

A Critical Review of the Last 5 Years of Fashion Counterfeit Products –Analyzing if it is a Supply Chain Problem?

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Abstract-Globally, luxury brand counterfeiting is still on the rise, with financial consequences for both the economy and individual businesses. This is due to two tremendously disparate factors: on the one hand, the creators of counterfeit goods and the extensive distribution network that allows them to reach different countries, and on the other, the buyers who purchase these things. The objectives of the study were to critically assess the appraisal of various publications in the last 5 years within broader categories of luxury products in fashion brands. Various parameters of information were compiled for further research that provided a sense of progress in the field of luxury counterfeit products.

Keywords: brand management, Consumerism, Counterfeit, Luxury, supply chain,

Introduction

Product counterfeiting is a huge global problem that has evolved substantially in recent decades due to its rapid spread and serious negative impacts on the economy and public health (OECD, 2007). The counterfeit market is believed to account for between 5 and 7% of the worldwide business (CIB, 1997), yet neither its size nor the breadth of its ramifications is entirely recognized (Spink & Fejes, 2012). Product counterfeiting is an interdisciplinary phenomenon that crosses multiple academic domains, and no one discipline has claimed "ownership" or conducted a thorough and strategic explanatory examination of the phenomenon yet. Product counterfeiting does not cleanly fit into any one academic subject, according to scholars (Fejes & Wilson, 2013).

During the economic crisis, when consumers' income has dropped, a large proportion of consumers began looking for ways to obtain the same or similar consumer goods at a lower price, while maintaining their consumer behavior. The resulting situation has increased demand for illegal goods and therefore stimulated the growth of shadow economy. It has been noticed that while the economic conditions in recent years have shown signs of improvement and stabilization, demand for counterfeit and illegal goods has not reduced, and instead has even grown. According to European Commission 's report, that compared to 2010 the number has grown by 15 per cent. Counterfeit and piracy goods pose a serious threat not only to European, but also to the global economy. That emphasizes the importance of research which would allow better understanding of intents of counterfeit items consumers, causing increase in counterfeit items consumption, and the factors that influence it.

Counterfeit and fake products pose a serious threat to the global economy. The menace of counterfeited products is growing multifold in recent years especially in the wake of ecommerce and a well-connected world from the supply chain perspective. We started seeing the emergence of counterfeits almost half a decade back. It started with a few products in very expensive and prestigious categories like apparel, and jewelry, however later the same

expanded to touch almost all the categories of customer consumption. As the consumer became brand-conscious, counterfeiting started becoming widespread.

Operational Definitions:

Counterfeit: Illegally created goods, according to Nordin (2009), are included in the definition of counterfeit goods. Contraband products are often created using inadequate materials and standards because they are not made by the original manufacturer. There are two significant submarkets in the counterfeit industry: deceptive counterfeiting and non-deceptive counterfeiting. In the first situation, clients are unaware that the item they are purchasing is not genuine. Customers in the latter case are aware that the object they are purchasing is a forgery, but they continue to buy it, becoming involved in the murky trade in forgeries (Haie-Fayle & Hübner, 2007).

Luxury: The world of luxury is full of contradictions. Despite occasional recessions during economic, financial, and political crises, economic data show that it has been expanding rapidly since 1995 (Bain & Co., 2016). Thus, while the current slowdown in China or the effects of health problems (such as SARS) may indicate a drop in sales, clients who postponed purchasing useless things may return soon. This recovery also considers how rich individuals are becoming more frequent in the world as a result of the rapid middle-class expansion in emerging economies. The rise of these "new riches" feeds global consumer demand for hedonistic, high-end goods and services that allow them to show off their good taste while living fulfilled lives (Chadha and Husband, 2007).

Brand Management: Brand management is a marketing function that examines and plans how a brand is perceived in the marketplace using tools and techniques. It aims to build a loyal customer base through good brand relationships and increase the brand's overall perceived worth over time.

