a thorough understanding of the good or service under review.

Full-Profile Conjoint Analysis:

Pros:

1. **Direct Preference Measurement:** Respondents provide a clear indication of their preferences for the full range of products by directly rating.
2. **Relationships between Attributes:** Full-profile conjoint analysis can identify relationships between attributes, revealing how the levels of one attribute may affect the desirability of another.

3. Robustness: Full-profile conjoint analysis studies have the potential to yield robust and trustworthy results when they are properly designed.

Cons:

1. Managing Price Sensitivity: It can be difficult to include price as an attribute in full-profile conjoint analysis. When price is considered, respondents might find it challenging to assess a product or service's overall value.
2. Lack of Flexibility: full-profile conjoint analysis is less flexible. There are few opportunities for researchers to modify the study in response to respondent feedback.
3. Incapacity to Handle a High Number of Attributes: Respondents may experience information overload and a decrease in the reliability of their responses if they are faced with a high number of attributes to process and evaluate.

MaxDiff Conjoint Analysis

Pros:

1. Measurement of Realistic Preferences: MaxDiff asks participants to rank their options in order of preference, thereby capturing the relative importance of various attributes.
2. Efficiency in Data Collection: MaxDiff is suited for scenarios with a broad range of features and can effectively handle several attributes and levels, enabling researchers to collect a substantial amount of preference data.
3. Statistical Rigor: By applying sophisticated statistical techniques to the data gathered by MaxDiff, significant insights can be obtained, and the relative weights of various attributes can be determined.

Cons:

1. No Absolute Preferences: The preferences offered by MaxDiff are relative instead of absolute.
2. Limited Attribute Level Information: MaxDiff gives information on the relative importance of attributes, but it doesn't list the levels that are preferred for each attribute.
3. Complexity in Managing Interactions: Because MaxDiff does not specifically record attribute interactions, it is more difficult to comprehend how preferences for one attribute may be influenced by the levels of another.

After examining the most common types of conjoint analysis, we decided that the most effective method for the purposes of our research is CBC as it allows us to simulate real-world decision-making circumstances. More specifically a Brand-Specific Conjoint will be used, which provides quantitative estimates of preferences utilities for every attribute level and allows us to simulate the share of preference and the price sensitivity for the various products configurations.

8. Marketing Strategy (Group part)

8.1 Pricing Strategy (Group part)

According to the simulation on the price sensitivity, in which it was discovered that a price equal to €45, for the brand Giocheria, has a greater preference share (62.6%) than the same product for €30 (44.4%), and €12 (59.9%), the simulation was run among already existing products on the market.

The explanation for such quantitative change can be found in the perceptual map where we can check which values are associated with the brand Giocheria. We noticed that Giocheria scores very high when it comes to Innovation and Value. Therefore, as previously mentioned, Innovation refers to the level of technological advancements that is associated with the brand, while Value is highly related to the perception around the brand before even playing with its products, strongly influenced by the brand's marketing and communication. Furthermore, we noted that these two variables are highly positively correlated (0.901), which gives to us another hint on how prices might change accordingly, meaning that the more technical advancements and newest features are present within the brand, for example high screen resolution or a 5 inches screen size, the more valuable the brand is perceived by customers.

In our case, the intrinsic value of the price goes beyond the sole financial performance. A price of €45 makes the brand perceived as more valuable and, consequently, more innovative. Consumers are willing to pay such a price because they are aware of the fact that new technologies are expensive and that the probability of being deceived by marketing campaigns, which tend to

overrate a product, is lower. For this reason, our respondents would be more willing to pay a higher price than a very low price (€12) or a medium price (€30).

In conclusion, €45 represents the most suitable, in terms of preference share, price for the mini-arcade cabinet.

8.2 Brand Relevance (Group part)

The limit of the software Conjointly, is that, in our case, we could not get the information about the relative relevance of the attribute “brand” for the final decision of our respondents. However, the last simulation, which was run, namely the release on the market of 4 identical products for the same sales price, aims at explaining the weight of the brand in the final decision making. As per results, **Giocheria** still achieves the biggest preference share (48.7%) meaning that, for such a product containing +300 games, a big screen dimension, and a price of €45, Giocheria is the most preferred brand. So, at parity of conditions, we can conclude that, after reviewing the perceptual map results, the customers within this market are more likely to buy the product of the brand that is perceived more innovative and more valuable.

