



ERP Post Implementation Success: A Bibliometric Analysis

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Abstract. Purpose: Present a review of the research papers on ERP post implementation success through bibliometric analysis and identify the foremost future research directions in this domain.

Methodology: 125 articles extracted from Scopus for the period of 2003-2022 are reviewed. The methodology of present study consists of two steps: selection of keywords is the first step while applying the analysis tool is the second step. At first step we searched «ERP post implementation success» in the search bar of Scopus and at second step articles reviewed by applying bibliometric analysis through VOSviewer.

Findings: The outcomes of the analysis provide bibliometric analysis of ERP post implementation success. In terms of annual production of publications, year 2012 is the leading year with 16 publications while United States is the leading country with maximum 21 publications. On the other hand, computer science area is more active in publications with 32% of total 125 articles.

Implications: The results of the study provide insights which will help the scholars to understand the future directions of ERP.

Originality: We believe that this study will add values to comprehend the opportunities and threats relating to enterprise resource planning.

Keywords: ERP, Post-implementation, bibliometric analysis, success, co-occurrence of keywords, VOSviewer, Scopus, research papers, citation analysis, co-authorship analysis.

Results and Analysis

Implementation of enterprise resource planning (ERP) system is complicated, lengthy, and expensive process which leads to face severe failure. Therefore, it is necessary to perform post implementation evaluation of an ERP project to know how much system is succeeded to achieve its programmed objectives.

The results of the overall analysis are presented and reported here. Logically, with the research goal of the study, results highlight the dimensions that are: 1) descriptive analysis of annual publications, 2) top productive countries, 3) documents by subject area, 4) co-citation analysis, 5) bibliographic coupling analysis, 6) citation analysis, 7) co-occurrence of keywords analysis and 8) co-authorship analysis on the entire sample of documents extracted from Scopus.

Descriptive analysis of annual publications

In terms of number of papers published on enterprise resource planning (ERP) post implementation success, figure 1 indicates the growing trend in the period of 2003 to 2022. The initial time of the analysis period till 2009 reveals that annual average publication is very low and near to the ground. On the other hand, period 2010 to 2014 is the massive productive period with 16 articles in 2012.

Top ten productive countries

Figure 2 illustrates the countries having maxi-

mum published articles in the domain of successful ERP. United States is the most significant countries with 21 publications out of 125 total publications. China and United Kingdom stand at second and third rank and chasing United States with 13 and 10 publications respectively. Figure 2 also indicates that Australia (9), Indonesia (8), Canada (6), Iran (6), Taiwan (6), France (5) and Malaysia (5) are active regions in the publication of ERP.

Documents by subject area

The most productive publication areas are shown in figure 3. Computer science, business management, decision sciences and social sciences are most productive areas in the field of ERP. Computer science is the most productive area with 32% of total 125 publications extracted from Scopus for the period of 2003-2022. Business management, decision sciences and social sciences are also hot productive area chasing computer science with 22%, 15.8% and 11.2% respectively. Moreover, engineering (6.2%), economics (4.2%), mathematics (2.7%), arts and humanity (1.2%), chemical engineering (0.8%), energy (0.8%) and others sectors (3.1%) are more active areas which considered by the scholars.

Co-citation analysis

The co-citation analysis is commonly used technique in bibliometric analysis to identify the most