Method:

The first step of the search was a comprehensive article search that included: Empirical studies, Full-length articles, luxury fashion brands, and publication years from 2019-2023.

Searching for relevant articles

First, Mendeley (a database search system that accesses major electronic databases) was used to locate relevant articles). Databases accessed by Mendeley were EBSCOhost, Academic Search

Workman and Lee 273 Complete, First Search, JSTOR, LexisNexis, Opposing Viewpoints Resource Center, Ovid, Pro-Quest, Web of Science, and Google Scholar. Secondly, a manual search was carried out with relevant keywords, abstract, and body of research which depicted data on counterfeiting challenges in the supply chain. Third, titles, abstracts, and keywords were identified and checked by the researcher and research assistant to predetermine the criteria noted above.

Selecting researches

Initially, 45 articles were published from 2019-2023. Articles that were not in context to fashion were removed. An in-depth study of articles was carried then scrutinized after which 20 articles were removed that did not fall under fashion luxury management.

Limitations

Even after an exhaustive data search, it can be said that some relevant studies might have been missed which can create a small error in the interpretation of data.

Hypotheses for Research

Because they are founded on prior studies, valid assumptions, and correlational data, propositions (P) are qualitative in character. In order to convert a qualitative evaluation into a quantitative analysis, a hypothesis derived from the proposition is examined (Lynch, 2013). Authors may not always explicitly explain their arguments because they believe readers would understand them based on their underlying knowledge and intelligence (Avan & White, 2001). The critical evaluation's propositions were derived from the literature research and hypotheses in the articles included in the study. The authors of this work wrote their recommendations in such a way that hypotheses can be derived with ease.

Table 1: Article Citation by Year of Publication

2019-2023	
2023	
1.	Combating deceptive counterfeiting in digital supply chain, 2023
2.	Impact of blockchain and distributed ledger technology for the management of the intellectual property life cycle: A multiple case study analysis.
3.	Dupe influencers exploiting social media to peddle luxury fakes, 2023
2022	
4.	Alibaba: the battle against counterfeits. <i>Emerald Emerging Markets Case Studies</i>.
5.	Why do (n't) we buy second-hand luxury products?
6.	Building and optimizing a brand protection program: a total business solution model. In Brand Protection and the Global Risk of Product Counterfeits, 2022
7.	Evolution of luxury marketing landscape: a bibliometric analysis and future directions. <i>Journal of Brand Management</i>, 2022
8.	Authentication of Luxury Products–Identifying Key Requirements from a Seller and Consumer Perspective, 2022
9.	Willingness to purchase counterfeit luxury brands: A cross-cultural comparison

10.	The posh, the paradoxical and the phony: Are there individual differences between consumers of luxury, massive and counterfeit brands?.
11.	Analysis of Attitudes of Consumers in Bosnia and Herzegovina Toward Counterfeit Products. In Counterfeiting and Fraud in Supply Chains
12.	Moderation effects of co-operative institutions' capabilities on the relationship between health insurance literacy and participation in health insurance among co-operative members in Tanzania.
2021	
13.	Assessment the effect of rapid prototyping implementation on supply chain sustainability: a system dynamics approach.
14.	Luxury supply chain management: a framework proposal based on a systematic literature review.
15.	Blockchain in food supply chains: A literature review and synthesis analysis of platforms, benefits and challenges.
2020	
16.	Mitigating counterfeit risk in the supply chain: An empirical study
17.	Application of Circular Economy Principles in the Luxury Fashion Industry: The Case of the RealReal.
18.	Gray market and counterfeiting in supply chains: A review of the operations literature and implications to luxury industries.
19.	Logistics and supply chain management in the luxury industry.
2019	
20.	A review and classification framework of traceability approaches for identifying product supply chain counterfeiting.
21.	Fashion and new luxury digital disruption: The new challenges of fashion between Omni channel and traditional retailing
22.	Factors affecting consumers' purchase intention for counterfeit luxury goods in Bangladesh.
23.	Turning Criminological Attention to Counterfeit Fashion. The Consumption of Counterfeit Fashion
24.	Sustainable luxury marketing: A synthesis and research agenda.
25.	Illegitimate trade in the fashion industry: relevance and counterstrategies in the Italian context.

