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# **Table of Contents**

## **Chapter 1**

<i>1 Introduction</i>	<i>6</i>
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## **Chapter 2**

<i>2 Understanding violence against women through data analysis</i>	<i>8</i>
<i>2.1 Data Analysis of women victims of violence</i>	<i>8</i>

## **Chapter 3**

<i>3 Literature review</i>	<i>14</i>
<i>3.1 Exploring Non-Fungible Token (NFT) and their impact</i>	<i>14</i>
<i>3.2 NFT and Trends: An overview of usage in business</i>	<i>15</i>
<i>3.2.1 Technical components of NFT</i>	<i>17</i>
<i>3.2.2 Protocols</i>	<i>17</i>
<i>3.2.3 Properties</i>	<i>19</i>
<i>3.3 Main uses of NFT technology</i>	<i>20</i>
<i>3.4 Advantages and Disadvantages of NFT</i>	<i>20</i>
<i>3.5 The impact of NFT on the business</i>	<i>21</i>
<i>3.6 Influence of NFT's on entrepreneurship</i>	<i>25</i>
<i>3.6.1 NFT's: Unleashing novel business models</i>	<i>25</i>

<i>3.6.2 Entrepreneurial opportunities and challenges</i>	26
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## **Chapter 4**

<i>4 Startup idea to solve the problem</i>	27
<i>4.1 Mission of the startup</i>	27
<i>4.2 Business model</i>	28
<i>4.3 Communication and involvement</i>	29

## **Chapter 5**

<i>5 Exploring the startup and its surrounding ecosystem through the Pie Model</i>	30
<i>5.1 The emergency of innovation ecosystem</i>	30
<i>5.2 The ecosystem Pie Model</i>	31

## **Chapter 6**

<i>6 Economic factors and reporting behavior: Insights from logistic regression analysis</i>	37
<i>6.1 Feature Importance</i>	37
<i>6.2 After Funding Perspective</i>	37
<i>6.3 Feature Importance Analysis</i>	37
<i>6.4 Key Finding: The Impact of Income</i>	38

<i>6.5 The Hypothesis: Increasing Reporting Behavior</i>	39
<i>6.6 Conclusion and Implications</i>	40
<i>7 Conclusion</i>	41
<i>8 Summary</i>	43
<i>9 Bibliography</i>	45
<i>10 Sitography</i>	47



## **1. INTRODUCTION**

Violence against women is a pervasive and urgent issue affecting societies worldwide. In this thesis, I delve into this problem, with a specific focus on Italy, emphasizing the importance of data analysis in gaining insights into the nature and scope of this problem, which, in turn, can guide solutions and policies to combat it.

This thesis introduces a startup that aims to confront gender-based violence, explaining the startup's mission and how it operates. It combines, in fact, elements of luxury fashion, art, and blockchain technology to create a social change. By collaborating with luxury fashion brands and acclaimed artists, the startup uses NFT (Non-Fungible Token) collections to raise funds dedicated to covering the legal expenses of women who have experienced violence.

The third chapter provides an review of the literature on Non-Fungible Tokens (NFTs) and their impact across various fields. Starting with the basics of NFT technology and its historical context, the chapter explores the many applications of NFTs. It discusses its pros and cons and how they are disrupting various industries, including their influence on business models and entrepreneurship.

The following chapters analyse the startup in the broader context of innovation ecosystems. By using a Model, I analysed the role of the startup within the ecosystem, examining how the startup collaborates with luxury fashion houses, artists and legal aid organisations.

In the final chapter of this thesis, an empirical analysis is presented in order to show the relationship between economic factors and women's decisions to report incidents of violence. This exploration is based on selected dataset from the Italian National Institute of Statistics (ISTAT) and employs logistic regression analysis.

The analysis encompasses feature importance analysis, which dissects the influence of various factors, such as income, age, and the presence of children, on the decision to report violence. The findings underline the paramount role of income in shaping women's reporting behavior. Women with lower incomes are notably less likely to report incidents of violence, largely due to the daunting financial burdens associated with the legal process.

This revelation underscores the intricate link between economic stability and reporting behavior and highlights how socio-economic factors can significantly hinder women's access to justice and support in the face of violence. This insight supports the startup idea, which aims to fund legal support for women through the sale of NFTs.

The startup idea is based on this assumption that allocating support in an indirectly proportional manner with respect to income could lead to a more equitable distribution of resources. Preliminary estimates indicate that this approach may increase reporting behavior among women offering a tangible solution to mitigate the financial barriers that often deter them from seeking justice.

By addressing the financial obstacles that hinder women from reporting violence, this initiative takes a proactive stance in empowering women to assert their rights effectively.



## **2. UNDERSTANDING VIOLENCE AGAINST WOMEN**

Violence against women is a deeply concerning issue that demands our attention. In this chapter, I explore key sources that shed light on the extent and nature of violence against women, particularly in Italy, using data analysis as a tool for gaining insights.

The Italian National Institute of Statistics (ISTAT) offers important statistical data that serves as the bedrock for understanding violence against women in Italy. "La sicurezza delle donne" survey, provides comprehensive insights into the prevalence and characteristics of violence against women forming the essential groundwork for further research and policy development.

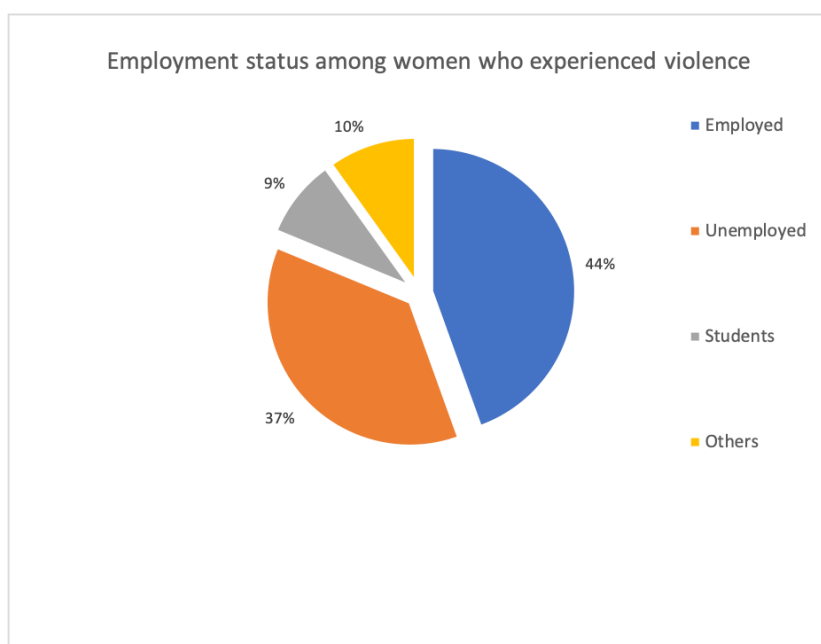
Going beyond statistics, Altalex (2023) dives into the complex issue of why some women may hesitate to report violence. It explores the influence of various socioeconomic factors on women's decision-making in reporting abuse. This research highlights the intricate interplay between economic status and women's ability to seek help and justice, enriching our understanding of the issue.

### **2.1 Women victims of violence: the problems that arise**

Violence is a serious issue affecting women globally, causing harm that goes beyond physical pain. In Italy, like in many other places, violence remains a concern. This chapter delves into the connection between whether women work and their experiences of violence in Italy, using real data.

I gathered data from ISTAT about violence against women. This data includes information from Italian women who reported facing violence during the 2022. The survey conducted by ISTAT asked about their jobs, demographic details, and the violence they experienced.

Chart in the figure 1.1 displays the relationship between employment status among women who experienced violence.