Documents by year

Scopus

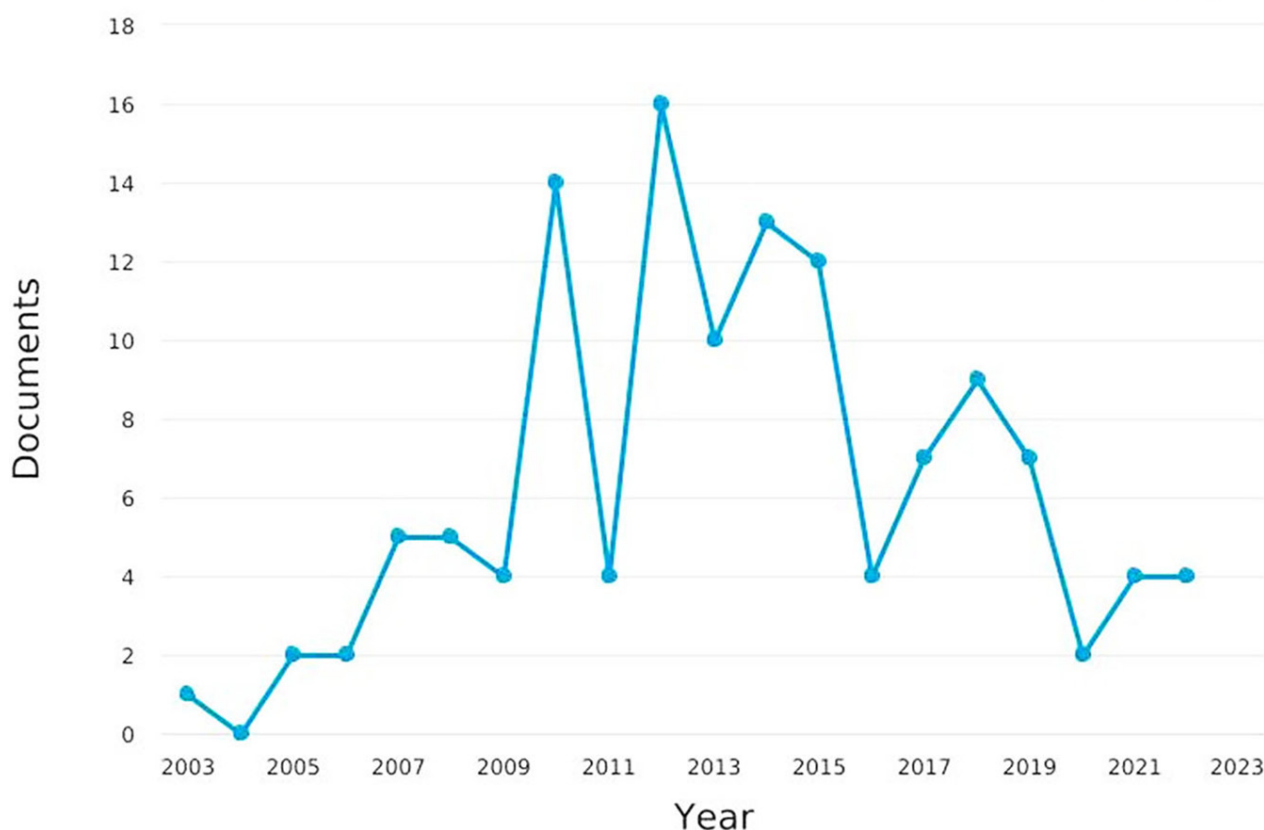


Figure 1 – Annual Publications

Documents by country or territory

Scopus

Compare the document counts for up to 15 countries/territories.