Analysis of variables:

The terms “counterfeit” and “supply side challenges” are used in presenting the results of the variable analysis because of the diversity of terms used to refer to supply chain counterfeit challenges groups in the research literature. Original terms used by the authors of each article are retained in the tables.

Review of Literature

Dash, A., Sarmah, S. P., Tiwari, M. K., & Jena, S. K. (2023), explores product fraud reported in several supply chain segments. The inherent values of brands increase the likelihood of counterfeiting. Because of their poor reputation, such companies must deal with the consequences of counterfeit goods. As a result, these companies address them primarily through legal action, price strategy, and quality strategy. However, consumer characteristics and the sporadic distribution of counterfeit goods to various consumer types impact the effectiveness of a counter strategy. This paper aims to generate insights into how to use digital technology to stop counterfeit entities by considering consumer traits and the random distribution of counterfeit goods to them.

Bonnet S, Teuteberg F (2023), explores the aims to look into how distributed ledger technology, specifically blockchain, can help resolve intellectual property issues in the current digital era. We investigate companies that use blockchain technology to control the intellectual property life cycle or how it is created, safeguarded, managed, and profited from. In our research, we used a multiple case study approach, looking at 120 use cases across all major categories of intellectual property, including copyright, trademarks, patents, trade secrets, industrial designs, and geographical indications. The empirical validation was built on an extensive within-case analysis of 26 applications chosen from the initial 120 cases.

Chaudhry, P. E. (2022), draws attention to the ongoing issue of luxury fakes being sold online, the consumer's complicity in purchasing luxury fakes, and the difficulty distinguishing between a knockoff and a fake product. Influencers who promote designer hauls and unboxing videos on social media take advantage of their followers' trust. Monitoring social media posts that violate a company's intellectual property, working with e-commerce platforms to remove them, educating consumers about the illegal activities of counterfeiters through awareness campaigns, using real social influencers to disprove the dupe influencers, and pursuing legal action should all be used to stop dupe influencers.

Jyani, N., & Bansal, H. (2022), examines the sale of counterfeit goods on Alibaba Group's various websites was a serious problem. The company was dealing with a number of issues, including a deteriorating global reputation, an increase in counterfeit goods, and numerous lawsuits. The case study will help readers understand the critical elements of counterfeiting as well as the decisions made when operating such models where the platform is merely an online marketplace rather than a direct seller. It emphasizes how fake product listings can be detected and removed from such platforms using technology and brand collaboration, thereby protecting business integrity. Furthermore, the case emphasizes the importance of maintaining original brand exclusivity and intellectual property rights.

Bardey, A. C., Turner, R., & Piccardi, P. (2022), discovered that different participants' experiences with buying and owning luxury fashion knockoffs varied: while some carefully considered their purchases and were ultimately satisfied with them, others bought on impulse and later regretted their decision. The findings demonstrated the importance of consumer perceptions of quality for both high-end and high-end counterfeit fashion products. They

demonstrated how raising consumer awareness of the unethical aspects of the counterfeit industry could change consumer behavior.

Stolz, K. (2022), in the study includes current customers as well as non-customers who are potential future customers. According to the theory of planned behavior, the elements of attitude, subjective norms, perceived behavioral control, and personal motivators (creative, economic, ethical, nostalgic, and sustainable) were investigated. The results of structural equation modeling confirm that attitude, prior purchase experience, perceived behavioral control, and subjective norms all influence purchase intent. Individual motivators such as economics and ethics have a large influence on attitude. Participants were also asked to define luxury for themselves and provide specific arguments for and against used luxury goods.

