



Combating Counterfeiting and Piracy in the Fashion and Beauty Industry in Ghana: The Role of Information Technology

Yaa Amponsah Twumasi

Department of Operations & Management Information System
University of Ghana Business School
University of Ghana
Legon, Accra, Ghana
Phone: +233209479672; +233248852426
Email: mnabdulai@st.ug.edu.gh ; richboateng@ug.edu.gh

ABSTRACT

This study seeks to investigate how information technology (IT) enables or constrains counterfeiting and piracy in the Fashion and Beauty (F&B) Industry in Ghana. The Stakeholder and the Lemon Market Theories would be used to ascertain how counterfeiting and piracy is affecting the fashion and beauty industry in Ghana as well as the types of anti-counterfeiting/piracy technologies used in identifying and curbing the counterfeiting and piracy in the industry. A qualitative research approach comprising of focus group discussions and interviews would be adopted for the study. This research will provide an insight into the effect of piracy and countering in the F&B industry as well as serving as a guideline for other sectors of the economy to investigate factors that enable or constrain piracy and counterfeiting.

Keywords: Counterfeiting, Piracy, Information Technology, Innovation, Modernisation, Anti-counterfeiting.

iSTEAMS Cross-Border Conference Proceedings Paper Citation Format

Yaa Amponsah Twumasi (2018): Combating Counterfeiting and Piracy in the Fashion and Beauty Industry in Ghana: The Role of Information Technology. Proceedings of the 13th iSTEAMS Multidisciplinary Conference, University of Ghana, Legon, Accra, Ghana. Vol. 2, Pp 167-174

1. INTRODUCTION

The fashion and beauty industry (F&B industry hereafter) is currently one of the utmost, vital and imaginative industries that is promoting many countries in the world today (Laurell, 2016; Łopaciuk & Łoboda 2013). According to the United States Congress' Joint Economic Committee, the F&B industry worldwide makes more than \$1.2 trillion while the United States only consumed over \$250 billion yearly on fashion. Even though this industry is seen globally as one of the most vital and imaginative industries that is facilitating many countries economy, there is a menace (counterfeiting and piracy) trying to jeopardise the industry globally (Li & Yi, 2017; Laurell, 2016; Łopaciuk & Łoboda 2013). Counterfeiting and piracy are now a major concern to both governments and industries because of the negative impact that they have on economic growth, employment and modernisation as well as are posing a danger to the well-being of society (Quoquab, Pahlevan, Mohammad & Thurasamy, 2017; Li & Yi, 2017; Arli, Tjiptono & Porto, 2015; Guin, DiMase & Tehranipoor, 2014). Some studies conducted on the F&B industry indicated that counterfeiting and piracy are indeed destroying the industry (Li & Yi, 2017; Arli, et al, 2015; Meraviglia, 2015; Fernandes, 2013; Kim & Johnson, 2014). For instance, a study by Kim and Karpova (2010) attested to the fact that counterfeiting is a serious problem for the fashion industry.

However, the ascendance of counterfeiting and piracy which are destroying products, businesses, and lives as well as reducing revenue in the F&B industry inevitably, came about as a result of the advancement of technology specifically Information Technology (IT) (Li & Yi, 2017; Arli, et al, 2015; Herstein, Drori, Berger & Barnes, 2015, Guin, et al, 2014). Information Technology has brought about some technological innovations that are enabling counterfeiting and piracy in the F&B industry. The most compelling evidence is the increase in globalization in trading and shopping online, which has changed the manner in which the F&B industry operates remarkably. This has made it very easy to access, shop and pay online for essentially every product or service, globally (Inamdar, 2015; Laurell, 2016; Meraviglia, 2015; Sarpong, Howard & Osei-Ntiri, 2011). On the other hand, these same technological innovations have brought about some solutions to avoid and to tackle the worldwide epidemic of counterfeiting and piracy in the F&B industry.



Which has brought about an unfair completion to the industry where counterfeiting and piracy are gaining grounds in a frightening manner (Guin, et al., 2014; Bansal, Malla, Gudala & Tiwari, 2012) as well as safeguarding the validation of products and services in the industry to keep it from unfair competition and loss of revenue. These technological innovations according to, Li and Yi (2017) and Meraviglia (2015) are known as anti-counterfeiting and anti-piracy technology. Existing literature on anti-counterfeiting/piracy in the F&B industry, both empirical (Li & Yi, 2017; Meraviglia, 2015; Guin, et al., 2014) and theoretical (Arlı, et al, 2015; Hoecht & Trott, 2014; Fernandes, 2013) has identify countless issues in the F&B industry which needs immediate attention.

