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# An alternative analysis method for measuring the impact of academic papers shared on social media and the number of citations obtained based on a support vector machine algorithm

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Information technology affects most aspects of human life. Social Media (MedSos) is an information technology product. One of the uses of social media in the academic world is Altmetrics. This indicator is used to measure the impact or influence of social media on indexed papers. Indonesia is one of the countries with the highest social media users in the world. Therefore, this study is proposed to measure the possibility of a correlation between comments / mentions on papers shared on social media and the number of citations obtained. In solving this problem, we propose a method that uses Text Mining to perform Natural Language Processing (NLP) so that machines can understand the meaning of human language and maximize class distance; we used the Support Vector Machine (SVM) algorithm method for classifying opinions in a scientific article. We found that publications shared on social media will have more citations. Papers that have a greater number of positive sentiments will

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**PROCEEDINGS**

**Editors**

Wolfgang Glänzel, Sarah Heeffer, Pei-Shan Chi, Ronald Rousseau

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# An Alternative Analysis Method for Measuring the Impact of Academic Papers Shared on Social Media and the Number of Citations Obtained based on a Support Vector Machine Algorithm

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## Abstract

Information technology affects most aspects of human life. Social Media (MedSos) is an information technology product. One of the uses of social media in the academic world is Altmetrics. This indicator is used to measure the impact or influence of social media on indexed papers. Indonesia is one of the countries with the highest social media users in the world. Therefore, this study is proposed to measure the possibility of a correlation between comments / mentions on papers shared on social media and the number of citations obtained. In solving this problem, we propose a method that uses Text Mining to perform Natural Language Processing (NLP) so that machines can understand the meaning of human language and maximize class distance; we used the Support Vector Machine (SVM) algorithm method for classifying opinions in a scientific article. We found that publications shared on social media will have more citations. Papers that have a greater number of positive sentiments will have a large number of citations, whereas the number of tweets on a paper has no effect on the value of positive sentiments and tends to be more contradictory.

## Introduction

In its development, information technology is very influential in almost all aspects of life. One example of the results of information technology is social media. Social media is used by people who use it to meet needs, support activities, and open up opportunities to realize new hopes (Akram et al., 2017). The research progress creates this and is one of the developments in communication technology.

Currently, social media has grown rapidly along with technological advances and has penetrated various layers and groups of society. However, there are still few matters concerning social media's impact or influence on researchers' indexed papers in its development. Therefore, sentiment analysis is required regarding this matter based on several factors and criteria. To obtain data with positive or negative review comments that affect the study's h-index or number of citations. Although the h-index has its drawbacks, it is still used as long as there is no better substitute (Rochim et al., 2020).

In previous research, Xiaoli in 2020 discussed dynamics of topic inheritance research and topic innovation by using cross-collection topic models and measuring direct and indirect scientific influence through "citations" (Chen and Han, 2020). Previous research entitled "Sentiment Analysis using a Support Vector Machine" (Nomleni, 2015) discussed the classification of textual documents into several classes, such as positive and negative sentiments and the effects and benefits of sentiment analysis. In this study, the classification of public complaints against the government on social media, Facebook and Twitter, was used with Indonesian language data using a Support Vector Machine (SVM) run in a distributed computer using Hadoop. A study entitled "Adapting SVM for Natural Language Learning: Case Studies Involving Information Extraction" (Li et al., 2008) discussed two techniques to help SVM with the NLP problem's two unique features: unbalanced training data and difficulty obtaining adequate training data. The research problem is how to measure the impact of papers in social media that correlate with several citations. Jason in 2010 stated that Altmetrics (social media in scholars)

# Do hijacked journals attract dishonest authors?

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## Abstract

This research in progress studies academic misconduct as it related to hijacked journals. There is a common belief in the literature that naïve authors submit papers to fake journals. This study demonstrates that there is a group of dishonest authors who are attracted by the fast publication with no peer review process that is offered by hijacked journals. The results show that the average share of plagiarism in an examined sample of 500 papers was 21.0%. Plagiarism was not detected only in 28.2% of the papers. These results raise concerns not only about cyber-criminals but also about authors who exploit hijacked journals to improve their publication records.

## Introduction

Hijacked journals create a challenge for academic publishing. Hijacked journals represent a type of cyber-crime. Hijacked journals mimic legitimate journals (Lukić 2014; Bohannon 2015; Dadkhah 2015; Jalalian & Dadkhah 2015; Asadi et al. 2017; Shahri et al. 2018) in order to cheat potential clients. These cloned journals exploit the titles and ISSNs of original journals and fraudulently collect fees from authors.

There is a common belief that the potential clients of such journal are naïve authors who are not able to distinguish between honest and fraudulent journals (Watson 2015; Dadkhah & Borchardt 2016). However, is this true? In other words, are naïve authors the only group of authors who submit their articles to hijacked journals? This question has not yet been investigated in the literature. There is an alternative hypothesis that some authors choose to exploit hijacked journals and submit their articles in order to increase their publication records. There is evidence of some plagiarism cases in hijacked journals and of the recycling of already published texts to replenish the archives of fraudulent journals (Abalkina 2021). Dadkhah et al. (2016) detected some cases of the circulation of texts between predatory and hijacked journals. Abalkina (2020) demonstrated cases of translation plagiarism in papers submitted to the hijacked *Journal of Talent Development and Excellence*.

In this study, I argue that dishonest authors constitute another group of clients who submit their articles to hijacked journals. Dishonest authors are attracted by fraudulent hijacked journals that offer a fast publication process with no peer review. To test this hypothesis, the texts of papers published in hijacked journals were checked for text similarities. Plagiarism is considered to be one of the most serious forms of academic misconduct (Resnik et al. 2015). Authors who violate academic ethics can be considered dishonest. Plagiarism detection in articles submitted to hijacked journals can shed light on the behaviour of the authors who submit to such journals.