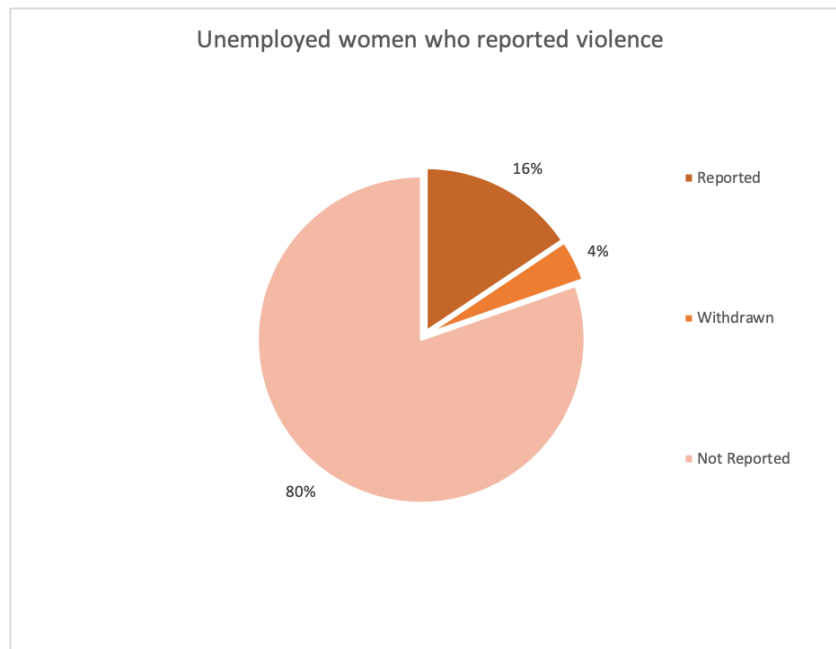


*Figure 1.1: Employment status among woman who experienced violence.*

Looking at the numbers, we can see how women's employment status correlates with their experiences of violence in Italy. From the sample taken into consideration of 9.672 women:

- 4.304 were employes;
- 3.553 were unemployed;
- 858 were students.

Moreover, women's job situations could influence their likelihood to seek help when facing violence. Here's what we found considering the victims who call 1522 (anti-violence and stalking number):



*Figure 1.2: Unemployed women who reported violence.*

Among the sample of the unemployed women (3.553), only 554 sought help reporting the violence. This suggests that employed women were more likely to seek help when dealing with violence compared to those who were unemployed or not part of the workforce.

The analyzed data suggests a connection between employment status and violence among women in Italy. A significant number of women who experienced violence were not working. This might indicate that economic dependence could contribute to their vulnerability. Furthermore, these findings imply that employed women are more inclined to seek help. Making a comparison of the relative incomes of women and men in Italy, we can see that in all Italian regions, there is a clear difference between the two genders taken into consideration.

In all cases more than 60% of the household income is supported by men.

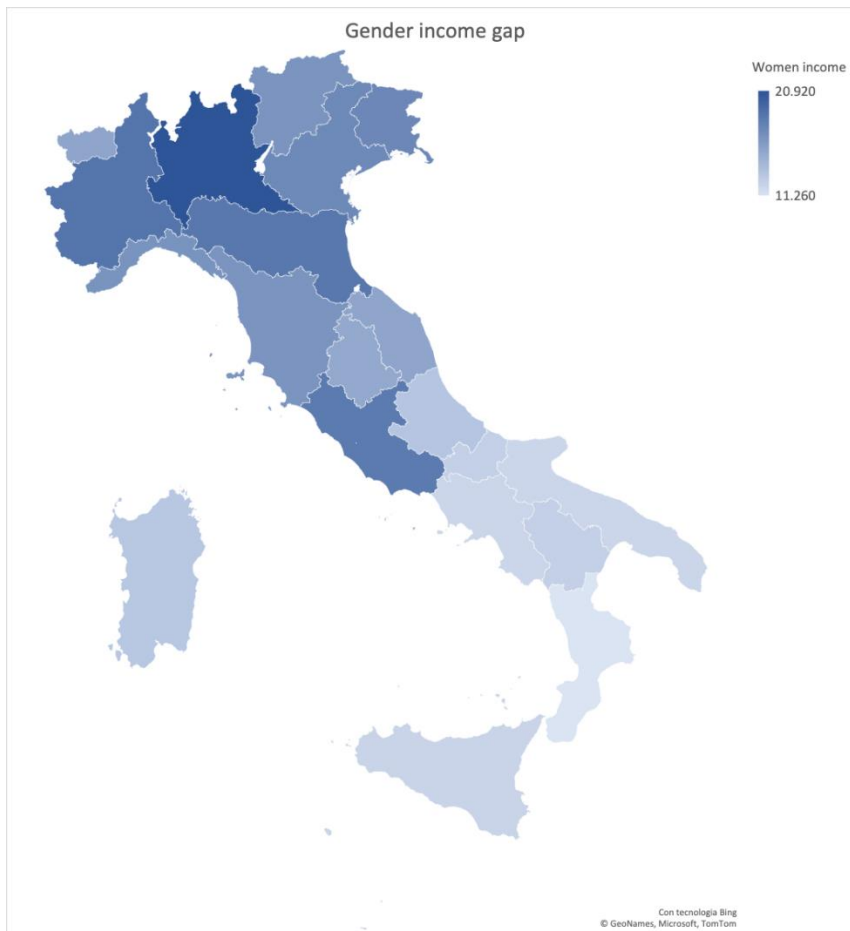


Figure 3: Gender income gap.

In addition, performing an analysis concerning the family situation of the victims, it turns out that 58% of them have children, of whom 50% are minors.

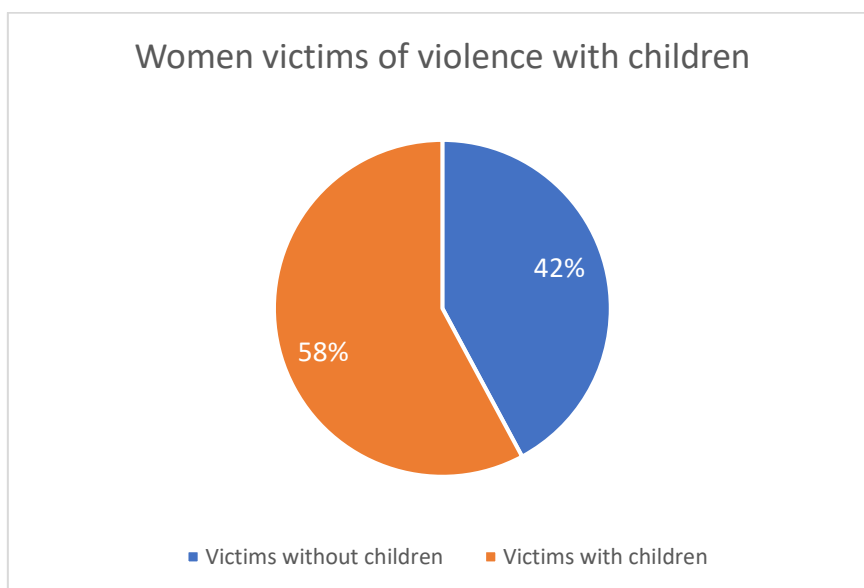


Figure 4: Women victims of violence with children.

Combining these two analyses together, we can deduce that one of the reasons why women victims of violence are reluctant to report violence is the lack of funds to enable them to completely break away from their violent situation, to be able to support their children, and to be able to protect themselves.

Reports and studies have unveiled a distressing reality of violence against women in Italy. These studies, such as some Istat Reports (Istat, 2008), have brought to the forefront the fact that a considerable number of women endure physical, sexual, or psychological abuse. This highlights the urgency of addressing this issue both socially and legally.

Italy has taken steps to address violence against women through legal frameworks that enable victims to report incidents and pursue legal action against the perpetrators. However, the journey through the legal system can be financially overwhelming. Women who wish to report their cases and seek justice are often faced with substantial costs associated with legal proceedings.

For women who are already dealing with the trauma of violence, the additional burden of legal fees can be debilitating. These expenses encompass lawyer fees, court charges, and other costs tied to legal processes. In many instances, these financial barriers discourage victims from seeking the justice they rightfully deserve.

According to the report of D.i.Re – Donne in Rete contro la violenza (2022), (an association that brings together more than 109 anti-violence centers throughout Italy), a significant percentage of female victims are hesitant to pursue legal action due to financial constraints. In fact, one in three women who turn to them is on zero income (32.9%) and less than 40% can count on a secure income.

The inability to access justice due to financial limitations sets off a disturbing chain reaction. Perpetrators are emboldened by the knowledge that their victims are unlikely to overcome the financial obstacle to initiate legal proceedings. This, in turn, can lead to a vicious cycle of repeated offenses, fueled by a sense of impunity.

While Italy does provide certain support services for violence victims, these often fall short in addressing the financial aspect comprehensively. Shelters and counseling services undoubtedly play a crucial role, yet they do not directly tackle the issue of legal costs.

One potential solution for this problem, could be the establishment of a dedicated fund aimed at covering the legal expenses of violence victims. Moreover, expanding pro bono legal services could ensure that no victim is deprived of justice due to financial limitations.