2. STATEMENT OF PROBLEM

Regardless of the threat counterfeiting and piracy poses to the F&B Industry, previous studies of fashion counterfeiting and piracy only discussed issues on consumers' intentions for purchasing counterfeiting products and purchasing behaviour (Koay, 2018; Quoquab, et al, 2017; Ong, Chiang, & Pung, 2015; Fernandes, 2013; Lee & Lee, 2013), consumers' attitude towards counterfeiting luxurious good and perception (Bhatia, 2018; Ahn, Lee & Lee, 2017; Kim, Ko, & Koh, 2016; Yoo, 2011; Kim & Karpova, 2010) as well as strategies and legal protection of fashion (Cho, Fang & Tayur, 2015; Hoecht & Trott, 2014; Kim & Ko, 2011). Other studies also discussed the technological innovations (anti-counterfeiting/piracy) which is to avoid and to tackle the worldwide epidemic of counterfeiting and piracy (Li & Yi, 2017; Meraviglia, 2015; Guin, et al, 2014; Bansal, Malla, Gudala, & Tiwari, 2012). And the harm that counterfeiting and piracy are bringing into the F&B industry, however these studies did not suggest any specific anti-counterfeiting/piracy technology that should be deploy in the fight against counterfeiting and piracy in the F&B Industry (Inamdar, 2015; Meraviglia, 2015; Guin, et al, 2014; Kim & Johnson, 2014). Even though existing literature on anti-piracy/counterfeiting in the F&B industry, both theoretical (Robertso, McNeill, Green & Roberts 2012; Fernandes, 2013; Arlı, Tjijtono, & Porto, 2015) and empirical identify a number of issues in the FBI (Guin, et al., 2014; Meraviglia, 2015; Li & Yi, 2017).

3. OBJECTIVE

The question underpinning this study is, "How does information technology (IT) enable or constrain piracy and counterfeiting in the Fashion and Beauty (F&B) industry in Ghana?" Specifically this study seeks to: (a) describe the factors which influence the use of IT as an enabler or constraint (inhibitor/reducer) of counterfeiting and piracy in the F&B industry in Ghana, (b) describe how the technology factors which facilitate the use of IT in enabling or constraining counterfeiting and piracy in the F&B industry in Ghana (c) describe the impact of these information technologies on counterfeiting and piracy in the F&B industry in Ghana.



4. LITERATURE REVIEW

4.1. Counterfeiting and Piracy

Counterfeiting and piracy in recent years has been increasing in an alarming rate all over the world, attracting a number of businesses and manufacturers because of its lower cost of production although it is illegal (Li & Yi, 2017; Inamdar, 2015; Kim & Johnson, 2014). Even though, the terms counterfeiting and piracy are most of the time used in the same manner, they have a divergent meaning. Piracy can be related to the illicit violation or imitation of certified products or works (Li & Yi, 2017; Meraviglia, 2015; Fernandes, 2013). In addition, the act of replicating the works and products of copyright owner's without their authorisation such as: clothing, music CD's, movies, books, etc., can be seen as piracy (Li & Yi, 2017; Meraviglia, 2015; Fernandes, 2013). On the other hand, counterfeiting products can be labelled as products that have an undistinguishable characteristics as that of the registered ones that are made, purposely to misinform consumers into accepting that they are genuine products (Li & Yi, 2017; Meraviglia, 2015; Tang, Tian, Zaichkowsky, 2014; Fernandes, 2013; Kim & Karpova, 2010). According to Yao (2015) counterfeiting can be grouped into two: deceptive and non-deceptive counterfeiting. In support of this, Li and Yi (2017) attested to the fact that deceptive counterfeiting is when consumers are convinced that they are buying a product of company "A" while the product is from company "B" instead.

Meaning that the consumer is unknowingly purchasing a counterfeiting product. Whereas, non-deceptive counterfeiting is when consumers know or strongly believe that the product or service being purchased is not the original product/service after close examination and inferring. Yet, they go ahead and still purchase the counterfeiting or piracy product or service mostly because of its lower cost (Li & Yi, 2017; Yao, 2015).