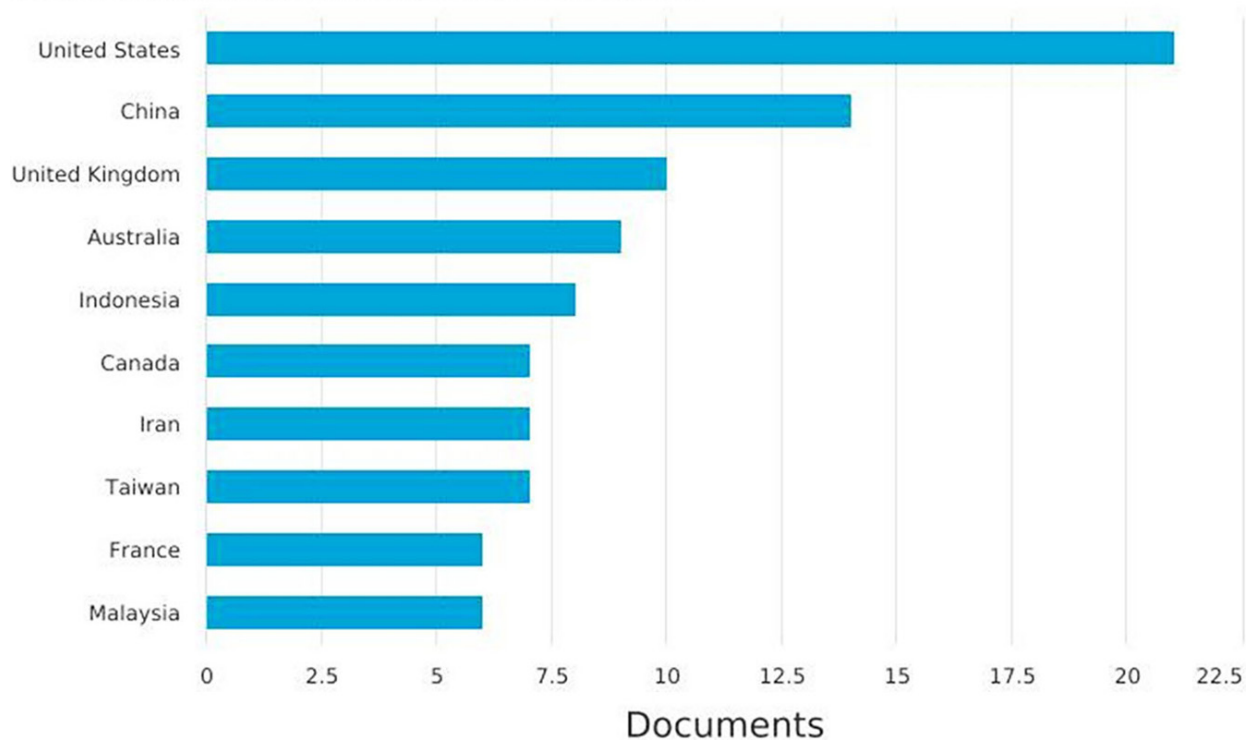


Figure 2 – Top ten productive countries

Documents by subject area

Scopus

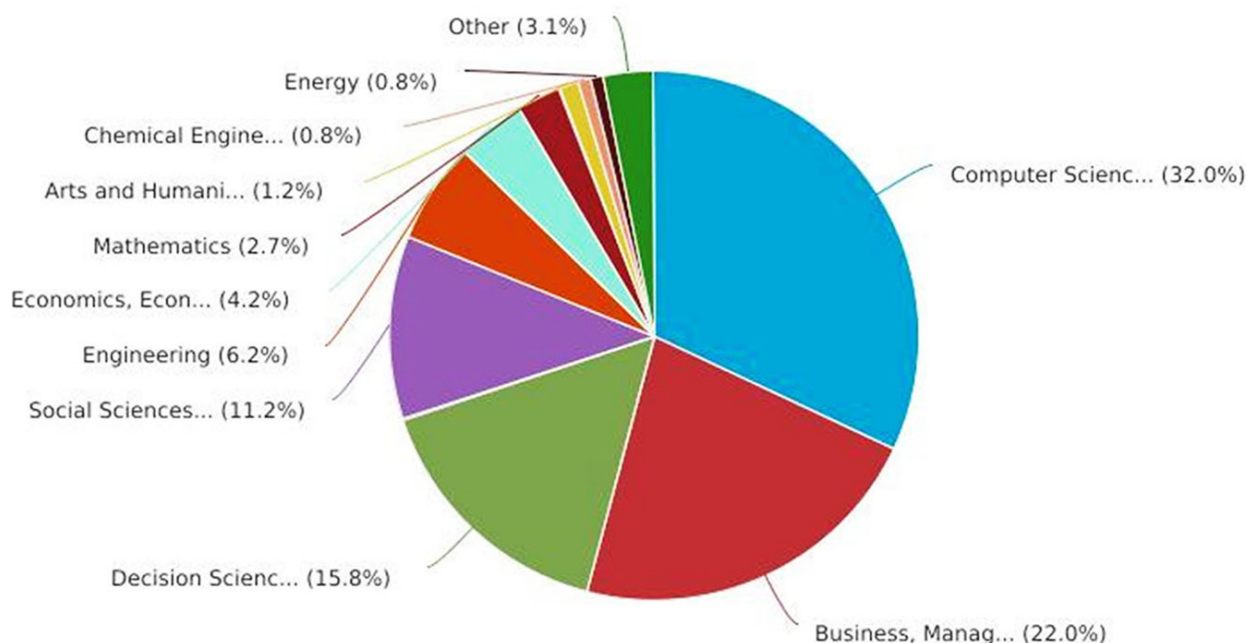


Figure 3 – Documents by subject area

significant publications in any research field (Goyal & Kumar, 2020). Co-citation means that most frequently cited documents in the field of research (Culnan, 1987). Author co-citation analysis is applied in

the present research work by applying 15 citations per author and 61 authors were concluded. Co-citation reveals that two journals, references, sources and authors are cited in one paper at the same time (Li &

Xu, 2021). Co-citation of author analysis is presented in figure 4 which is divided into three clusters. The size of the nodes represents the degree of the citation. The greater nodes means that publication is cited more time (Li & Xu, 2021). According to the results, Ifinedo, Markus, Davenport and Tanis are the most cited authors.