However, the limit of this analysis is exclusive to Giocheria’s optimal product. That represents a limit because, if we choose a combination of mini-arcade game features that does not suit the perception around the brand, customers might be tempted to switch their preferences.

8.3 Ideal Number of Games (Group part)

Looking at the ranking on the best “ideal” products (see Exhibit 4), we can notice that the ideal number of games has to be +300. As we are not buying any sort of license, which is a common practice for those brands who have the intention to create mini cabinets with just 1 game, which

implies additional costs, while having a high number of games guarantees a high variety while playing.

Furthermore, having a certain level of variety withing our product is particularly important, as customers might be a certain· that incorporates +300 games is a fully innovative features, because, as of today, no products in the market contains such a feature.

8.4 Screen Dimension (Group part)

One thing in common that all the 20 solutions for the ideal product have is the screen dimension. Customers see it as an absolute added value under any circumstance. In a perceptual optic, a big screen is seen as innovative and technologically advanced, and, at the same time, it increases users' experience in a more engaging and immersive way.

It is a no-brainer that a 5 inches screen would be a “must have” for the launch of a new product.

For the online channels, the retailer should always undergo the products and packaging to the ISTA-6 Amazon Package Testing, which is a test that challenges the capability of the packaging and the product to withstand transport hazards in order to improve efficiency and minimize waste and customer dissatisfaction.

9. Online Sales and Marketing Strategy

9.1 Keywords tool (Group Part)

When it comes to e-commerce, one of the most critical elements that determines whether an online business will succeed, or fail is its product visibility. Prior to all the sub-KPIs influencing the conversion rate, our product needs to be accessible and viewed by customers. This is the first part of the e-commerce process, where the clients become “aware” of our product offering.



In this regard, in order to appear to the eyes of potential customers while browsing on the platform, we need to maximize the efficacy of our product search, by implementing the right keywords to the product page. In this way, the SEO organic search will fully optimize our content without incurring additional costs, unlike paid search, where there is no direct payment for placement or clicks. The ranking is then defined by the platform’s algorithm.

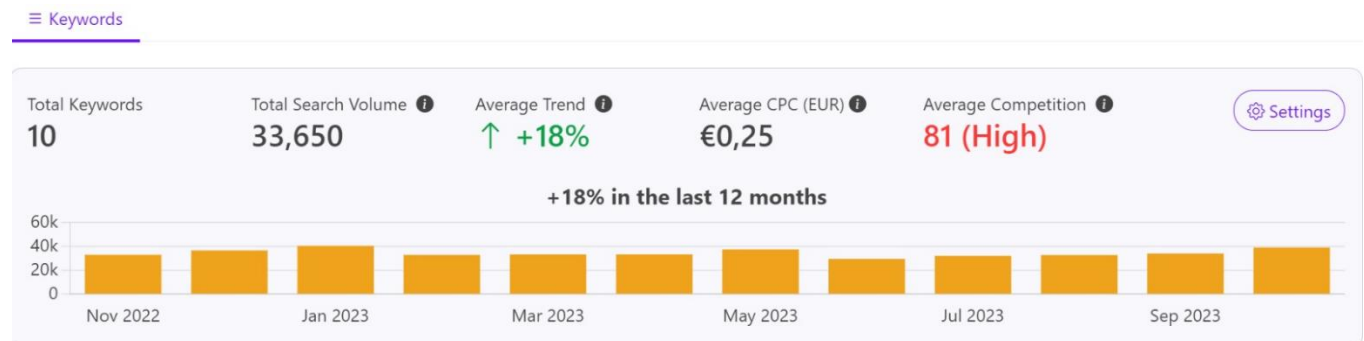
Currently, on Amazon listing for mini-arcade games within the Italian marketplace, there are a few “sponsored products” for our product category. However, it is possible to notice that, according to the search words in the search bar, it is very likely to incur also into other types of products that interfere during product search. Meaning that the clients, while searching for our products, other “unwanted” items will appear to them. In this case, brands would compete in terms of page views, not only against the direct competitors in the market, but also against other gaming platforms and consoles which are different products from ours.