Wilson, J. M., & Grammich, C. A. (2022), focuses on issues such as prevalence rather than methods to reduce counterfeiting. Academic research on strategies, on the other hand, can assist practitioners by providing new information when compared to independent, thorough, and rigorous research that can be conducted independently by researchers. This chapter examines academic research on potential anti-counterfeiting strategies for businesses. It contrasts the distribution of these strategies by category with the services provided by practitioners. While researcher-recommended tactics may provide more context and detail, practitioner-recommended tactics may provide the best insight into the current tactics being used. Companies interested in launching brand protection programs should consider the strategies proposed by practitioners for launching a program and researchers for expanding it.

Rathi, R., Garg, R., Kataria, A., & Chhikara, R. (2022), highlights that although the concept of luxury is out of date, academic interest in luxury marketing (LM) has recently increased. The result is an increase in international publications. This study examines 34 years of scholarly work on LM by analyzing 893 articles from 271 journals on Scopus using bibliometric and content analysis. Despite its early stages, the field has been approached by a variety of disciplines and methodologies, according to the findings. A structured bibliometric and content analysis enabled a thorough examination of the field's evolution. Furthermore, the results of bibliographic coupling point to clusters of new themes in LM scholarship, such as counterfeit goods, social media marketing, and sustainability. Finally, a conceptual framework derived from the thematic clusters is presented.

Zimmermann, R., Udokwu, C., Kompp, R., Brandtner, P., & Norta, A. (2022, November), in the current paper employs a mixed-method approach to determine the critical needs and preferences from consumer and seller perspectives, reporting on a quantitative survey combined with expert interviews. The findings show that consumers and experts have varying knowledge about authentication techniques. Traditional serial number-based product authentication methods are known to consumers and experts, but blockchain-enabled methods are only known to experts. However, both groups prefer digital authentication methods and agree that it is the responsibility of sellers, producers, and consumers to ensure that products are genuine.

Tunçel, N. (2022), investigates how idealism, happiness from material possessions, and attitudes towards the legitimacy of counterfeit luxury goods influence people's willingness to buy them in Slovenia and Turkey. Partial Least Squares Structural Equation Modeling is used to analyze data from 224 Turkish and 205 Slovenian consumers. The findings support the idea that idealism hurts consumers' attitudes toward the legitimacy of counterfeit goods and positively impacts consumers' willingness to buy knockoffs of luxury brands. Turkish consumers have a positive relationship between their attitude towards counterfeit goods and their happiness based on possessions. Slovenian or Turkish consumers' willingness to buy knockoff luxury brands was not found to be influenced by idealism or possession-based happiness.

Katyal, K., Dawra, J., & Soni, N. (2022), expands our understanding of mass-market consumers and shows how they differ from those who buy luxury items and knockoffs. Our research highlights the differences between these consumers by utilizing three cognition-based constructs: cognitive goals (maximization), cognitive style (attitude towards contradictions), and cognitive control (perceived behavioral control). We show luxury brand consumers are maximizers with low perceived behavioral control and a negative attitude towards contradictions. Independent mass-market brand consumers are content with what they have and view contradictions positively.

Peštek, A., & Katica, A. (2022), examines technological advancement, globalization, increased global trade, new markets, and globalization have all aided the spread of the counterfeiting phenomenon. Furthermore, counterfeiting has a negative impact on legitimate producers, consumers, as well as national and international economies. The purpose of this study is to present consumer attitudes toward counterfeit goods in Bosnia and Herzegovina. The goal was to find out whether and why consumers buy counterfeit goods, which counterfeit goods they buy the most frequently, how they feel about buying counterfeit goods, and how much they are aware of the risks associated with doing so.

Soucie, S. (2022), highlights that counterfeiting creates a product so similar to another's that consumers believe it is the original. It investigates the advantages and disadvantages of Gen Y and Z consumers buying counterfeit fashion products (CFPs), as they are likelier to do so. The study's findings on a sample of young Croatian consumers show that they undervalue original products and prefer CFPs due to the practical advantages of price and accessibility. The perception that counterfeit goods are of lower quality than genuine goods and the moral and legal quandaries they present are the main deterrents for young consumers from purchasing them.

