A Systematic Review on Application Blockchain Technology in Music Industry

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Abstract

Blockchain technology had well-diversified applications in the entertainment industry, especially in music. This review paper is the consolidation of research trends related to the usage of blockchain technology in music, visualized through Review analysis. The active authors, organizations, journals, and countries involved in the research "usage of blockchain technology in music" were highlighted in this review. The leading Journal was Strategic Change. The most active country was the United Kingdom. The leading organization engaged in research regarding the usage of blockchain technology in music was the Middle Sex University of United Kingdom. The most active author who had made valuable contributions related to the usage of blockchain technology in music was O'Dair M.

Keywords: BlockChain, Music, Reviews, Review analysis, Meta Analysis

1. Introduction

Blockchain in layman's terms is an information recording system where it's almost impossible for hacking and any kind of changes and modifications. Blockchain technology is used for diversified purposes like security, banking, financial intermediation, stock market, election, advertising, health care, tax regulation, entertainment industry, airline shipping, etc. Blockchain technology is also used for the computerized industrial sector; for handling the health care sector during pandemic.

Blockchain technology had a great role in the music industry. Blockchain technology had been used for music streaming; decentralized music sharing model; computer-based piano composition. But there are numerous changes associated with the migration to blockchain technology in the music industry. Blockchain technology is highly disruptive to several industries, especially the recorded music industry. The problems associated with security, piracy handling; governance and management of musical rights; for a better way of loyalty payments in the music industry; copyright issues can be tackled through blockchain technology.

This review paper contains four sections. The first section deals with a general introduction of blockchain technology and its diversified applications, especially in the music industry, followed by a discussion of the research methodology used in this paper. The results and discussions related to the application of block technology in the music industry were included in the third section of this paper. The fourth section deals with the conclusion. The following research objectives and research questions were framed for conducting Review analysis systematically.

1.1 Research Objectives

a) To consolidate the scientific papers on the research regarding the use of block chain technology in music
b) To find out the trends related to research in the usage of blockchain technology in music

1.2 Research Questions

a) Who are the active researchers working on the usage of blockchain technology in music?
b) Which are the main research organizations and countries working on the usage of blockchain technology in music?
c) Which are the leading journals publishing scientific papers on the usage of blockchain technology in music?

2. Research Methodology

Scopus files had been used for this article. For the article selection, the Boolean used was TITLE-ABS-KEY(Blockchain music). All the tables in this paper were created by using Microsoft Excel and Meta Analysis. Grammarly was used for spelling and grammar checks. Mendeley was used for article review and citation. This paper had been inspired by Review analysis in its presentation style, analysis, and methodology from the works.

3. Results and discussion

3.1 Results

The first search on Scopus had obtained 56 documents, in English languages, where all articles were in English. The document categories were classified and shown in Table 1. This review had selected only the peer-reviewed articles and all other documents had not been considered. Thus after using filters "Article" and "English" the second round search produced an outcome of 17 English articles (both open access and others) and had been used to conduct Review analysis and visualization using Meta Analysis. The English research articles in this domain had been shown in Table 2. Co-authorship analysis of top authors had been shown in Table 3. For a better presentation of the analysis, the parameters used were the minimum number of documents of an author as one and the minimum number of citations of authors as one. This combination plotted the map of 21 authors, in eight clusters. The overlay visualization map of co-authorship analysis plotted in Table 3, points out the major researchers with their strong co-authorship linkages and clusters involved.

The citation analysis of top authors had been shown in table 1. For the citation analysis, the parameters used were the minimum number of documents of an author as two and the minimum citations of an author as one.

Table 1: Highlights of most active authors

Description	Authors	Documents	Citations	Average citations per documents	Link strength
Authors with the highest publication, links, and citations	O' Dair M.	4	48	12	3

In Co-occurrence analysis, we had used all keyword analyses, by keeping the minimum number of occurrences of a keyword as 2. This combination plotted the map of 11 thresholds, in three clusters. The overlay visualization of co-occurrence analysis of keywords has been shown in Table2. The leading organizations engaged in research on "usage of blockchain technology in music" had been found out by

the volume of publications and citation analysis, the parameters used are the minimum number of documents of an organization as one and the minimum number of citations of organizations as one. The leading organization in the research regarding "usage of blockchain technology in music", with the highest number of publications and citations, was the Middle Sex University, United Kingdom(Refer to table 2).

Table 2: Highlights of the most active organization

Organizations	Country	Documents	Citations	Average Citations per document
Middle Sex University	United Kingdom	4	48	12

Co-authorship analysis of the countries engaged in the research on "usage of blockchain technology in music" had been shown in Table3. The overlay visualization map of co-authorship analysis plotted in Table3, points out the main countries with their strong co-authorship linkages and clusters involved. The citation analysis of top countries had been shown in table 3, along with co-authorship links. For the citation analysis, the parameters used were the minimum number of documents of a country as one and the minimum citations of the country as one.

Table 3: Highlights of Active Countries

Description	Country	Documents	Citations	Average citation
The country with the leading publication and citations,	United Kingdom	5	48	9.6

The most active country in this research domain was the United Kingdom, with the leading position in publications and citations.

The most active journals engaged in the research were identified through analyzing co-authorship links and citation analysis. Highlights of the most active and relevant journals related to "usage of blockchain technology in music" are shown in table 4. Table 4 shows the journal activity of this research domain through parameters of publication volume and citations.

Table 4: Analysis of journal activity

Description	Journal details	Documents	Citations	Average citations per documents	Links
Journal with the highest publications, links, and citations	Strategic Change	2	45	22.5	1

4.　Conclusion

Blockchain technology had been used for the music industry, especially for copyrights and hassle-free distribution. From the above discussion on results from visualization regarding the Review patterns in the research regarding usage of blockchain technology in music, this research had observed a progressive growth in research interest regarding usage of blockchain technology in music since 2017, and positive momentum. This highlights the importance and potential of this conducting research on the usage of blockchain technology in music (Refer to Table 2).

This research had identified the most leading authors who were engaged in research regarding the usage of blockchain technology in music. O'Dair M. was the most active author of this research domain with the highest publication, citations, and links respectively (Refer to table 1). Several keywords were actively used and the most frequently used keywords were "blockchain", "copyright protection" and "music industry". However, the latest researches were concentrated on "coding standards", "mobile telecommunication system" "digital security" and "digital entrepreneurship" (Refer to Table 4). The overlay analysis of top countries researching the usage of blockchain technology in music indicates that the United Kingdom was the leading country relating to the highest number of citations and publications (Refer to Table 5). There are several organizations engaged in research on the usage of blockchain technology in music and the most leading organization, producing the highest number of scientific papers and citations was the Middle Sex University of United Kingdom. The top journal of this research domain was identified as "Strategic Change". This journal is in a leading position from the others in the volume of publications, citations, and links.

From these wide sources of information, researchers can focus on top journals where they can identify the most relevant and highly cited articles regarding the usage of blockchain technology in music. The usage of blockchain technology in music had great scope for future research and this research domain offers a new avenue for researchers and future research can be on innovations in blockchain technology, especially the usage of blockchain technology in music.

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