With the aim of overcoming the described challenges, we decided to employ a platform, called keywordtool.io, which allows us to track the popularity, the trends, and performances of keywords that might be relevant for our content and organic search, for both Amazon and eBay.

We first filter our research by selecting Amazon as the platform to analyze the keywords, we then select Italy as we are interested in this marketplace, and then the language of search. For each given keyword, a set of KPIs is given, such as: search volume (which shows how many people search for the keyword per month), trend (that shows the monthly change in the search volume of the selected keywords over the last 12 months), average CPC (which is the Cost-per-Click, an estimated sum of money that advertisers bid on this keyword, and it helps to identify how lucrative a keyword is), competition (which shows how many advertisers are bidding on the keyword relatively to all the keywords). These are the keywords (or long-tail keywords) that we want to search and see their performance within the Amazon Italian marketplace:

- 1) Arcade
- 2) Cabinato arcade (arcade cabinet)
- 3) Arcade machine
- 4) Mini-arcade
- 5) Mini cabinato arcade (mini-arcade cabinet)
- 6) Mini cabinati arcade (mini-arcade cabinets)
- 7) Retro arcade
- 8) Geek
- 9) Console portatile (portable console)
- 10) Console portatile retrogaming (portable retrogaming console)
- 11) Cabinato (cabinet)

Here is the results of our search according to the platform's KPIs, without including the word “Cabinato” as the platform permits a maximum selection of 10 keywords per time:



This first image tells us about the overall statistics among all the keywords listed above (except the word “cabinato“), without a closer look to each keyword (or long-tail keyword) performance, these data might prevent us from making a profitable and accurate decision if considered alone, because each keyword has its specific figures. Here is the performance of each keyword:

Keywords	Search Volume	Trend		Average CPC (EUR)	Competition
arcade	18,200	0%		€0,19	25 (Low)
cabinato arcade	8,100	↑ +82%		€0,12	100 (High)
geek	3,600	↓ -18%		€0,87	2 (Low)
console portatile	2,400	↑ +50%		€0,16	100 (High)
console portatile retrogaming	320	↓ -20%		€0,22	100 (High)
mini arcade	320	0%		€0,12	100 (High)
arcade machine	270	0%		€0,20	99 (High)
mini cabinati arcade	180	↑ +78%		€0,16	100 (High)
mini cabinato arcade	180	↑ +78%		€0,16	100 (High)
retro arcade	80	↓ -33%		€0,31	85 (High)
cabinato	40,700	↑ +50%		€0,12	35 (Medium)

As we can see, the best performative keywords are the ones that include a larger number of product categories and lifestyle (geek). In this way, choosing these keywords will make the product appear along with a wide number of non-relevant searches and products, decreasing the SEO and

relevance of the product. In simpler terms, the probability that the product will not appear in the eyes of potential customers while browsing on Amazon increases drastically, as we are assuming that customers will not click after the 1st page results.

Among the keywords with the highest search volume, we should still put “cabinato arcade” (arcade cabinet), “console portatile” (portable console), and “cabinato” (cabinet) in our product page because the combination of their high search volume, their growing search trend in the past 12 months arriving to, respectively, +82% and +50%, is particularly promising. In addition, it is realistic to think that “cabinato arcade” and “console portatile” might increase the knowledge about our product and get more customers that were not thinking about buying a mini-arcade cabinet or were not aware about the existence of this product category. In comparison to the traditional arcade cabinets and the modern portable consoles, our product is way cheaper and affordable.

However, by looking to the keywords that solely describe our product category, we can see that the search volumes decrease substantially, but we can find a positively growing trend, meaning that customers in Italy are showing an enhanced interest in purchasing mini-arcade cabinets.

Overall, as we want to test how effective these keywords are once the product is available on the platform, the type of search that we aim for is the “organic search”. In this way, we can minimize our costs, check the effectiveness of our content and adjust it accordingly. Only after finding the right keywords in title and product description, the deployment of quality product content in images and videos, that maximize the relevancy, clicks on our product page, and conversion, and having an accurate depiction of the ROAS, we could think about switching to “paid search” if needed, and it would imply more costs but an increased level of visibility.