4.2. Anti- Counterfeiting/Piracy

Because of the harmful effects counterfeiting and piracy that have on products and services, some scholars have consciously made numerous efforts in studying at length consumer's attitude pertaining to counterfeiting and piracy. This has, therefore, led to the invention of a number of anti- counterfeiting/piracy technologies which can verify counterfeiting and piracy products and services (Herstein, 2015; Hoecht & Trott, 2014). Li, (2013) postulated that, anti-counterfeiting or anti-piracy technologies are used in the identification of genuine products or services from that of the imitation. Additionally, Li, Xu, Wang and Wang (2012) and Li, Ge, Zhou and Valerdi (2012) indicated that anti-counterfeiting technologies are used in the protection of brand names, the reputation of traders', and the well-being of the entire society.

Furthermore, anti-counterfeiting and anti-piracy technologies in general must entail some unambiguous distinctive attribute which must make it (1) hard to reproduced, (2) simply to validate with the absence of any tool in its detection (3) not easy to reuse or re-label and (4), it should be straightforwardly noticed when tampered with (Li & Yi, 2017; Li, et al., 2012; Ting & Ip, 2012). In addition, there are different types of anti-counterfeiting and anti-piracy technologies that are available to validate products and services. There are also other technologies for tracing and tracking of counterfeiting and piracy products in the supply chain (Li, et al., 2012; Ting & Ip, 2012). At present, a range of anti-counterfeiting/piracy technologies are available to protect product authentication such as: anti-forgery ink, colour shifting ink, biological anti-counterfeiting technology, holographic technology, packaging protective technology, holograms, micro-printing, physical security technology, watermarks, security thread, barcode technology, etc. (Arli, et al., 2015)

5. THEORETICAL UNDERPINNING

The Stakeholder Theory by Freeman (1984) and the Lemon Market Theory (LMT hereafter), popularly known as the market of "Lemons" developed by the Nobel Prize winner Akerlof in his 1970 seminal paper Akerlof (1970) will serve as the theoretical underpinning of this study. The core notion of the stakeholder theory is that, the focus of the organisation should be: respect, understand and meet the preconditions of every person who has an interest in the outcomes and actions of the organisation and not only to accumulate shareholders wealth. Therefore, the role of the F&B industry is to respect, understand and meet the requirements of the numerous stakeholders in the industry, which ranges from fashion designers, computer programmers, project managers, lawyers, accountants, social media directors, copywriters, consumers etc. (Hoecht & Trott 2015; Petrenkoa, 2015; Fernandes, 2013). Additionally, all the stakeholders in the F&B industry needs to be protected from counterfeiting and piracy.



Therefore this theory will help explain the role each stakeholder needs to play in curbing counterfeiting and piracy in the F&B Industry. The stakeholder theory, indicates that stakeholders should involve themselves in the decision making as well as the strategic resource of the organisation, to offer a competitive advantage for the industry (Cennamo, Berrone & Gomez-Mejia, 2009; Plaza-Úbeda, Burgos-Jiménez & Carmona-Moreno, 2010).

Donaldson and Preston (1995), categorized stakeholder theory from three points of view: descriptive, instrumental, and normative. This study would look at the descriptive perspective of the stakeholder theory. The descriptive point of view is that every organisation has stakeholders therefore every stakeholder must be satisfied and not only the shareholders. In addition, descriptive aspect of the stakeholder theory attest to the fact that "it refers to the organisation as a pool of supportive and competitive wellbeing owning an essential value." While, the instrumental perspective of the theory suggest that companies that put first their stakeholders' interests are to be expected to be more effective than ones that do not. According to, Donaldson and Preston (1995) normative perspective takes a look at the reason firms have to give respect to their stakeholders.

In addition, the normative perspective has always been the main principal of the stakeholder theory. Whereas the phenomenon of the LMT came about on markets where there is lack of information flow between buyer and seller. And where the overall quality of goods and services offered is reflected to the entire group of sellers rather than on individual seller. According to this theory "there can be incentive for sellers who market poor quality goods. Resulting in a reduction of the average quality, leading to a death spiral which eventually brings about a complete market deterioration" (Akerlof, 1970).