Nandonde, F. A. (2022), examined the Tanzanian region of Dar es Salaam, 200 questionnaires were collected using a convenience sampling method. The study employed a 20-item Likert scale and a previously developed scale on consumers' preferences for counterfeit products developed by Sharma and Chan (2011). The collected data were analyzed using confirmatory factor analysis (CFA). The models were generally disregarded, indicating that morality, social standing, and attitude are unimportant in influencing

consumers in developing economies to buy counterfeit mobile phones. Additional research topics were suggested.

Faribroz Rahimnia, Nazanin Hosseini Arian (October 2021), The financial and social values are important drivers of luxury value perception in shaping the purchase intention of customers while functional value is not involved in this regard. Attitude towards counterfeit, as a moderator reduces the positive effect of luxury value perception on purchase intention.

Brandao, M. S., Godinho Filho, M., & da Silva, A. L. (2021), in the study, attempts to identify the essential components that best characterize the premium supply chain. It explores how they are related to one another in a framework that collects and summarizes the material. Following a thorough search of the literature, 288 papers were identified; they were picked based on high quality and thematic standards. The alignment of major success criteria with performance targets and configuration components of luxury supply chains was studied using content analysis in the final sample of 66 publications. The findings provide a framework for three levels of the luxury market that explains the relationships between configuration elements, supply chain performance targets, and key success determinants.

Li, K., Lee, J. Y., & Gharehgozli, A. (2021), in the paper, highlighted the complexity and difficulty of enhancing efficiency and addressing problems in food supply chains that are exacerbated by the food industry's internationalization. Blockchain, a potentially decentralized information technology, has the potential to improve food supply chains by reducing transaction costs and times, increasing process efficiency, security, and transparency, and developing participant trust. To assess the benefits and drawbacks of blockchain technology in the food industry, the authors first discuss the major blockchain platforms already in use in food supply chains. We demonstrate that blockchain enables previously unheard-of openness at every stage of the food supply chain, leads to improved transaction quality, safety, and transparency, and reduces food fraud and waste.

Kros, Falasca, Dellana, and Rowe (Jan 2020), in this study, use a contingency theory from a quality standpoint to develop a model for evaluating the effectiveness of supply chain (SC) performance in relation to counterfeiting prevention measures. Companies who integrate their SC risk management procedures more extensively, according to the study, have a better emphasis on counterfeit risk, a more established CRM, more dependable SC KPIs, and higher SC performance outcomes. CRO did not appear to significantly improve SC MC on its own.

Mihăiliasa, M., & Avasilcăi, S. (2020), in the research, identifies and classifies the main threats and attacks on the data network, the various information and research currently faced by higher education institutions. These issues need to be treated with utmost seriousness because, in general, the annihilation of cyber-attacks is done after they have been done, thus completely or partially losing certain data, and the creation of security barriers could limit access by attackers to confidential information of the institution. The results serve to open a new research direction that leads to the development of a security management model tailored to academic activity.

Wang, Y., Lin, J., & Choi, T. M. (2020), in the paper, highlights that the luxury industries are becoming highly substantial. However, it is well acknowledged that the existence of the grey market and counterfeiting operations represent challenges for enterprises involved in the supply chains of luxury goods. This study meticulously reviews the most representative papers in the operations literature that address counterfeiting and the grey market. We consider both analytical and empirical studies. In previous studies, we identified the industry, goals, and research methodologies used. We place a premium on the latest, cutting-edge research in the field. Based on the review's findings, we propose a future research agenda and discuss the implications for the luxury sectors.

Shen, B., Minner, S., Chan, H. L., & Brun, A. (2020), in this special issue investigates modern supply chain and logistics methods, as well as the applications of luxury goods. This editorial note collects views on a variety of critical topics, including sustainability, sourcing, advertising, behavioural concerns, product sharing, and channel management.