In the end, therefore, we can say that the convergence of violence against women and the financial barrier presented by legal fees is a pressing issue that demands immediate attention in Italy. By grasping the challenges faced by female victims, society, lawmakers, and organizations can collaborate to ensure that financial constraints no longer obstruct the path to justice. Only by dismantling this barrier can Italy take a substantial stride forward in its battle against violence targeting women.

This economically precarious situation as we have seen through the data shown, afflicts a large part of the women in Italy, who even though in the case of denunciation they are supported and protected in various aspects of their lives, they are not supported in any way to face what are legal expenses that can guarantee their freedom.

### **3. LITERATURE REVIEW**

#### **3.1 Exploring Non-Fungible Tokens (NFTs) and their impact**

Non-Fungible Tokens (NFTs) have recently burst onto the scene, offering novel opportunities in digital art, collectibles, and digital security.

To comprehend the essence of NFTs, it's essential to start with the foundation: blockchain technology. Mohanta et al. (2018) overview of smart contracts, a key component of blockchain, lays the groundwork for understanding how NFTs function, especially in the context of digital art and collectibles.

Nakamoto's groundbreaking paper, "Bitcoin: A peer-to-peer electronic cash system" (2008), introduced blockchain technology, which ultimately paved the way for NFTs. While Bitcoin is primarily a digital currency, the principles outlined in this paper underpin the development of NFTs.

Niranjanamurthy et al. (2019) analyze blockchain technology, discussing its advantages, drawbacks, and SWOT analysis. This understanding of blockchain's broader context is vital for grasping the environment in which NFTs operate. Moreover Ojha et al.(2021) work offers a theoretical perspective on NFTs as new financial and digital security instruments. This research unveils the potential financial and security implications of NFTs, contributing to a holistic understanding of their applications.

In the realm of digital art, Franceschet et al. (2021) explore crypto art's decentralized nature, closely linked to NFTs. This exploration is essential for understanding NFTs' role in the broader digital art market.

Kastrenakes (2021), instead, discusses significant NFT sales and their broader implications, providing insights into the economic and cultural dimensions of NFTs.

Looking ahead, Treiblmaier's (2023) exploration of tokens beyond blockchain paints a picture of the "internet of value" and offers context for understanding NFTs as a unique type of digital token.

Recent news, such as "Nike leads other brands in revenues from NFTs," underscores the growing commercial interest in NFTs and their integration into major brands' strategies. Kaczynski and Kominers (2021) delve into how NFTs create value, shedding light on the economic reasons behind NFT ownership and trading.

While not directly linked to NFTs, Balachander and Ghose's (2003) research on the spillover effects of brand extensions provides a framework for understanding how NFTs can influence the value and reputation of associated brands.

Lastly, Desmichel et al. (2023) research on Non-Fungible Tokens (NFTs) may reveal valuable insights into the utility and significance of NFTs across various industries.

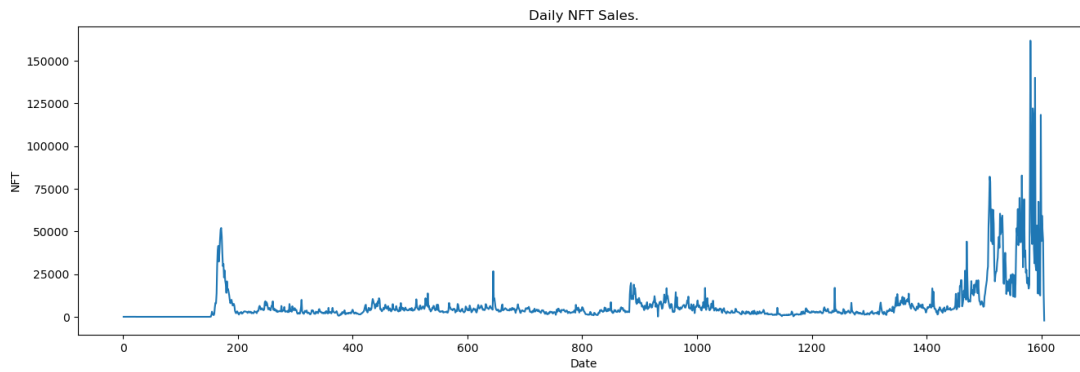
This literature review provides a comprehensive overview of the essential sources used in this thesis. These sources provide valuable insights into the topics addressed and lay the foundation for further research and analysis.

### ***3.2 NFT and trends: an overview of its usage in Business***

Non-Fungible Tokens (NFTs) have gained significant attention in recent years, revolutionizing the way we perceive digital assets. NFTs are unique digital tokens that use blockchain technology to authenticate and verify ownership of digital assets such as art, music, videos, luxury, and virtual real estate. This chapter aims to explore the impact of NFTs on the business world, providing valuable insights into the trends and opportunities that arise from this emerging technology.

NFTs, or non-fungible tokens, are unique identifiers saved on the blockchain that cannot be replicated or divided. They mainly serve to guarantee the originality and ownership of a digital object. Between 2020 and 2021, the NFT sector grew exponentially, with a market value increase of 21,000%, equivalent to 17 billion dollars (CNBC, 2022).





*Figure 5: Daily NFT Sales from 2017 to 2021.*

However, this rapid growth led to a speculative bubble, resulting in losses for investors. Speculative bubbles are not rare in the world of cryptocurrencies and NFTs, especially because there is no central regulatory entity, causing huge price fluctuations. An example is the Terra cryptocurrency, which lost almost its entire value in one week. Finally, the lack of NFT market regulation in some cases also results in unfair market practices, for which investors bear the consequences, often finding themselves empty-handed.

Having outlined the market and the figures it has developed in recent years, let's define what NFTs are. NFTs are digital agreements that certify the origin or ownership of an object, and thanks to blockchain technology, they offer this certification securely and irreversibly (Mohanta et al, 2018). Ethereum is the blockchain most associated with NFTs given its popularity and predisposition for such initiatives. However, NFT projects can also be implemented on other blockchains like Solana and Cardano. For NFTs to operate correctly, as outlined in the following chapter, they require specific technical specifications, protocols, and features.

### **3.2.1 Technical Components of an NFT**

NFTs are based on several technical components (Mohanta et al, 2018):

- **Blockchain:** it is fundamental for NFTs, from which properties such as security and decentralization derive.
- **Smart Contracts:** they are protocols that automate, verify, or execute digital contracts (Szabo, 2018). Because they leverage the blockchain and are based on complex issues, they do not require an external entity for verification, making the NFT fully decentralized.
- **Addresses and Transactions:** the buying and selling of NFTs work similarly to that of cryptocurrencies since both use blockchain. Each transaction is recorded in a block, which is then added to the chain. These transactions include the wallet addresses of the involved parties.
- **Data Encoding:** the blockchain only accepts data in certain formats. For instance, for Bitcoin and Ethereum, data is converted into hexadecimal. Usually, what is recorded on the blockchain is not the object itself but an identifier in the appropriate format. This means that although anyone can have a copy of an object, only the one with the NFT has the actual rights to it, verifiable thanks to the blockchain's ledger (Mohanta et al, 2018).

### **3.2.2 Protocols**

For the entire NFT ecosystem to operate correctly, as previously mentioned, it is essential to have a ledger that stores all data and standard methods to generate tokens. There are two main methods for releasing new tokens, and from the blockchain's perspective, both lead to the same result:

- **Top to Bottom;**
- **Bottom to Top.**

In the top-to-bottom method, two protagonists are involved: the owner of the NFT and the buyer of the NFT. The essential steps of this procedure are:

- **Digitalization of the NFT:** The owner of the NFT verifies the authenticity of the file, title, and description. After verification, they convert the NFT into the required format.
- **Storing the NFT:** The owner stores the original information in a database outside the blockchain. Even if they have the option to store data directly on the blockchain, this option is often avoided due to the high associated costs.
- **NFT Signature:** The owner of the NFT authenticates the transaction, containing the NFT's hash, and then transmits this data to a smart contract.
- **Creation and Trading of the NFT (NFT Mint and Trade):** After receiving the data, the smart contract initiates the "minting" (creation) and trading process. This phase involves verifying the provided information through the smart contract and then inserting the data into the blockchain.
- **NFT Confirmation:** Upon completing the above step, the information is recorded on the blockchain. This permanently binds the NFT to its owner, who can then sell or trade the NFT to another buyer, triggering the cycle described again.

Beyond the Top to Bottom method, we also have the Bottom to Top in which the main actors are the token producer and the token buyer.