5.1 Conceptual Framework

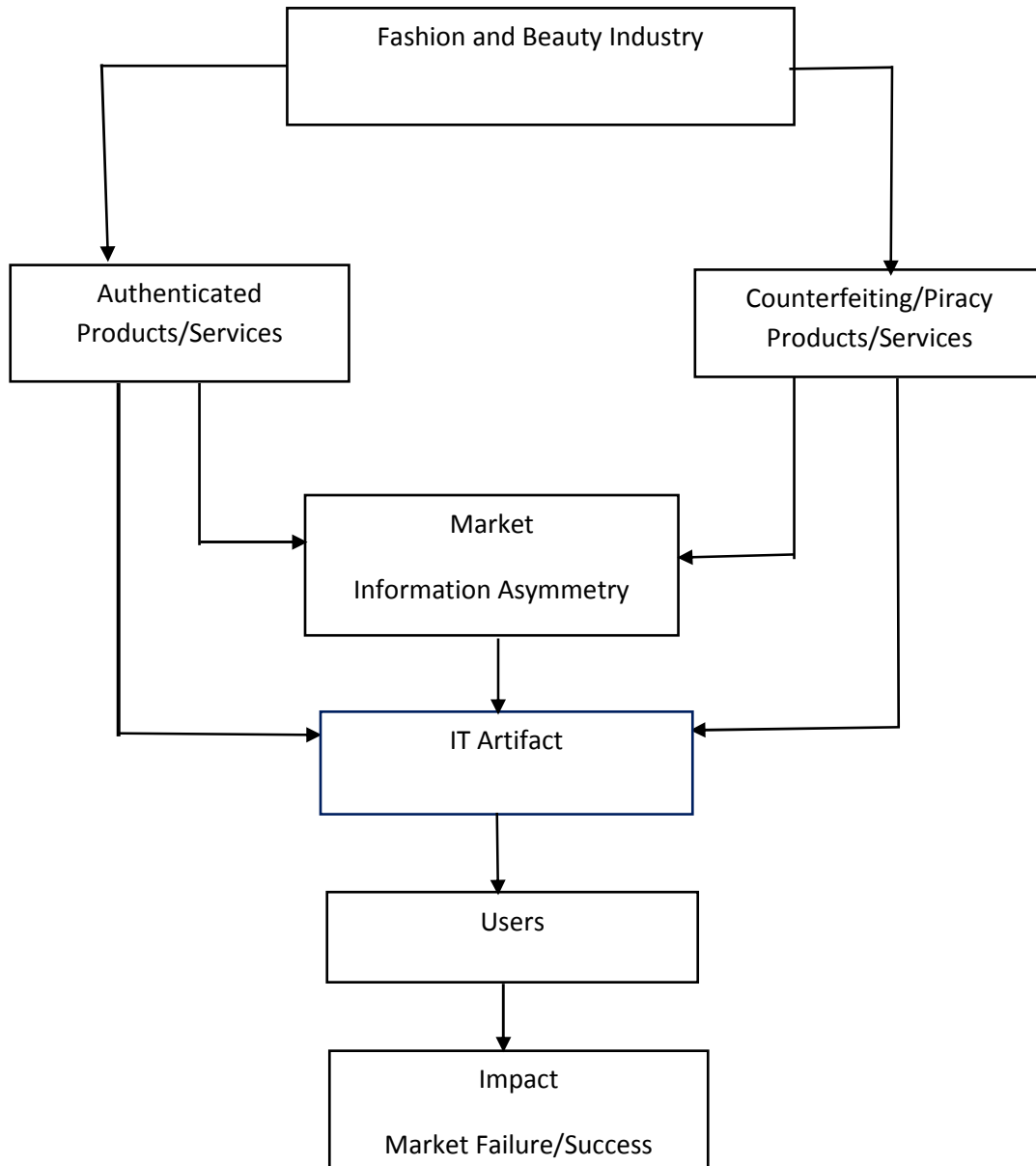


Figure 1: Conceptual Framework
Source: Adapted from Devos et al. (2012)

Similarly, Devos, Van Landeghem and Deschoolmeester (2012); Wilson and Zillante (2010) and Pavlou and Dimoka (2006) postulated that because of the absence of seller differentiation in the goods and services offered in such markets, high-quality sellers are forced to flee the market because their reputation cannot be rewarded. The fundamental concepts of the LMT are *information asymmetry*, *trust*, *adverse selection* and *moral hazard*. The level of analysis for the theory is a market (internal or external) where two parties meet for transactions (Stiglitz 2000).