Large, J., & Large, J. (2019), highlighted that as a result of technological improvements and more worldwide travel, the manner we consume has shifted. As the market grows and the options for purchasing clothing multiply, there is growing worry about the illegal counterfeit fashion sector. These concerns highlight the potential economic harm that branded counterfeit products could cause in terms of intellectual property rights violations, as well as the fact that counterfeit product supply and production present a low-risk, high-profit opportunity to support criminal lifestyles and activities. This chapter introduces the topic of fashion forgery, establishes the context of the book, and makes the argument for a more critical examination of the use of fraud in fashion.

Aiolfi, S., & Sabbadin, E. (2019), in the paper after carefully reviewing the literature and the changes that have occurred in the fashion world, the current work's goal is to examine some novel business models in the fashion system, specifically the perspectives of the physical store threatened by the digital transformation. The study offers fodder for thought on the future of multichannel fashion commerce. Will new customers ever be able to benefit from technology? Furthermore, the case study will reveal which technologies characterize fashion sales points with the highest outcomes in Retail 4.0 from the retailer's perspective. The final component will propose a theoretical framework for Omni channel fashion retailing adoption. A review of the literature was used to create this framework.

Large, J., & Large, J. (2019), explore the idea to dispel widespread assumptions about the "typical" counterfeit buyer, this chapter contextualizes the consumption of counterfeit fashion items and argues that there is scant evidence to support this claim. This chapter investigates the importance of situational and contextual factors such as the availability and price of counterfeit merchandise. These discussions look at the similarities and differences between people who buy counterfeit fashion on purpose and unintentionally, using "primary markets" (where customers are duped into buying counterfeits) and "secondary markets" (where consumers buy counterfeits on purpose). This chapter examines both the reasons why people avoid consuming counterfeits and the reasons why people buy counterfeit apparel.

Gani, M. O., Alam, M. I., Chowdhury, S. A., & Faruq, M. O. (2019), in the study's purpose is to examine the factors influencing customers' intentions to purchase premium counterfeit commodities in Bangladesh using the Theory of Planned Behaviour (TPB). The goal of this study was to determine the impact of product attributes, brand image, income level, price, and gender on the intention to purchase counterfeit luxury items. Data were gathered from a sample of 242 respondents who had purchased various counterfeit luxury products and lived in various parts of Dhaka. Personal interviews were used to collect survey information, which was then incorporated into a structured questionnaire. Descriptive statistics, reliability statistics, one-way ANOVA, and multiple regression analysis were used to examine the data. According to the research, only three of the five criteria, including product characteristics were significant.

D'Amato, I., Belvedere, V., & Papadimitriou, T. (2019), highlights that from the perspective of the supply chain, counterfeiting is simply one component of a wider phenomenon known as "illegitimate trade," which also includes supply chain infiltrations, factory overruns, grey and parallel markets, retail service counterfeiting, and shoplifting. Despite the fact that illegal commerce occurs frequently, firms typically only take legal action to prevent it, ignoring possible countermeasures such as supply chain integration, technology adoption, and public relations activities. This study examines and analyses the most common counterstrategies used by firms in order to identify which unlawful trade phenomena are most prevalent and destructive to high-end fashion corporations.

Findings

Based on our findings, we make recommendations for reducing the consumption of counterfeit luxury goods. Our underlying assumption is that to combat counterfeiting effectively, efforts must focus not only on enforcing the law but also on understanding why consumers choose to purchase luxury knockoffs. Understanding these factors allows for developing effective strategies for reducing demand for luxury knockoffs.

Online sales are catching up in the fashion accessories segment, there are products like handbags, wallets, backpacks where customers are buying online more. There are product categories where customers are ready to buy counterfeits. Doubt regarding the genuineness of brand emerges primarily due to touch and feel of products, there is an absence of any scientific methodology. Only 12% of customers are able to distinguish counterfeit brand over fake brand with 100% confidence when they shop offline, however none are absolutely sure when they shop online. Very few customers (less than a quarter) are absolutely sure of receiving a genuine product always when they shop offline, only 10% are 100% sure when they shop online.