The steps for the bottom-to-top method are divided into:

- **Model Creation:** Whoever creates the NFT establishes a model using the smart contract.
- **NFT Customization:** At the time of purchase, the buyer has the option to customize the NFT with details randomly selected from a database prepared by the creator. This feature is especially common in NFTs related to video games, where a player may choose to modify their character or avatar.
- **NFT Creation and Trade (NFT Mint and Trade):** This phase is activated when an NFT is bought, as previously described. (The process is equivalent to the one used in the Top to Bottom method)

- **NFT Confirmation:** Once all checks are completed, the transaction is recorded, and the NFT is associated with the owner.

Through the analysis of both protocols, we can highlight that all operations related to an NFT are stored in a smart contract and then recorded on the blockchain. However, blocks have a finite capacity. When a block fills up, the information cannot be deleted to make room for new transactions. To overcome this, it is necessary to create a new block, which will be directly linked to the previous one.

### ***3.2.3 Properties***

For NFT technology in order to operate correctly, it is essential that it possesses some key features, one of which is the verifiability that implies that the ownership and details of an NFT are easily checkable by anyone, making such information public, but always protecting user privacy thanks to the features of the blockchain, so only the user's wallet address will be visible. Another important theme in terms of ownership is availability, which ensures that the NFT system is always active and operational, and this is possible thanks to its decentralized nature, ensuring that NFTs can be purchased or sold at any time. Finally, we find resistance to manipulation, usability, and tradability:

With resistance, every user has the guarantee that through blockchain technology the information in the NFT cannot be modified or altered. With usability, it ensures that every NFT always has the most updated information on its ownership, simplifying the verification of transactions and facilitating buyers in their decisions. Finally, tradability allows each NFT, and any product associated with it, to be freely sold by the owner.

### ***3.3 Main uses of NFT technology***

In the emerging NFT landscape, there are two key figures: the creator and the buyer. Initially, the creator establishes an NFT model through a smart contract, and during purchase, the buyer can choose to customize it with unique details selected from a database prepared by the creator. Once the operation is concluded, a process of creating and exchanging the NFT is initiated, ending in the addition of details to the NFT on the blockchain. NFT technology is finding applications in various fields: in art, allowing artists to earn not only from the initial sale but also from subsequent resales thanks to commissions; in the tokenization of real objects, offering exclusive experiences; in gaming, facilitating the exchange of objects and increasing security against scams; in events, both virtual and physical, decentralizing ticket sales and combating ticket scalping; and in the metaverse, allowing unique customization of virtual spaces and avatars. In the metaverse, in fact, NFTs can represent land, art, music, and much more, ensuring that each element is unique and belongs to only one owner.

### ***3.4 Advantages and disadvantages of NFTs***

After exploring NFTs and their applications, we can highlight the advantages and disadvantages of this technology (Niranjanamurthy et al, 2019).

Main advantages are:

- **Decentralization:** As previously mentioned, thanks to the blockchain, NFTs operate without intermediaries, making buying and selling processes smoother.
- **Transparency:** Anyone can access information about an NFT, obtaining details like ownership and transaction history.
- **Copyright Protection:** NFTs protect digital creators, ensuring they are compensated for their work through royalties or direct sales.
- **Applications in the Metaverse:** NFTs allow deep customization in virtual environments, with unique and distinctive elements.

- **Versatility:** They can be integrated into any exchange of digital goods, bringing the benefits of security and decentralization.
- **Opportunities for Artists:** Digital artists can earn recognition and remuneration for their work through the NFT market.

Main disadvantages are:

- **Environmental Impact:** NFTs require a lot of energy, with a single transaction consuming the energy equivalent of a house in a day.
- **Scams:** As with cryptocurrencies, the popularity of NFTs has attracted many scammers, and the lack of market regulation further accentuates this phenomenon.
- **Loss of Goods:** Losing private keys results in the irrecoverable loss of associated NFTs.
- **Privacy Issues:** If an identity is associated with a wallet address, privacy can be compromised.

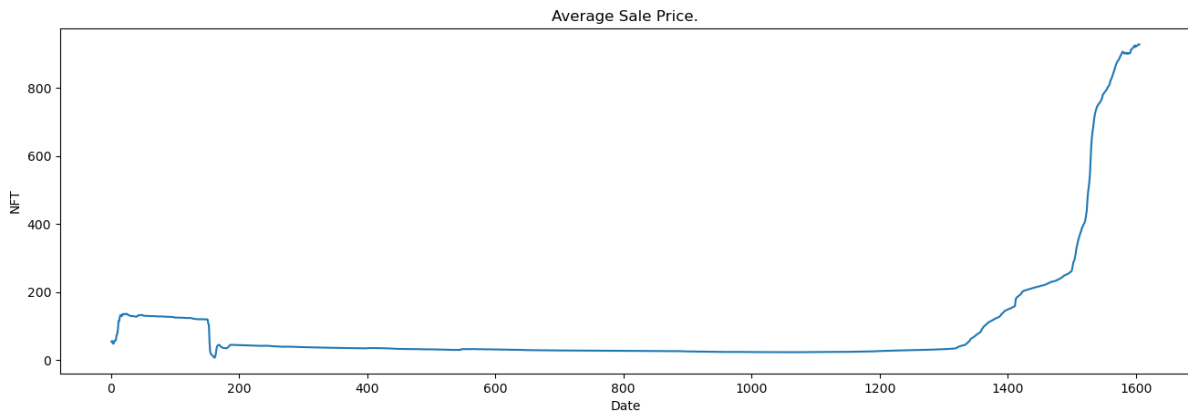
### ***3.5 The impact of NFTs on the business world***

Originally NFT are stemming from the realms of crypto arts and gaming communities, presenting transformative opportunities for artists and creators, even setting a record with the sale of a digital painting NFT for a staggering \$69 million (Kastrenakes, 2021).

NFT marketplaces play a pivotal role in connecting all stakeholders – sellers, buyers, investors, creators, engineers, and organizers, within a global virtual market. This convergence facilitates the expansion of NFTE supply, demand, and resources (Monaghan et al, 2020).

NFT marketplaces, like OpenSea for art and Audius for music, empower ventures to discover worldwide opportunities and establish themselves as virtual entities relatively swiftly. The reduced barriers to creating NFTs, owing to accessible generative software and design tools, contribute to a surge in virtual entrepreneurship.

The chart in the figure below shows the relationship between the increase of the average NFT price and the average of the days on which NFTs were sold at that price.

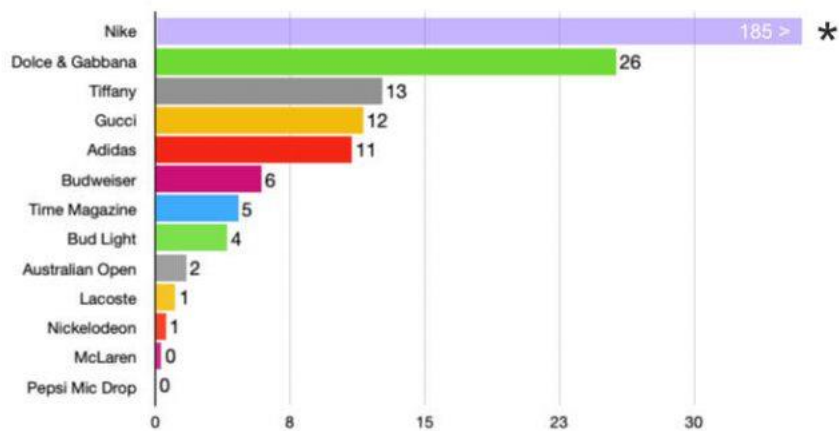


*Figure 6: Average Sales Price from 2017 to 2021.*

As we can see, the trend shown in the chart demonstrates an increasing curve over time. This means the strong rising trend and success in the NFT market during the last few years.

NFTs can also become something like unique parts of a brand's identity, almost like new products. For example, they can have a big role in the whole marketing process. When a brand comes up with its own NFT, it can make more people know about the brand and attract folks who might not have paid attention before, like the younger Gen-Z crowd. For instance, Anheuser-Busch did this, creating a bunch of NFT collections and making them a big deal with cool events like music concerts and giveaways sponsored by tech companies (Treiblmaier, 2023). This not only gets people interested but also opens up chances to sell different things together. An example are the cases about digital fashion brands like Nike and Adidas, that have sold virtual and real versions of their stuff as NFTs, making people feel even more connected to a brand because they own something special like a logo or design.