In our first draft of the product page, we decided to include the following keywords between the description and title: arcade, cabinato arcade, console portatile, console portatile retrogaming, mini cabinati arcade, mini cabinato arcade, mini-arcade, cabinato, and arcade machine.

eBay is the second platform for which we examine the most precise and pertinent keywords. These are the findings from our investigation:



Similar to Amazon, the selection of the right keywords, in order to make a better decision making, is essential. Here is the performance of each keyword on eBay:

☐ Keywords	↓ Search Volume ⓘ	Trend ⓘ	Average CPC (EUR) ⓘ	Competition ⓘ
☐ arcade	3,700	0%	€0,19	25 (Low)
☐ cabinato arcade	1,600	↑ +92%	€0,12	100 (High)
☐ geek	740	↓ -18%	€0,87	2 (Low)
☐ console portatile	490	↑ +51%	€0,16	100 (High)
☐ console portatile retrogaming	70	↓ -13%	€0,22	100 (High)
☐ mini arcade	70	0%	€0,12	100 (High)
☐ arcade machine	50	0%	€0,20	99 (High)
☐ mini cabinati arcade	40	↑ +75%	€0,16	100 (High)
☐ mini cabinato arcade	40	↑ +75%	€0,16	100 (High)
☐ retro arcade	20	↓ -50%	€0,31	85 (High)
☐ cabinato	8,200	↑ +49%	€0,12	35 (Medium)

As we could expect, the total search volume for the same keywords is way lower than Amazon's, due to the retailer's size, but a positive growing trend for the selected keywords, meaning that even

on this platform customers' interest in mini-arcade game is increasing. However, as we will not incur any initial cost for listing the product on the platform, we would still use eBay to showcase our product.

Compared to Amazon, the trend in the past 12 months for each keyword and the competition are almost the same, while the search volume is usually four times lower. For the creation of the product page, we would exclude those words that have low search volume or that are not particularly competitive, such as “geek” and “retro arcade”.

9.2 Analysis of Online costs (Group Part)

Ebay

Ebay charges two types of fees: when you list a product, and when you sell an item. So, to list a product on eBay, such as a mini-arcade game, at a fixed price, you would typically incur insertion fees and, if the item sells, final value fees. The amount of these fees depends on the marketplace where we operate in. In Italy, every month it is possible to get up to 150 zero insertion fee listings, over 150 listings the insertion fee charged is €0.35.

For our specific product category, as we are listing less than 150 items, we would only incur final value fees, which are the fees applied once the item is sold. In Italy, the amount of such fee is the 5% for the portion of the sale up to €2000 and 2% on the portion of the sale over €2000, plus a €0.35 per order. The total amount of the sale is what the buyer pays, and it includes the shipping costs, packaging expenses, VAT and other applicable tariffs.

The responsibility for shipping typically falls on the individual seller, not on eBay itself. Sellers are responsible for managing the shipping process, including choosing shipping carriers, packaging items, purchasing shipping labels, and ensuring that the items are delivered to buyers

in a timely manner. In the Italian market, we pointed out one potential shipping carriers, particularly famous for its reliability and size.

In our case, considering a selling price of €45, the retailer would incur in the following costs: €14.64 for the unit cost of the mini-arcade cabinet from Giocheria, a 5% final values fee, and a final fixed fee of €0.35.

$$\text{Net Revenue x unit} = 45 - 14.64 - (5\% \times 45) - 0.35 = 27.76$$

Amazon

There are different costs associated with selling on Amazon:

1. **Individual vs. Professional account:** individual seller account does not have a fixed monthly subscription, and the cost is €0.99 (excl. 22% VAT) per item sold plus an additional referral fee. While, for the professional seller account, there is a monthly subscription equals to €39 (excl. 22% VAT) per month plus the additional referral fee, which changes depending on the product category. A professional account would be the best choice cost-wise if the forecast is to sell more than 40 items per month. However, professional account also allows us to advertise products (incurring in higher costs), run promotions like “free shipping”, and to access more detailed reports and APIs (application programming interfaces).
2. **Referral fee:** sellers pay a referral fee for each item sold. It charges sellers for the privilege of selling their products on the platform. A mini-arcade game is a product which falls under the category “Toys & Games”, in which the referral fee is 15% plus a 22% VAT per item sold, with a minimum referral fee per item sold equal to €0.30