Bibliographic coupling analysis

Bibliographic coupling analysis indicates the references shared by two articles and maximum bibliographies means stronger connection between them (Zupic & Čater, 2014). Figure 5 signifies bibliographic coupling of countries. This figure comprises four clusters and show that United States is more energetic in the research of ERP post implementation success. China is also in the race of publications and the size of node reveals that Chinese industries are utilizing ERP systems properly.

Citation analysis

Citation analysis presents a crucial summary of the most leading and highly cited countries, authors, documents and sources. By applying threshold of 1 document of a source, 220 organizations were finalized for citation analysis. Figure 6 presents the network visualization of most cited organizations in the field of ERP system. The citation analysis illustrates that the highly cited publications were produced by the scholars and practitioners of school of informa-

tion technology.

Co-occurrence of keyword analysis

Co-occurrence of keywords analysis is a method to identify the relationship among various items in the data (de la Hoz-Correa, Muñoz-Leiva, & Bakucz, 2018). It is a process of matching the words that happen collectively (Johnson & Samakovlis, 2019). Co-occurrence of keywords analysis is based on the link strength of the words that come into sight in the same keywords list (Zhuang, Ye, & Lieske, 2019). Figure 7 presents the network visualization of co-occurrence of most repeated keywords by applying minimum number of occurrence of a keyword 3 and 80 keywords met the threshold. This analysis is divided into 7 clusters and highly repeated keyword is «enterprise resource planning».

Co-authorship analysis

Co-authorship is a demonstration of logical networking in the research. In this demonstration two or more authors produce a study collectively (Casillas & Acedo, 2007). This analysis presents collaboration of work not only national level but at international level as well (Kumar & Jan, 2013). Organizational co-authorship analysis was applied in the present study by using threshold of minimum 2 documents of an organization and out of 220 organizations only 7 organizations met the threshold that presented in the figure 8.