### Brand revenues from NFTs (\$ millions)



Only includes Ethereum NFTs

\* Nike includes CloneX acquired with RTFKT, Nike not to scale

Source: Dune Analytics / kingjames23

Figure 7: Brand revenues from NFTs (\$ millions), source: Ledger Insight (2022)

Moreover, NFTs can help build a community around a brand. Back when websites changed how we buy things and social media let us talk with companies, NFTs could be the next step, creating a new kind of community where people and the brand can interact. It's like the third wave of shopping, all thanks to the magic of online brand communities (Kaczynski et al, 2021)

Going more specifically into the world of fashion and luxury, NFTs are becoming highly sought after. For instance, Gucci's digital handbag or Nike's digital shoes are examples of how people see value in these virtual objects. This also changes the way consumers think about what to buy, similar to decisions in a constantly changing stock market (Balachander et al, 2003).

NFTs are revolutionizing how we interact digitally. This gives luxury fashion brands the opportunity to create products that people desire not only for their aesthetics but also as an investment. With new technologies, like blockchain, transactions between clients become more straightforward and direct.



Morgan Stanley's research from last year gave us a hint about this booming trend. They predicted that by 2030, the luxury sector could see 10% of its market coming from the metaverse and NFTs with a potential €50 billion in business (Desmichel et al, 2023). Brands make money from NFTs through two main avenues: the first sale, which usually benefits the brand directly, and then royalties from any subsequent sales. Moreover, people seek luxury brands for what they represent, such as quality or exclusivity, but they are often also attracted to the social value of these brands that remains significant as in this case.

Thanks to the intersection of NFTs and luxury goods, multiple paths for the future have opened up. The first is the complete transformation of artworks or high-fashion items into financial assets, whereby the buyer would effectively become a bona fide financial investor. With this solution, fashion houses and auction firms could accelerate the circulation process of their products, eliminating authentication and shipping times, thanks to blockchain technology. Lastly, another potential scenario could be dealers evolving into actual financial intermediaries. In this manner, they would offer services like financial leverage, the ability to short sell items expected to decline in value, or the option to seek loans using the NFTs in one's wallet as collateral.

In summary, NFTs represent a groundbreaking innovation with far-reaching implications for the business world, forging new opportunities and reshaping the way we perceive and interact with digital assets. This transformative technology is poised to continue evolving, offering brands and creators the chance to thrive in an ever-expanding virtual landscape.

### ***3.6 The influence of NFTs on entrepreneurship and new Business Models***

The digital age has transformed the way businesses operate and opened up exciting prospects for entrepreneurs. Among the latest innovations in this digital landscape are Non-Fungible Tokens (NFTs), which have been making waves by changing the game for traditional business models and offering fresh entrepreneurial opportunities. In this section, we'll dive into recent research to understand how NFTs are shaking up the business world and creating new pathways for entrepreneurs.

#### ***3.6.1 NFTs: Unleashing Novel Business Models***

Chohan and Paschen (2023) have shone a spotlight on how NFTs are becoming a valuable tool in marketing. Imagine using unique digital tokens as part of advertising campaigns. NFTs provide a fresh and creative way for marketers to connect with their audiences, moreover, they can be used as special collectibles, exclusive access passes, or even as promotional items. For entrepreneurs, this means a chance to stand out and engage with customers in innovative ways.

Kaczynski and Kominers (2021) dig into how NFTs create value. Their research emphasizes that the limited supply, proof of ownership, and authenticity of NFTs drive demand. Entrepreneurs can leverage these traits to create and sell unique digital assets, from digital artwork to virtual properties. This idea of digital ownership is creating new opportunities for entrepreneurs to get into the business of curating, minting, and trading NFTs. What's more, the resale market for NFTs allows entrepreneurs to earn commissions, enriching the ecosystem further.

Yilmaz et al. (2023) delve into what makes NFTs valuable to consumers. They've found that exclusivity, usefulness, and emotional connections are key factors. Entrepreneurs can tap into these by offering NFTs that provide unique experiences, exclusive content, or foster a sense of community. So, knowing what motivates consumers to buy and hold NFTs can guide entrepreneurial strategies in creating and marketing NFT-based products and services.

### ***3.6.2 Entrepreneurial Opportunities and Challenges***

Chandra (2022) introduces a handy framework for entrepreneurs venturing into the world of NFTs. This framework breaks down the NFT journey into stages, from creation and minting to trading and resale. It's like a roadmap for entrepreneurs to identify opportunities at each step and navigate the ever-evolving NFT landscape. It also emphasizes the importance of understanding the legal and regulatory aspects of NFTs, as well as building strategic partnerships and engaging with the community. we can therefore state, that

NFTs are a game-changer in the digital era, offering fresh business models and entrepreneurial opportunities. NFT marketing, the creation of value through rarity and ownership, and understanding what consumers want are all part of the entrepreneurial landscape. By staying informed and adopting a strategic approach, entrepreneurs can harness NFTs to drive innovation and reshape the business landscape.

As NFT ecosystems continue to evolve, forward-thinking entrepreneurs who embrace this transformative technology have a chance to pioneer innovative solutions and stay ahead of the curve.

#### **4. EXPOSITION OF THE SOLUTION BY SHOWING AND EXPLAINING THE STARTUP AND HOW IT WORKS.**

As already seen in the first chapter of this thesis, in a world where gender-based violence remains a pervasive problem, many women who suffer violence face a number of challenges to obtain justice and break free from the chains of violence. Lack of financial resources to meet legal costs is a significant obstacle for many of these women, which often leads to situations of helplessness and resignation. However, a ray of hope for combating gender-based violence might just be the innovation and solidarity embodied in the HerJustice startup. This chapter is going to explore in depth the mission, the business model, and the potential impact of how an innovative start-up such as the one that is going to be described could be a game-changer.

##### **4.1 Mission of the start-up**

The mission of HerJustice is deeply based on the goal of providing financial support to women victims of violence. The key to achieving this goal is the collaboration with luxury fashion brands and prestigious artists specialized in the creation of NFT. These partners share the vision in using digital art and luxury fashion as a means to raise funds that will be fully allocated to support the legal expenses of women victims of violence.

We can divide the goals of this startup into three basic pillars:

- **Art and Luxury Fashion as Tools of Change:** The startup is committed to collaborate with luxury fashion brands and world famous artists to create exclusive NFT collections. These NFTs include digital artworks, virtual couture clothing and other virtual luxury objects. The goal is to turn art and fashion into tools for social change, combining creativity with social engagement.
- **Support Legal Expenses:** As shown in the second chapter of this thesis, the sale of these valuable NFTs generates significant revenue, and what makes this start-up extraordinary is the fact that every single euro raised is donated in full to women victims of violence to cover their legal expenses. This is crucial,

because, as mentioned above, victims are often in a precarious financial situation and access to justice is a fundamental right that should not depend on one's own financial resources.

- **Transparency and Sustainability:** The startup is committed to maintaining a comprehensive public record of donations received, funds spent and cases supported. This commitment to transparency ensures that every single contributor can directly see how their contribution is making a difference. The long-term sustainability of the initiative is ensured through a variety of funding sources, including transaction fees, sponsorships, direct donations and strategic partnerships, discussed in more detail in the business model.

## ***4.2 Business Model***

The business model is based on a number of strategic pillars:

1. **Collaborations with Luxury Brands:** Strategic partnerships with luxury fashion brands and world famous artists. These collaborations lead to the creation of unique and valuable NFT collections, transforming digital art and luxury fashion into vehicles for social change. Collaborations with the startup, will represent a great added value for the companies involved, as the support of such an honorable and contemporary cause, will allow them to have a greater visibility in the market, such as to generate larger volumes of business.
2. **Auctions and Sale of NFTs:** Put NFTs up for sale through online auctions or market launches through specialised platforms, involving art lovers, collectors and supporters of the cause, thus creating a constant revenue stream to support women victims of violence.
3. **Selection of Beneficiaries:** The identification of women in need of legal assistance is done in close cooperation with organizations specialised in fighting gender-based violence. This partnership ensures that the funds collected are allocated to those most in need, through an analysis of each individual's finances, always respecting their privacy and security.

4. **Financial Sustainability:** The start-up includes multiple sources of funding to ensure long-term sustainability. The start-up itself takes steps to develop a platform, through which, investors will be able to access the purchase of sponsored tokens. Through the purchase by users, a small percentage of the purchase price of NFTs will be used to cover the start-up's current expenses. Other sources of funding, we can define as indirect, because they are the result of donations from supportive individuals and long-term partnerships with luxury brands and artists.