3. **Fulfillment fee:** Fulfilment fees depend on whether you plan to ship products yourself or use Fulfilment by Amazon (FBA) to handle your logistics. If the price does not differ significantly between the first and second options, we should opt for FBA as it would allow us to save more time, and we would have a better guarantee about the quality of the order fulfillment. The costs associated with FBA are variable and depend on the product category, weight, size, and units in storage. For example, taking into consideration a product which falls in the same category, we would have, for the Italian marketplace, logistics management costs are €5.60 plus a 22% VAT, and a storage cost per unit that is €0.16.

In our case, for a selling price of € 45, our net revenue per unit is equal to €15.11.

These are the calculations: referral fee= $15\% \times 45 = 6.95$, VAT= $22\% \times (45 - 6.95) = 22\% \times 38.05 = 8.3$

Amazon costs x unit= referral fee + VAT= 15.25, cost of product Giocheria= 14.64, Total Unit Cost= cost of product+ Amazon costs per unit= $14.64 + 15.25 = 29.89$

Net revenues= Price-Total unit costs= $45 - 29.89 = 15.11$

There is also the monthly subscription to a Professional Seller Account to be considered, which amounts to €40 per month plus 22% VAT, which is equal to €48.8. The breakeven quantity, in order to fully recover the costs is the following: $BEQ = \text{Fixed Costs} / (\text{Price} - \text{Variable Costs per unit})$
 $= 48.8 / 15.11 = 3.23 = 4$ mini-arcade cabinets need to be sold online on Amazon to breakeven and fully recover the costs.

We assume that the retailer has enough storage all over the territory to minimize the logistical and shipping costs, which have been left out during the calculations, making the estimation slightly underestimate the quantity to breakeven.

Ebay represents the most profitable ecommerce platform between the two, however, the traffic within the platform is way lower than Amazon. The positive side of Ebay, is that there are no fixed costs for such product category, it is a win-win situation, if the retailer manages to make sales it earns relatively more, but if the retailer does not manage to convert, there are no fixed costs and then it has no difference between listing the product on the platform or not. For this reason, both platforms should be taken into consideration to list the mini-arcade game.

10. Conclusion and Recommendations (Group Part)

The aim of the research is to answer the question: What mini-arcade game is optimal for sale in the Italian market by a major retailer? Additionally, how can it be effectively marketed in Italy?"

In conclusion, the examination of the perceptual map and brand positioning yields valuable insights into the perceptions of Italian mini-arcade customers regarding the brands of mini-arcades (Sega, Legami, Crayola, and Giocheria). Our client, the retailer, can understand how the brands they are selling, and other brands are perceived by their clients. This can help them in identifying gaps or areas of strength in the brand (product) portfolio, assisting them in improving the product selection and finding the brands that align with retailer's brand image and customer base. Additionally, according to the perceptual map, Giocheria's attributes are highly correlated with Innovation and Value, in terms of marketing and communication content of the brand, therefore, we can conclude that within the Italian market, customers prefer new products and more advanced technologies partnered with a compelling storytelling of the brand, over well-known and well-established products. Regarding the marketing strategy of retailers, the perceptual map can guide marketing and communication efforts, helping retailers to build their unique image.

The findings derived from the Conjoint analysis distinctly point towards Giocheria's mini-arcade game as the most favored product among consumers. With its combination of a large screen, an extensive game library of +300 games, and a price point of €45, this particular configuration stands out as the preferred choice. As consultants, we propose a strategic recommendation to the toy retailer chain: advocate for modifications to Giocheria's current offering by augmenting the game library with an additional 100 games. This proposed enhancement would justify a potential increase in the selling price from the current €30 to the more premium €45.

In the event that Giocheria opts not to implement the suggested modifications, our in-depth analysis demonstrates that the existing mini-arcade game from Giocheria remains the top choice according to consumer preferences. The simulations conducted affirm that Giocheria's current product, featuring a large screen, 200 games, and priced at €30, retains the highest preference share. Thus, it is advisable for the toy chain to prioritize this particular product in their inventory.