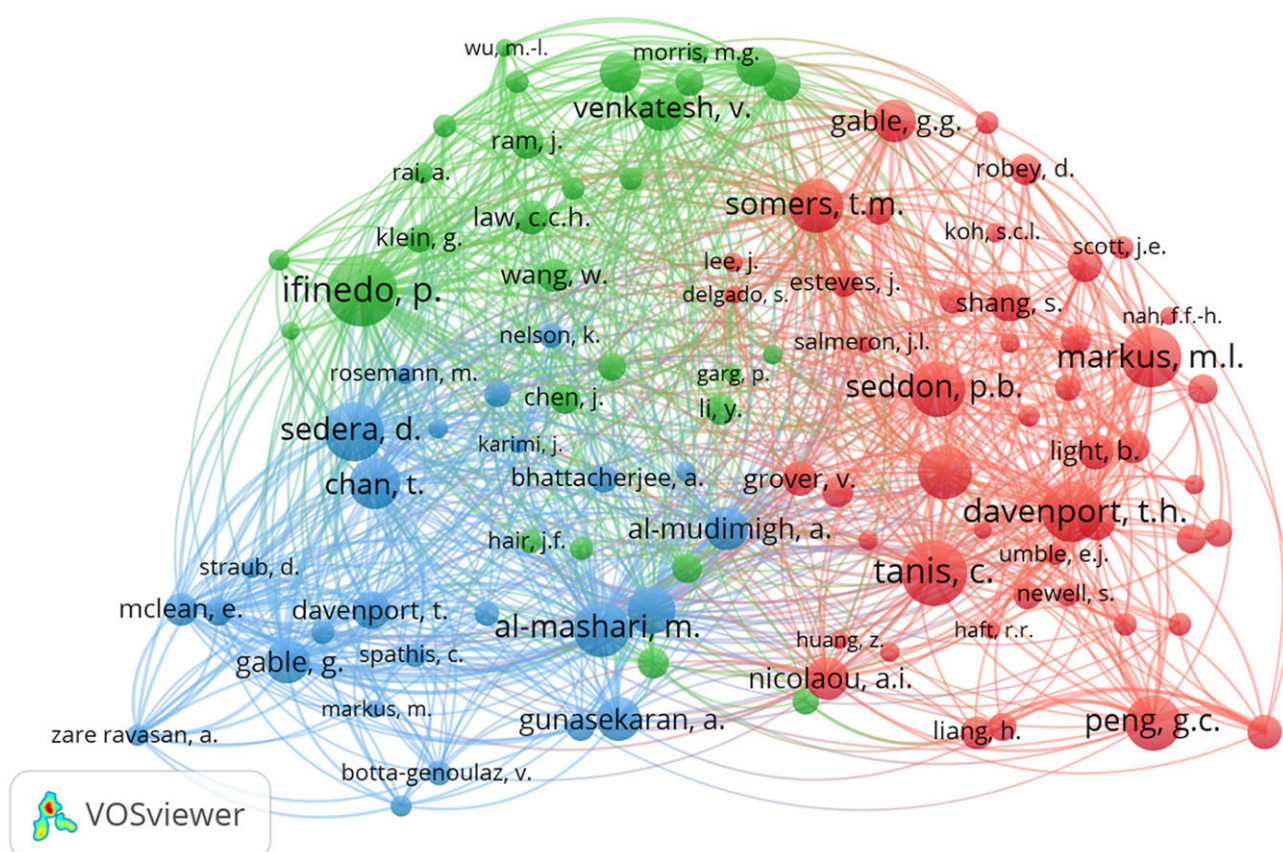


Figure 4 – Co-citation analysis

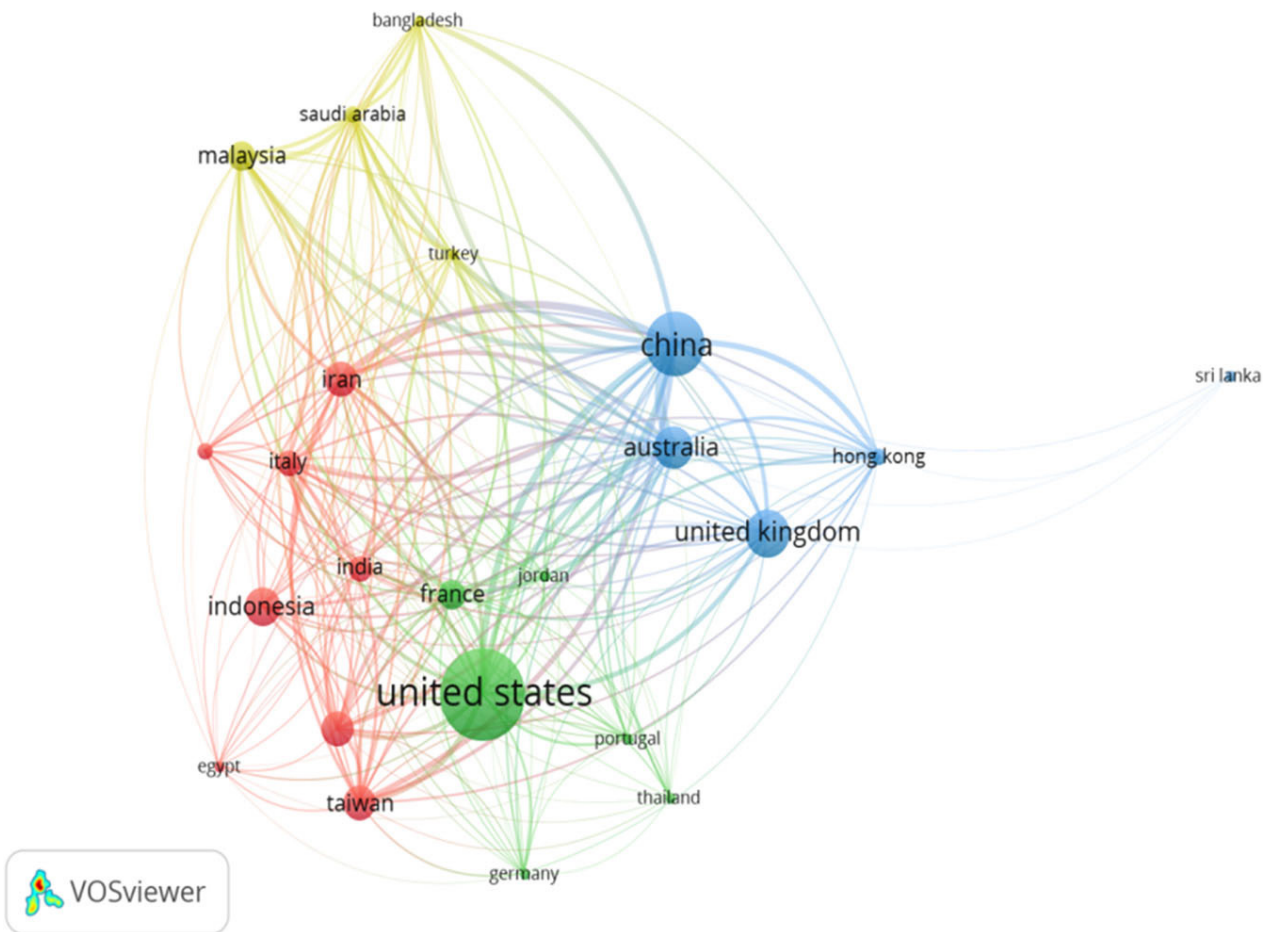


Figure 5 – Bibliographic coupling analysis

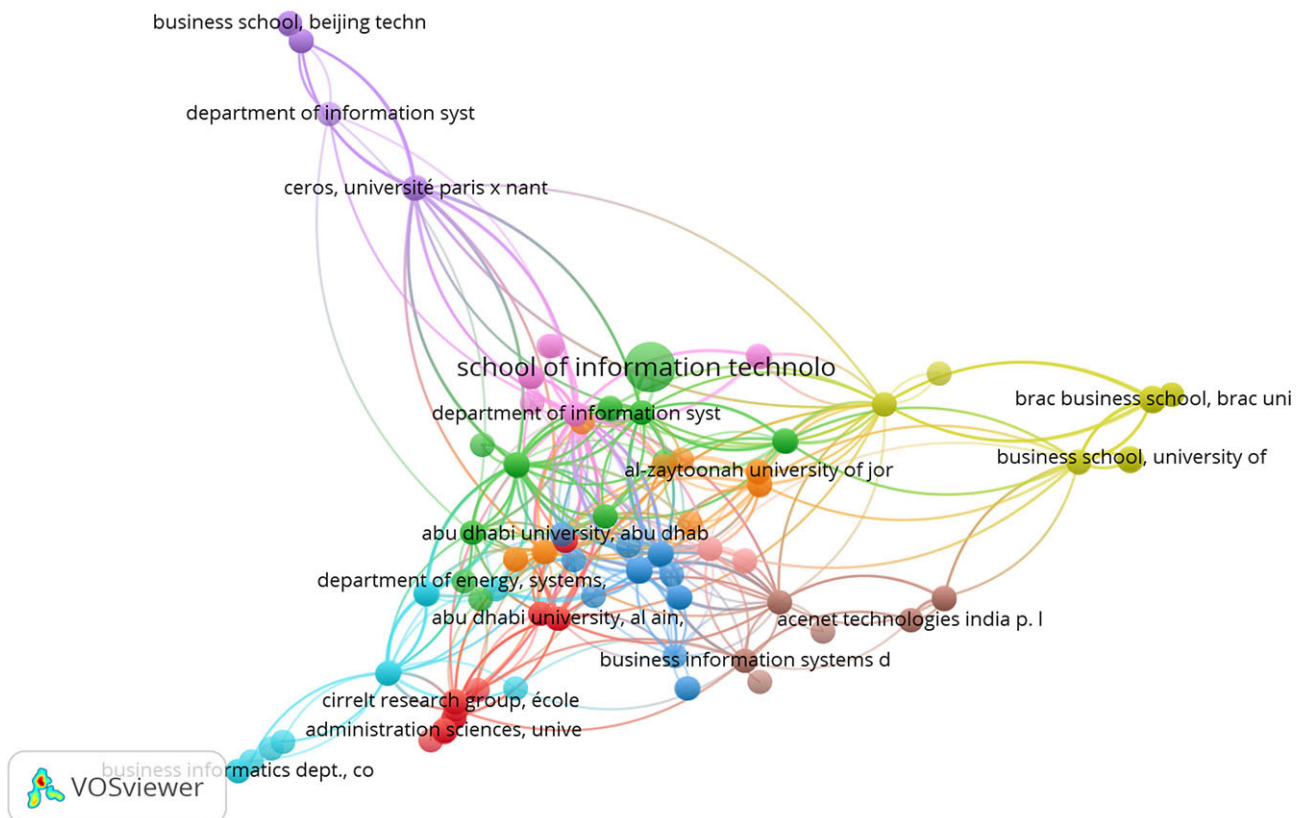


Figure 6 – Citation analysis

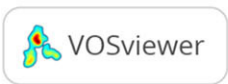


Figure 7 – Co-occurrence of keyword analysis

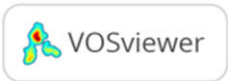


Figure 8 – Co-authorship analysis

Conclusion

This bibliometric analysis intended to find out the most active authors, documents, countries and organizations and suggest the future directions in the field of enterprise resource planning. The results of the study unveil an average trend of publications. Various bibliometric analysis techniques such as descriptive analysis of annual publications, top productive countries, documents by subject area, co-citation analysis, bibliographic coupling analysis, citation analysis, co-occurrence of keywords analysis and co-authorship analysis were applied in this study on the entire sample of documents extracted from Scopus. Results indicate that 2012 is the leading year with