### ***4.3 Communication and Involvement***

HerJustice uses strategic communication to engage the public and promote its mission.

Through an engaging narrative, the startup tells stories of women who have benefited from its support, offering tangible examples of the positive impact of its initiative on the lives of victims. Another tool used by the start-up to promote its campaign is the involvement of celebrities, who, in support of the cause, will contribute significantly to raising awareness and supporting the start-up's mission.

Furthermore, maximum transparency will be ensured by keeping a detailed public record of donations received and funds spent, guaranteeing a high degree of trust on the part of supporters.

By using digital art and luxury fashion as a fundraising lever, the startup will innovatively and effectively address one of the most pressing problems in our society. The mission is a concrete commitment to provide women victims of violence with the financial help they need to obtain justice and rebuild their lives.

## **5. EXPLORING THE STARTUP AND ITS SURROUNDING ECOSYSTEM THROUGH THE PIE MODEL.**

Innovation ecosystems have emerged as a critical framework for understanding and fostering innovation in today's dynamic business environment. This section explores the concept of innovation ecosystems, drawing insights from key scholarly works such as Jacobides, et al. (2018). I used "Ecosystem Pie Model" introduced by Talmar et al.'s (2020) to map the key actors and show their interdependencies. I am going to analyze the theoretical foundations, components, and implications of innovation ecosystems, with a particular focus on the Ecosystem Pie Model's contribution to ecosystem analysis and design.

The concept of innovation ecosystems has gained significant prominence in recent years as organizations seek to navigate the complexities of the digital age and rapidly changing business landscapes. Understanding the dynamics and components of these ecosystems is crucial for organizations aiming to thrive in innovation-driven environments. This part provides insights into innovation ecosystems, with a specific focus on the Ecosystem Pie Model proposed by Talmar et al. (2020) and the foundational work of Jacobides et al. (2018).

### **5.1 The Emergence of Innovation Ecosystems**

In the world of management and business, the term 'ecosystem' is used to describe groups of different but complementary organizations that work together to create something valuable at a system-wide level. This is similar to how natural ecosystems provide services beyond what individual elements can do. The idea of an ecosystem has been applied to various areas like innovation, technology, entrepreneurship, and knowledge, resulting in terms like 'innovation ecosystems,' 'business ecosystems,' and so on.

The concept of ecosystems offers unique insights that other terms like 'industry' or 'network' don't provide. Ecosystems are known for their diversity among participants, their ability to produce valuable outputs as a cohesive unit, the interdependence of those involved, and their non-hierarchical way of governing (Thomas, L. and Autio, E., 2020).

Moreover, in their seminal work, Jacobides et al. (2018) laid the groundwork for the study of innovation ecosystems. They introduced the concept of ecosystems as dynamic, interconnected networks of firms, individuals, and institutions that jointly create and capture value through innovation. This perspective broadened the traditional view of firms as standalone entities and emphasized the importance of collaboration and interdependence in innovation processes. Their work provided a theoretical foundation for understanding ecosystems and paved the way for subsequent research.

## ***5.2 The Ecosystem Pie Model***

Talmar et al. (2020) expanded the ecosystem concept by introducing the Ecosystem Pie Model (EPM). This model provides a structured framework for mapping, analysing, and designing innovation ecosystems. The EPM includes three key components: the focal firm, the ecosystem environment, and the ecosystem network. The focal firm represents the central organization, while the ecosystem environment includes the external factors that influence the ecosystem. The ecosystem network, on the other hand, includes the various actors and stakeholders within the ecosystem.

The focal company, as outlined by the Ecosystem Pie Model, serves as the core of the innovation ecosystem, and represents the organization at the center of the ecosystem, responsible for driving innovation and creating value. In addition, understanding the capabilities, strategies, and positioning of the focal firm is critical to ecosystem analysis, as is collaboration with external partners playing a central role in orchestrating ecosystem activities. The Ecosystem Environment encompasses the external forces and conditions that shape the innovation ecosystem, including regulatory frameworks, market dynamics, technological advancements, and cultural factors. Analysing the Ecosystem Environment provides insights into the contextual factors that influence the ecosystem's evolution and success. The Ecosystem Network represents the network of actors and stakeholders within the ecosystem. Understanding the interrelationships and collaborations among these actors is fundamental for ecosystem analysis, in fact, an effective network management and nurturing relationships are critical for ecosystem growth and sustainability.



The Ecosystem Pie model, along with the seminal work of Jacobides et al. (2018), has profound implications for research and practice. It emphasizes the importance of adopting an ecosystem perspective in understanding innovation processes. Organizations can use the EPM to assess their current positioning in the ecosystem, identify potential partners, and design strategies for ecosystem development.

In addition, understanding the implications of ecosystems for different industries and sectors remains a promising avenue of research.

Therefore, the innovation ecosystem concept has become indispensable in the context of today's rapidly changing business environment. The Ecosystem Pie model, proposed by Talmar et al. (2020), provides a valuable framework for mapping, analyzing and designing innovation ecosystems. This model, along with the work of Jacobides et al. (2018), enriches our understanding of how organizations can thrive through collaboration, interdependence, and value creation within innovation ecosystems.

In today's ever-evolving business landscape, startups are breaking new ground with innovative ideas that not only drive profits but also address important social issues. In this context, we explore the ecosystem of the startup described in the previous chapter, using the Pie Model.

This startup is on a mission that goes beyond typical business goals. It combines luxury fashion, art, and blockchain to create a positive impact on society. At its core, this ecosystem revolves around selling exclusive NFT collections designed by artists and sold by luxury fashion brands.

The driving force behind this startup is a commitment to helping women who have experienced violence, using a significant percentage of the proceeds from these NFT collections to covering the legal costs of women who are victims of violence. Luxury brands that participate gain value by supporting this noble cause, while the women in need receive the financial support necessary to seek justice.

In order to understand this ecosystem better, we're using the EPM, a tool that helps us map, design, and analyze innovation ecosystems. Through the EPM, as described before, the aim is

to provide a visual representation of how each participant in this ecosystem contributes to the overall value proposition.

Through the EPM is possible to analyze the relationships between actors, examine their contributions, resources, activities, how they benefit, and their reliance on the ecosystem's value proposition. Moreover, is also possible to assess the risks that could affect the success of this startup.

Below the mapping of the ecosystem according to the described EPM model:

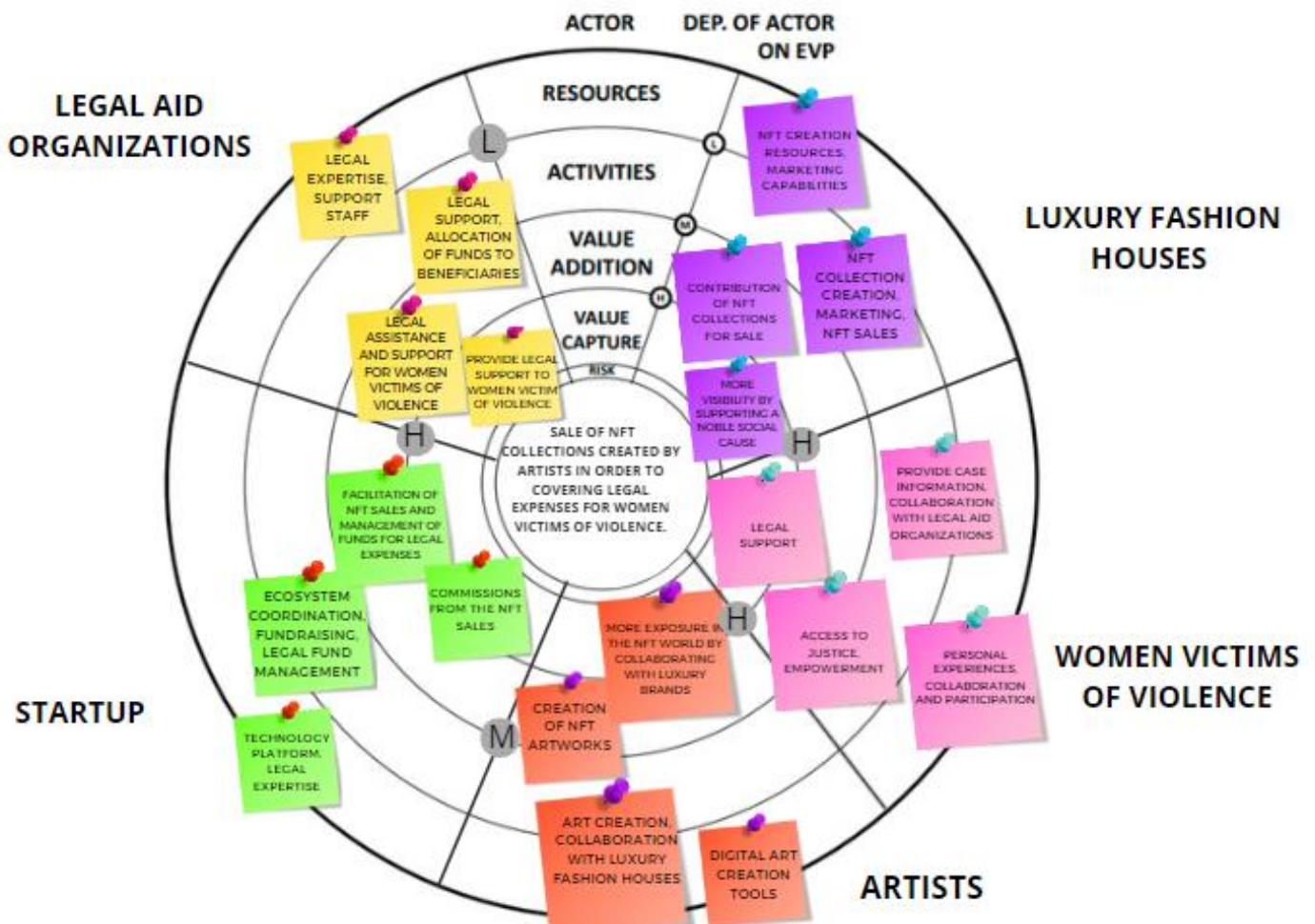


Figure 8: Ecosystem Pie model.

At the center of the Ecosystem, we can find the **Ecosystem's Value Proposition (EVP)** which is the core offering of the ecosystem, represented by the sale of NFT collections created by

artists and sold by luxury fashion houses, and as mentioned before, the proceeds from these sales are dedicated to covering legal expenses for women victims of violence.

The **Actors** involved are:

1. **Luxury Fashion Houses:** These brands create and sell NFT collections, contributing value to the ecosystem by providing NFT assets;
2. **Artists:** Artists are responsible for creating the NFT artworks that are sold by the luxury fashion houses;
3. **Startup:** The central entity responsible for coordinating the ecosystem and facilitating the sale of NFT collections. The startup also manages the funds for legal expenses;
4. **Legal Aid Organizations:** Organizations specializing in providing legal assistance to women victims of violence. They are essential for ensuring that the funds raised are appropriately allocated;
5. **Women Victims of Violence:** They are crucial actor in the ecosystem. Their role is central to the ecosystem's mission, as the entire initiative revolves around providing them with financial support to address legal issues related to their cases.

**Resources:**

- **Luxury Fashion Houses:** NFT creation resources, marketing capabilities;
- **Artists:** Digital art creation tools;
- **Startup:** Technology platform, legal expertise;
- **Legal Aid Organizations:** Legal expertise, support staff;
- **Women Victims of Violence:** Personal Experiences, collaboration and participation

**Activities:**

- **Luxury Fashion Houses:** NFT collection creation, marketing, NFT sales;
- **Artists:** Art creation, collaboration with luxury fashion houses;
- **Startup:** Ecosystem coordination, fundraising, legal fund management;
- **Legal Aid Organizations:** Legal support, allocation of funds to beneficiaries;
- **Women Victims of Violence:** Provide Case Information and collaboration with Legal Aid Organizations

**Value Addition:**

- Luxury Fashion Houses: Contribution of NFT collections for sale;
- Artists: Creation of NFT artworks;
- Startup: Facilitation of NFT sales and management of funds for legal expenses;
- Legal Aid Organizations: Legal assistance and support for women victims of violence;
- Women Victims of Violence: Access to Justice and empowerment.

#### **Value Capture:**

- Luxury Fashion Houses: More visibility by supporting a noble social cause;
- Artists: Receive more exposure in the NFT world by collaborating with luxury brands;
- Startup: commissions from the NFT sales;
- Women Victims of Violence:
- Legal Aid Organizations: Provide legal support to women victim of violence, through the profits obtained from the sale;
- Women Victims of Violence: Legal Support.

#### **Dependence on the EVP:**

- Luxury Fashion Houses: High dependence, as their NFT sales drive the funding for legal expenses;
- Artists: Medium dependence, as their creations contribute to the NFT collections;
- Startup: High dependence, as it manages the operation chain;
- Legal Aid Organizations: Low to medium dependence, as their main focus is legal support.
- Women victims of violence: Low dependence, as they are the beneficiaries of the ecosystem's activities. Their dependence, in fact, lies in the ecosystem's ability to generate these funds to support them rather than actively participating in the generation of the ecosystem's value.

#### **Risk:**

- Luxury Fashion Houses: Low risk, as supporting a charitable cause enhances brand reputation;

- Artists: Low risk, as their artworks contribute positively to the ecosystem;
- Startup: High risk, depending on its ability to manage funds and coordinate the ecosystem effectively;
- Legal Aid Organizations: Low risk, as their goal aligns with a noble cause;
- Women victims of violence: Low risk, because their primary role is to benefit from the ecosystem's activities.

So, this ecosystem aims to create a situation where luxury brands, artists, and beneficiaries all benefit from the sale of NFT collections, supporting an important cause. The startup plays a crucial role in ensuring the smooth functioning of this ecosystem.

## ***6 ECONOMIC FACTORS AND REPORTING BEHAVIOR: INSIGHTS FROM LOGISTIC REGRESSION ANALYSIS***

### ***6.1 Data Collection and Selection***

For the empirical foundation of this analysis, a carefully selected sample dataset from the Italian National Institute of Statistics (ISTAT) was utilized. This dataset encapsulates records of various incidents of violence, coupled with a trove of supplementary information, including the income of the individuals involved, their ages, the number of children they have, and a range of other pertinent details. Crucially, the dataset incorporates a binary indicator signifying whether the individual reported the violence or refrained from doing so.

### ***6.2 Analytical Approach: Logistic Regression***

To decipher the key determinants that influence the reporting behavior of women in the context of violence, the logistic regression model was enlisted as the analytical tool. Logistic regression is a robust statistical technique well-suited for analysing datasets with binary outcomes, precisely as is the case here, whether individuals decide to report incidents of violence. This statistical method models the probability of the binary outcome, in this instance, reporting ("Yes" or "No"), as a function of various input features.

Example: Imagine we are attempting to predict whether a patient has a specific medical condition ("Positive" or "Negative") based on factors such as age, cholesterol levels, and blood pressure. Logistic regression assists us in estimating the probability of the patient having the condition based on these factors.

### ***6.3 Feature Importance Analysis***

A focal aspect of our analysis entailed the examination of feature importance, a concept integral to understanding the factors driving decision-making. Feature importance analysis involves an evaluation of the contribution of each input feature to the model's predictions.

Within mine analysis, I sought to determine which factors, among income, age, and the presence of children, exerted the most substantial influence on the decision to report violence. Feature importance analysis helps pinpoint the features that are the primary drivers of this decision.

### 6.4 Key Finding: The Impact of Income

The findings arising from the analysis cast an illuminating spotlight on a fundamental and compelling discovery: income emerges as the paramount factor significantly shaping the decisions of women regarding whether to report incidents of violence. This revelation underscores the link between economic stability and reporting behavior, revealing a deeply intertwined relationship between financial circumstances and the pursuit of justice.