The LMT is applicable to this study because of the lack of information asymmetry in the product market which might make it very difficult for the F&B industry to survive. Therefore, the need to bridge the information gap in the industry so as to safeguard the originally products from that of the pirated and counterfeited ones. Otherwise, the counterfeiting and piracy products fashion products might drive away the authentic fashion products from the market. Even though, the stakeholder theory and the LMT don't have their origins in the field of Information Systems (IS) and Information Communication Technology (ICT), recently, these theories are being applied in the field IS (Dewan & Hsu, 2015; Mishra & Mishra, 3013; Lee, Cho, Chae & Shim, 2010; Pavlou & Gefen, 2004; Resnick, Zeckhauser, Friedman & Kuwabara, 2000; Pouloudi, 1999).

4. METHODOLOGY

This study seeks to investigate how the influence of information technology (IT) enables or constrains counterfeiting and piracy in the F&B industry in Ghana. The research will be both an exploratory and descriptive study, and will adopt a qualitative research approach, comprising a focus group discussion. The descriptive research design is used for observing, understudying and describing of the subject without influence them. An exploratory research design can also be used in obtaining evidence regarding the variables being studied, along with seeking new understandings, and 'what exists, with respect to variables or conditions in a specific state of affairs (Collin & Hussey, 2013; Saunders, Lewis & Thornhill, 2009; Yin, 2009).

Furthermore, the data collection tool for this study will be made up of semi-structured interview guide. An interview guide will be obtained to implore the views and opinions of respondents concerning the strategies obtained in curbing counterfeiting and piracy. In addition to the categories of anti-counterfeiting and anti-piracy technologies made available in detecting and safeguarding products in the F&B industry in Ghana will be investigated. This study will collect empirical data by conducting qualitative interviews with some selected manufactures and consumers from some of the subsectors of the fashion and beauty industry in Ghana. The interview questions for the empirical study will be designed based on the theory and research questions. The analysis and data collection of the research will be done alongside; whiles, manually transcribing the responses. The data analysis will then be presented in tables and themes where applicable with unambiguous anecdotal declarations to support or refute the response given by the respondents. The case study will then be analyzed using pattern-matching, as Yin (2009) described to help establish the findings that support the research questions.



REFERENCES

2. Akerlof, G.A., (1970). The Market for 'Lemons': Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, 84(3), 488-500.
3. Arli, D., Tjiptono, F. & Porto, R., (2015). The impact of moral equity, relativism and attitude on individuals' digital piracy behaviour in a developing country. *Marketing Intelligence & Planning*, 33(3), 348-365.
4. Bansal, D. Malla, S. Gudala, K. & Tiwari, P., (2012). Anti-counterfeit technologies: a pharmaceutical industry perspective. *Scientia phamaceutica*, 81(1), 1-14.
5. Cennamo, C. Berrone, P. & Gomez-Mejia, L. R., (2009). Does stakeholder management have a dark side? *Journal of Business Ethics*, 89(4), 491-507.
6. Collis, J., & Hussey, R. (2013). *Business research: A practical guide for undergraduate and postgraduate students*. Palgrave Macmillan.
7. Creswell, J. W., (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* Sage publications.
8. Delbufalo, E., (2015). The influence of supply network structure on firm's multiple innovation capabilities: A longitudinal study in the fashion industry. *Management Decision*, 53(10), 2457-2476
9. Devos, J, Van Landeghem, H & Deschoolmeester, D. (2012). SMEs and IT: Evidence for a Market for "Lemons". *The Electronic Journal Information Systems Evaluation* 15(1) 26 -35.
10. Dewan, S. & Hsu, V., (2004). Adverse Selection in Electronic Markets: Evidence from Online Stamp Auctions. *The Journal of Industrial Economics*, 52(4), 497-516.
11. Donaldson, T. and Preston, L. E., (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20(1), 65-91.
12. Fernandes, C., (2013). Analysis of counterfeit fashion purchase behaviour in UAE", *Journal of Fashion Marketing and Management: An International Journal*, 17(1), 85-97.
13. Freeman, R., (1984). *EStrategic Management: A Stakeholder Approach*. Cambridge. Mass.: Ballinger Publishing Co.
14. Guin, U., DiMase, D. & Tehranipoor, M., (2014). Counterfeit integrated circuits: detection, avoidance, and the challenges ahead. *Journal of Electronic Testing*, 30(1), 9-23.
15. Herstein, R., Drori, N. Berger, R. & Barnes, B.R., (2015). Anti-counterfeiting strategies and their influence on attitudes of different counterfeit consumer types. *Psychology and Marketing*, 32 (8), 842-859.
16. Hoecht, A. & Trott, P., (2014). How should firms deal with counterfeiting? A review of the success conditions of anti-counterfeiting strategies. *International Journal of Emerging Markets*, 9(1), 98-119.
17. Inamdar, P., (2015). "PVO"-a solution to brand piracy", *The Business & Management Review*, 5(4), 62.
18. Kim, H., & Karpova, E., (2010). Consumer attitudes toward fashion counterfeits: Application of the theory of planned behaviour. *Clothing and Textiles research journal*, 28(2), 79-94.
19. Kim, J. E. & Johnson, K. P., (2014). Shame or pride? The moderating role of self-construal on moral judgments concerning fashion counterfeit", *European Journal of Marketing*, 48(7/8), 1431-1450.
20. L. Li, (2013). Technology designed to combat fakes in the global supply chain. *Business Horizons*. 56(2), 167-177.
21. Laurell, C., (2016). Fashion spheres – from a systemic to a sphereological perspective of fashion. *Journal of Fashion Marketing and Management: An International Journal*, 20(4), 520-530.
22. Lee, B., Cho, H., Chae, M. & Shim, S., (2010). Empirical analysis of online auction fraud: Credit card phantom transactions. *Expert Systems with Applications*, 37(4), 2991-2999.
23. Li, F. & Yi, Z., (2017). Counterfeiting and piracy in supply chain management: theoretical studies. *Journal of Business & Industrial Marketing*, 32(1), 98-10.
24. Li, L. Ge, R. Zhou, S. & Valerdi, R., (2012). Guest editorial: Integrated healthcare information systems. *IEEE Transactions on Information Technology in Biomedicine*, 16(4), 515-517.
25. Li, S., Xu, L., Wang, X. & Wang, J., (2012). Integration of hybrid wireless networks in cloud services oriented enterprise information systems. *Enterprise Information Systems*, 6(2), 165-187.
26. Liao, Z. & Cheung, M.T., (2002). Internet-based e-banking and consumer attitudes: an empirical study. *Information and Management*, 39(283-295).
27. Łopaciuk, A. & Łoboda, M., (2013). Global beauty industry trends in the 21st century. *In Management, Knowledge and Learning International Conference*, 19-22.
28. Meraviglia, L., (2015). Counterfeiting, fashion and the civil society. *Journal of Fashion Marketing and Management*, 19(3), 230-248.
29. Mishra, A. & Mishra, D., (2013). Applications of stakeholder theory in information systems and technology. *Engineering Economics*, 24(3), 254-266.