Summary

Piracy and counterfeiting are examples of theft. They involve the illegal acquisition and use of intellectual property (IP). As a result, the financial and societal costs of piracy and counterfeiting are comparable to other types of theft (e.g. personal property theft). Piracy and

counterfeiting divert commercial and public resources away from more productive uses and towards the illicit acquisition of intellectual property or its defense against such illegal acquisition. The economic costs of piracy and counterfeiting, on the other hand, much exceed the traditional costs of theft.

Guarantee that if stores are proven to be selling counterfeit goods, the local government will cancel their trade license. Delegate authority to external and internal auditors, as well as government tax inspectors, to check and account for genuine product licenses inside all sorts of public and private firms. Priority should be given to counterfeit items when performing health and safety inspections as mandated by statutes such as the Prevention of Food Adulteration Act and the Pharmaceuticals and Cosmetics Act. Amend the Trademark Act of India to strengthen well-known mark protection for trademarks and trade names. Contemplate adopting stricter legislation allowing for the destruction of machinery used to make infringement-related counterfeit products.

As inferior items have infiltrated markets globally, it is difficult to identify the difference between a genuine product and one that has been copied (Gentry, 2006). The practice of selling counterfeit copies of genuine things is referred to as "counterfeiting" (Grossman & Shapiro, 1988). Notwithstanding the wrongdoings and disadvantages associated with counterfeits, Bian and Veloutsou (2005) assert that the growth of counterfeiting has persisted since the early 1970s and shows no indications of slowing down. This is evident from a poll conducted by an anti-counterfeiting organization, which discovered that if supplied at a reasonable price and of appropriate quality, one-third of buyers would knowingly purchase counterfeit items.

Declaration Of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

- [1] Anupama Kumar, S., & Anusha, M. (2023). Blockchain Enabled Supply Chain Management. SN Computer Science, 4(2), 179.
- [2] Farahmandi, F., Rahman, M. S., Rajendran, S. R., & Tehranipoor, M. (2023). CAD for Anti-counterfeiting. CAD for Hardware Security, 289-313.
- [3] Dhablya, D. (2022). Audit of Apache Spark Engineering in Data Science and Examination of Its Functioning Component and Restrictions and Advantages. INTERNATIONAL JOURNAL OF MANAGEMENT AND ENGINEERING RESEARCH, 2(1), 01-04.

- [4] Hammi, B., Zeadally, S., & Nebhen, J. (2023). Security threats, countermeasures, and challenges of digital supply chains. *ACM Computing Surveys*.
- [5] Dhabliya, D. (2021d). Examine Several Time Stamping Systems and Analyse their Advantages and Disadvantages. *International Journal of Engineering Research*, 1(2), 01–05.
- [6] Lall, M. M. IN BLOCKCHAIN WE TRUST? The examination of an anti-counterfeiting solution (Doctoral dissertation, City, University of London).
- [7] Nitsche, B., Straube, F., Kämper, T. L., & Zarnitz, S. (2023, April). Implementation Framework for Blockchain-Based Traceability to Tackle Drug-Counterfeiting: Embracing Sustainable Pharma Logistics Networks. In *Manufacturing Driving Circular Economy: Proceedings of the 18th Global Conference on Sustainable Manufacturing*, October 5-7, 2022, Berlin (pp. 630-637). Cham: Springer International Publishing.
- [8] Richard, O. A. (2023). Fraud, Corruption and Counterfeits in the Nigerian Pharmaceutical Industry (Doctoral dissertation, University of Portsmouth).
- [9] Dhabliya, D., & Others. (2021). An Integrated Optimization Model for Plant Diseases Prediction with Machine Learning Model. *Machine Learning Applications in Engineering Education and Management*, 1(2), 21–26.
- [10] Younesi, M., Taheri Kia, F., Rousta, A., & Ahmadi Chehreh Bargh, S. (2023). 2) Model of Repeated Patronage of Counterfeit Products at the Industrial Market (Case study: Counterfeit Audio and Video Products Industry). *Consumer Behavior Studies Journal*, 5-5.