This study is important for several reasons. First, there is a rising concern about the proliferation of hijacked journals and fraudulent publishers (Dadkhah & Borchardt 2016; Memon 2019). Second, recent evidence suggests that cyber-criminals compromise information from the webpages of peer-review journals and their content in international citation databases (Al-Amr 2020). Such behaviour constitutes a significant challenge for the academic community. Third, a considerable amount of literature has developed around the topic of academic misconduct and plagiarism in scientific papers (Fanelli 2009; Pupovac & Fanelli 2015). However, these studies do not take into account possible violations of academic ethics in hijacked journals. Fourth, research has shown that the high level of competition in academia, as well as the ‘publish or perish’ strategy, can increase the number of publications in predatory journals (Kurt 2018). Publishing in hijacked journals can be another possible way for academics to improve their publication records and cheat their universities.

# Do the propensity and drivers of academics' engagement in research collaboration with industry vary over time?

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## Abstract

This study is about public-private research collaboration. In particular, we want to measure how the propensity of academics to collaborate with their colleagues from private firms varies over time and whether the typical profile of such academics change. Furthermore, we investigate the change of the weights of main drivers underlying the academics' propensity to collaborate with industry. In order to achieve such goals, we apply an inferential model on a dataset of professors working in Italian universities in two subsequent periods, 2010-2013 and 2014-2017. Results can be useful for supporting the definition of policies aimed at fostering public-private research collaborations, and should be taken into account when assessing their effectiveness afterwards.

## Introduction

The ability of industry to exploit the results of academic research is a distinctive competence of advanced economies. Policies aimed at developing such ability are among the priorities of an increasing number of governments (Fan, Yang, & Chen, 2015; Shane, 2004). Public-private research collaboration is one of the main modes to realize knowledge transfer. Understanding the motivations underlying joint cooperation is an important step towards formulating policies and initiatives aimed at increasing the frequency of collaboration.

The main objective of this work is to investigate to what extent frequency of public-private research collaboration change over time, alongside the main drivers underlying the academics' propensity to collaborate with industry. Decision makers then would be able to formulate incentive schemes based on those drivers that show not only more weight but also more stability. A critical step in the study is the identification of the main drivers that could influence the propensity of academics to engage in research collaborations with industry. Previous literature suggests that they are to be found in the individual characteristics of the academic and the environment he or she works in (Zhao, Broström, & Cai, 2020; Llopis, Sánchez-Barrioluengo, Olmos-Peñuela, & Castro-Martínez, 2018; Abramo, D'Angelo, & Murgia, 2013), although personal characteristics seem to be more important than those of the environment (D'Este & Patel, 2007).

Most works on the topic are based on surveys, which poses limits on the scale of observations (Zhao, Broström, & Cai, 2020; Weerasinghe & Dedunu, 2020; Llopis, Sánchez-Barrioluengo, Olmos-Peñuela, & Castro-Martínez, 2018; Thune, Reymert, Gulbrandsen, & Aamodt, 2016). To overcome these limits, we adopt instead a bibliometric approach, analyzing the co-

# Measuring the impact of clinical data in terms of data citations by scientific publications

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## Abstract

To explore the characteristics of highly cited data records, and exploring the relationship between data sharing/reuse of data records and the socio-economic burden of diseases / funding, the basic information of clinical data records were sorted. We extracted the subject words and exploring the diseases involved in the data records, so as to achieve the matching between the data records and diseases. We found that the data storage type of the DCI platform is data sets mainly, but the most cited data type is repositories. And the number of highly cited papers in data records is much lower than that of highly cited papers in the same field. The highly cited data records can reflect diseases of high concern to a certain extent. The disease related data records' sharing/reuse is positively correlated with its DALYs / foundation counts. Results shows that the data storage format should be further unified, the citation format should be further standardized. The data records on Chronic diseases and lifelong acquired diseases, such as Lower Respiratory Infections, Diabetes Mellitus and HIV/AIDS should be paid more attention.

## Background

With the coming of the era of big data, more and more data records are measured and stored. The generation of massive data has brought unprecedented "data explosion". Almost every research field is eager for open access and use of data. Data citation is very necessary in order to protect the rights and interests of data providers and ensure the scientific and traceability of data. The practice of formal data citation includes data references and bibliographic references in the reference section of a publication. But the study showed that "the informal data citation in the main text of articles is far more common than formal data citations in the references of articles" (H. Park, You, & Wolfram, 2018). Management measures for data sharing and reuse are gradually implemented with more and more platforms for open data.

The current situation of data reference needs to study the data reference in specific data records. Informal reference data is difficult to track, but it is still an important way for researchers to share and reuse data, especially in the fields of life science and biomedicine field (H. Park & Wolfram, 2017). At the beginning of the 21st century, the genome science committee of Japan's Council for Science and Technology call for that "To assure scientific progress, all data and results from human genome research should be made public. (Triendl, 2000)" In August, 2013, there were some posters began appearing in doctor's practices in England to establish a unified management database of patients' electronic health records and use them for scientific research. The practice of sharing health records data is conducive to establish the National Health Service(NHS) system in England (Callaway, 2013). The Swiss National Science Foundation (SNSF) strongly supports the sharing of data and open access to data. They hope to achieve the findability, accessibility, interoperability and reusability of data through depositing the scientific data in any recognized digital archive (Egger & Kalt, 2017). In recent years, the application of open data records in the medical science field has helped the containment of infectious diseases, the research of cell and molecular biology, and the application of clinical drugs to solve medical problems. Data sharing is very important for all medical science research, especially for the outbreak of new and unexplored diseases. The publication of scientific paper cannot disclose relevant information at the first time, while the opening of