Furthermore, the simulations unveil a compelling insight: there is a substantial potential to further enhance the preference share by increasing the selling price to €45. This strategic adjustment not only aligns with consumer preferences but also presents an opportunity to elevate the already commendable profit margin associated with the Giocheria branded product.

In essence, the conducted analysis not only identifies the optimal product configuration based on consumer preferences but also provides actionable recommendations for the toy retailer chain. The proposed modifications, if implemented, can result in an even more appealing product for consumers, potentially contributing to increased sales and profitability. The strategic focus on Giocheria's mini-arcade game, whether through the proposed enhancements or by leveraging the existing configuration, underscores the significance of aligning product offerings with consumer preferences and market dynamics.

To conclude, the conducted analysis provides confirmation that the most suitable mini-arcade game to be marketed is the one branded Giocheria.

Regarding the marketing strategy to follow in order to successfully deliver the best mini-arcade game on the Italian market, the suggestion to the retailer is to use a multi-channel approach, taking advantage from both online and offline sales network. As for the online channels, our advice is to focus on the two biggest online commerce platforms in Italy, namely Amazon and Ebay, by optimizing the organic search for the mini-arcade game thorough the use of targeted and specific

keywords. For the offline channels, enhancing the customer experience within the physical shop is crucial in order to increase the audience and convert it into actual mini-arcade sales. Furthermore, these two types of channels should not be considered as two different entities from the retailer, but to optimize the sales, their interconnection and complementarity play a crucial role.

11. Limitations. (group part)

The research encountered several limitations that impacted the depth and scope of the study. First, the literature review revealed a paucity of available papers and literature pertaining to the specific niche market under investigation, which hindered comprehensive contextualization within existing scholarly discourse. Additionally, the sample sizes for both the conjoint analysis (35 respondents) and the perceptual map (42 respondents) were relatively small. This limitation stemmed from technical constraints encountered with the Conjointly software, which lacked adequate mobile compatibility, necessitating the administration of the questionnaire via laptops in-store. Furthermore, a significant challenge emerged regarding willingness to pay, particularly concerning the identified target demographic of children aged 5 to 10. Their propensity for impulse buying, coupled with a limited understanding of purchase costs, complicated the assessment of parental willingness to pay, so the final users (children) is different from the client (parents), their decisions were heavily influenced by their children's desires. Conversely, the segment comprising individuals aged 12 to 99 presented a more straightforward assessment of willingness to pay, as they were the final users of the product. These limitations underscore the need for cautious interpretation of the study's findings and highlight avenues for future research to address these constraints and enhance the robustness of the investigation. This thesis explores a notable limitation inherent in the research methodology, particularly regarding the software utilized for conjoint analysis. One significant constraint arises from the inability to ascertain brand relevance comprehensively. Despite employing a brand-centric conjoint analysis, which yielded valuable insights, the primary challenge lies in the inability to discern the relative importance of each brand. The software's mechanism primarily links continuous variables, such as individual brands, thereby

hindering a nuanced understanding of their comparative significance within the analysis framework.

Regarding the perceptual map, one of our limitations is our departure from Kaiser's rule in principal component analysis. Although Kaiser's rule typically advises retaining components with eigenvalues greater than 1, the eigenvalue of the second dimension fell below 1 (approximately 0.8) according to the Scree plot derived from our survey data. We chose to prioritize interpretability over strict adherence to Kaiser's Rule. We acknowledged a trade-off between interpretability and information loss.

Another limitation of our perceptual map research is that Component 2 appears to be related to customer-perceived value rather than the customer experience. This suggests that the value attributed to the brand extends beyond the product experience to factors such as content marketing, viral campaigns, or social responsibility initiatives (e.g., environmental conservation or human rights advocacy). However, it should be noted that there are various ways in which a brand can create value, and further investigation is required to understand how the mini-arcade company generates value beyond the customer experience in the Italian market. For analytical simplicity, we have chosen to associate the enhancement of brand value with the brand's content marketing efforts.