# Music Piracy Revisited: Agent-Based Modelling and Simulation of Illegal Consumption Behavior

**Authors :** U. S. Putro, L. Mayangsari, M. Siallagan, N. P. Tjahyani

**Abstract :** National Collective Management Institute (LKMN) in Indonesia stated that legal music products were about 77.552.008 unit while illegal music products were about 22.0688.225 unit in 1996 and this number keeps getting worse every year. Consequently, Indonesia named as one of the countries with high piracy levels in 2005. This study models people decision toward unlawful behavior, music content piracy in particular, using agent-based modeling and simulation (ABMS). The classification of actors in the model constructed in this study are legal consumer, illegal consumer, and neutral consumer. The decision toward piracy among the actors is a manifestation of the social norm which attributes are social pressure, peer pressure, social approval, and perceived prevalence of piracy. The influencing attributes fluctuate depending on the majority of surrounding behavior called social network. There are two main interventions undertaken in the model, campaign and peer influence, which leads to scenarios in the simulation: positively-framed descriptive norm message, negatively-framed descriptive norm message, positively-framed injunctive norm with benefits message, and negatively-framed injunctive norm with costs message. Using NetLogo, the model is simulated in 30 runs with 10.000 iteration for each run. The initial number of agent was set 100 proportion of 95:5 for illegal consumption. The assumption of proportion is based on the data stated that 95% sales of music industry are pirated. The finding of this study is that negatively-framed descriptive norm message has a worse reversed effect toward music piracy. The study discovers that selecting the context-based campaign is the key process to reduce the level of intention toward music piracy as unlawful behavior by increasing the compliance awareness. The context of Indonesia reveals that that majority of people has actively engaged in music piracy as unlawful behavior, so that people think that this illegal act is common behavior. Therefore, providing the information about how widespread and big this problem is could make people do the illegal consumption behavior instead. The positively-framed descriptive norm message scenario works best to reduce music piracy numbers as it focuses on supporting positive behavior and subject to the right perception on this phenomenon. Music piracy is not merely economical, but rather social phenomenon due to the underlying motivation of the actors which has shifted toward community sharing. The indication of misconception of value co-creation in the context of music piracy in Indonesia is also discussed. This study contributes theoretically that understanding how social norm configures the behavior of decision-making process is essential to breakdown the phenomenon of unlawful behavior in music industry. In practice, this study proposes that reward-based and context-based strategy is the most relevant strategy for stakeholders in music industry. Furthermore, this study provides an opportunity that findings may generalize well beyond music piracy context. As an emerging body of work that systematically constructs the backstage of law and social affect decision-making process, it is interesting to see how the model is implemented in other decision-behavior related situation.

**Keywords :** music piracy, social norm, behavioral decision-making, agent-based model, value co-creation

**Conference Title :** ICIESS 2018 : International Conference on Industrial Engineering and Service Science
**Conference Location :** Kyoto, Japan
**Conference Dates :** April 26-27, 2018