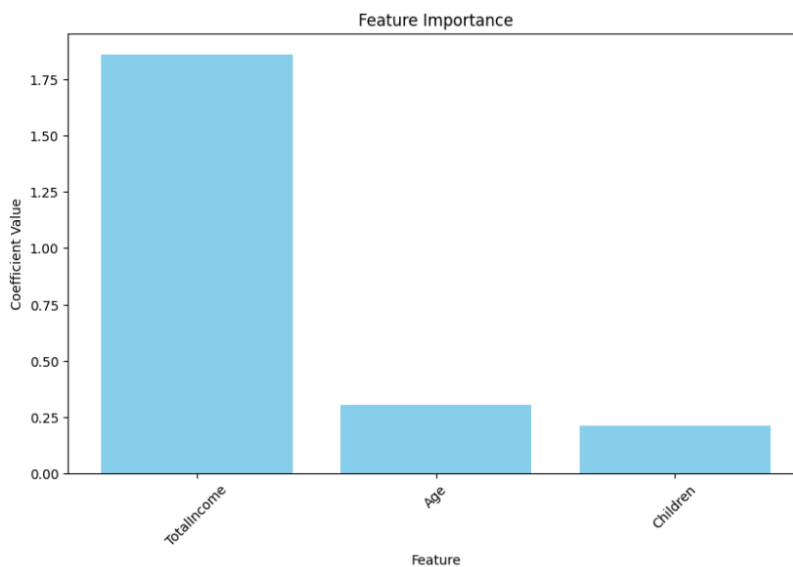


Figure 9: Feature Importance

The analysis brought to the fore the stark reality that women with lower incomes are significantly less inclined to report incidents of violence. This disinclination is rooted in the formidable financial burdens that often accompany the legal process. For these women, the prospect of confronting the intricate web of legal procedures, associated costs, and potential repercussions can appear daunting and insurmountable. As such, the decision to remain silent

about their experiences becomes, in many instances, a pragmatic choice to avoid the financial strain that reporting might impose.

Moreover, the economic disparities in reporting behavior lay bare the harsh reality faced by many women. It exemplifies how socio-economic factors can profoundly impact their ability to seek redress, protection, and support in the face of violence. This finding underscores the urgent need to address the systemic barriers that hinder access to justice and reinforce gender-based disparities.

### ***6.5 Increasing Reporting Behavior***

One of the most intriguing aspects of this analysis is its potential to effect change. Building upon the earlier findings showing that income plays a central role in the decision to report violence, I have developed a hypothesis regarding the introduction of the proposed fund, which is funded through NFT sales. Specifically, we postulate that by allocating support in an indirectly proportional manner with respect to income, we can achieve a more equitable distribution of resources.

Under this hypothesis, individuals with higher incomes, who typically have greater financial resilience, would receive a more modest portion of the fund, while those with lower incomes, who face more significant economic barriers, would benefit from a more substantial share. The underlying rationale is to address the financial burden faced by those who may be deterred from reporting incidents of violence due to the associated legal expenses.

Preliminary estimates stemming from this hypothesis suggest that this innovative initiative may result in approximately a 20% increase in reporting behavior among women. This increase, if realized, would elevate the current reporting rate of 69.34% to an anticipated rate of 87.18%. By aligning the fund allocation with income, this approach seeks to not only empower women to report violence but also mitigate the financial hurdles that might otherwise impede their pursuit of justice and support.



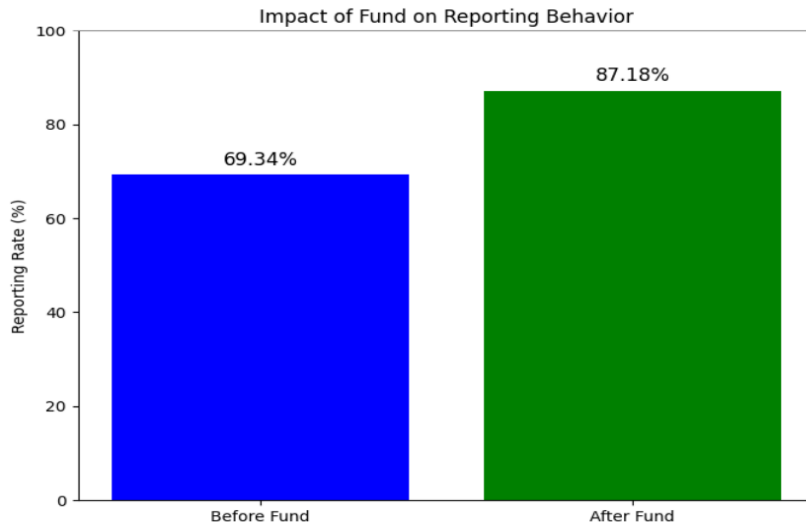


Figure 10: Impact of Fund on the Reporting Behavior

## 6.6 Implications

In summary, this analysis embarked on an exploratory journey to unravel the intricate relationship between economic factors and women's reporting behavior in cases of violence. Leveraging the power of logistic regression and feature importance analysis, we uncovered the undeniable importance of income as a central factor in the decision-making process. Our findings not only underscore the significance of economic stability but also provide valuable support for the proposed startup initiative. This initiative, which directs proceeds from NFT sales to a fund assisting women with legal costs, has the potential to significantly enhance reporting rates. By doing so, it takes a proactive step towards dismantling the financial barriers that often deter women from seeking justice and support, thereby reinforcing the commitment to empower women to assert their rights effectively.

## **7 CONCLUSION**

Throughout this thesis, I have highlighted the issue of violence against women, with a specific focus on Italy. My goal has been to shed light on the complex dimensions of this problem, recognizing that understanding it in depth is essential for devising effective solutions. The data shows clearly demonstrates that the economic dependence is a critical factor in amplifying the women vulnerability to denounce. Another barrier that was identified is the financial constraints, including the high costs of legal fees, that hinder women's access to justice and protection from violence. These financial barriers can discourage victims from pursuing legal action and, in turn, allow perpetrators to act with impunity.

In response to these pressing issues, I have proposed an innovative solution: a startup that harnesses the power of collaboration between luxury fashion brands, NFT artists, and specially the blockchain technology, with the mission is to generate funds for women victims of violence by creating and selling exclusive NFT collections. The core mission of the startup revolves in the NFT sales by luxury brands in order to covering the legal expenses of women affected by violence. Transparency and sustainability are guiding principles, ensuring that contributors can see the direct impact of their support.

The business model of the startup is built on strategic collaborations, NFT auctions, beneficiaries, and multiple funding sources to ensure long-term viability. By involving celebrities and sharing compelling stories of women who have benefited, the startup seeks to engage the public and raise awareness about this critical issue. I have also examined the ecosystem surrounding this startup, using the PIE Model, highlighting the value proposition, key actors, available resources, activities, value addition, value capture, target user segments, dependence on the value proposition, and potential risks.

Furthermore, I have explored the connection between economic factors and reporting behaviour among women who have faced violence. Using Logistic Regression analysis, I found that income plays a pivotal role in influencing the decision to report violence. The funding approach introduced by the startup, which adjusts support based on income, holds the promise of significantly increasing reporting rates by almost 20%.

In conclusion, this thesis advocates for a comprehensive approach that combines data analysis, technological innovation, creative partnerships, and economic empowerment. HerJustice, embodies this approach, offering support to women who have suffered in silence for far too long, enabling them to reclaim their rights, seek justice.

## **8 SUMMARY**

This thesis revolves around the critical issue of violence against women, particularly in Italy emphasizing the need to understand the extent and nature of this problem and highlights the intersection of violence and economic factors.

I begin with the examination of various data sources, including the Italian National Institute of Statistics (ISTAT), to gain insights into the prevalence and characteristics of violence against women. Firstly, I find a connection between women's employment status and their likelihood to seek help when facing violence, suggesting that economic dependence plays a role in vulnerability. The analysis also brings to light a significant gender income gap in Italy, where men contribute the majority of household income. This financial disparity further complicates the ability of women victims of violence to escape their situations. Legal fees emerge as a significant barrier, deterring victims from pursuing legal action and allowing perpetrators to escape consequences.

To address these challenges, I propose an innovative startup that collaborates with luxury fashion brands and renowned artists to create Non-Fungible Token (NFT) collections. These NFTs are sold, and the proceeds are entirely dedicated to covering the legal expenses of women who are victims of violence. This approach aims to ensure that financial limitations do not obstruct access to justice for these women.

Moreover, through a logistic regression analysis I wanted to understand the factors influencing women's decisions to report incidents of violence. One key finding is that income significantly shapes their reporting behavior. Lower-income women are less likely to report violence due to the financial burden associated with the legal process.

The startup takes a proactive step by allocating support based on income, ensuring that those with fewer resources receive more substantial assistance. Preliminary estimates suggest that this approach could increase reporting rates by nearly 20%, offering a way to empower women and break down economic barriers.

In conclusion, my thesis underscores the urgency of addressing the intersection of violence against women and financial obstacles and it advocates for collaborative efforts to remove these barriers and advance the fight against gender-based violence in Italy. The startup and

its ecosystem provide a promising solution to support women in seeking justice and rebuilding their lives.

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