30. Pavlou, P. A., & Dimoka, A. (2006). The nature and role of feedback text comments in online marketplaces: Implications for trust building, price premiums, and seller differentiation. *Information Systems Research*, 17(4), 392–414.
31. Pavlou, P.A. & Gefen, D., (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research*, 15(1), 37-59.
32. Petrenkoa, V. V., (2015). Fashion: the Game of Social Meaning as the Cynical Strategy of Consumption. *Procedia. Social and Behavioural Sciences*, 200, 506-513
33. Plaza-Úbeda, J. A., de Burgos-Jiménez, J. & Carmona-Moreno, E. (2010). Measuring stakeholder integration: knowledge, interaction and adaptational behaviour dimensions. *Journal of Business Ethics*, 93(3), 419-442.
34. Pouloudi, A., (1999). Aspects of the stakeholder concept and their implications for information systems development. In *Systems Sciences, HICSS-32. Proceedings of the 32nd Annual Hawaii International Conference on 1999*, (pp. 17-pp). IEEE.
35. Quoquab, F., Pahlevan, S., Mohammad, J., Thurasamy, R., (2017). Factors affecting consumers' intention to purchase counterfeit product: Empirical study in the Malaysian market. *Asia Pacific Journal of Marketing and Logistics*, 29(4), 837-853.
36. Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students*, 5th edition Pearson Education Limited Edinburgh Gate Harlow Essex CM20 2JE England
37. Stiglitz, J. E. (2000). The contributions of the economics of information to twentieth century economics. *Quarterly Journal of Economics*, 115(4), 1441–1478.
38. Wilson, B. J., & Zillante, A. (2010). More information, more rip-offs: Experiments with public and private information in markets with asymmetric information. *Review of Industrial Organization*, 36(1), 1–16.
39. Yao, J. T., (2015). The impact of counterfeit-purchase penalties on anti-counterfeiting under deceptive counterfeiting. *Journal of Economics and Business*, 80, 51-61.
40. Yin, R. (2009). *Case Study Research: Design and Methods*. (4th ed.). London: Sage Publications Limited