16 publications out of 125 total publications. In terms of area wise publications and bibliographic coupling analysis, United States is most active in number of publications. Co-occurrence of keywords analysis demonstrates that enterprise resource planning is the most repeated keyword used by the researchers. Present study has some limitations such as articles reviewed in this study were extracted only from Scopus database and others were ignored. Another limitation is only published articles were reviewed. The results of the study provide insights which will help the scholars to understand the future directions of ERP.

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Кәсіпорын ресурстарын жоспарлауды енгізгеннен кейінгі кезеңдегі табыс: библиометриялық талдау

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Аңдатпа. Мақсаты – кәсіпорын ресурстарын жоспарлауды енгізгеннен кейінгі кезеңдегі табыс тақырыбындағы мақалаларға библиометриялық талдау және осы саладағы ең маңызды болашақ зерттеу бағыттарын анықтау.

Әдістеме: 2003-2022 жылдар аралығындағы Scopus-тан алынған 125 мақала қарастырады. Зерттеу жұмысының әдістемесі екі кезеңнен тұрады: бірінші қадам – кілт сөздерді таңдау, ал талдау құралдарын қолдану – екінші қадам. Бірінші қадамда біз Scopus іздеу жолағында «Кәсіпорын ресурстарын жоспарлауды енгізгеннен кейінгі кезеңдегі табыс» тақырыбын іздедік, ал екінші қадамда табылған мақалалар VOSviewer көмегімен библиометриялық талдауды қолдану арқылы қаралды.

Нәтижелер: Талдау нәтижелері кәсіпорын ресурстарын жоспарлауды іске асырудан кейінгі табысты библиометриялық талдау ретінде келтірілген. Басылымдардың жылдық өндірісі бойынша: 2012 жыл 16 жарияланыммен жетекші жыл болды, ал Америка Құрама Штаттары ең көп дегенде 21 жарияланыммен жетекші ел болып табылады. Екінші жағынан, информатика саласы басқа басылымдар арасында белсендірек: жалпы 125 мақаланың 32%-ы тиесілі.

Қорытынды: Зерттеу нәтижелері ғалымдарға кәсіпорын ресурстарын жоспарлаудың болашақ бағыттарын түсінуді жеңілдетеді.

Өзектілігі: Бұл зерттеу нәтижелері кәсіпорын ресурстарын жоспарлауға қатысты мүмкіндіктер мен қауіп-қатерді түсіну құндылығын арттырады деп сенеміз.

Кілт сөздер: кәсіпорын ресурстарын жоспарлау, жүзеге асырудан кейінгі кезең, библиометриялық талдау, табыс, кілт сөздердің бірігуі, VOSviewer, Scopus, зерттеу жұмыстары, дәйексөздерді талдау, бірлескен авторлық талдау.

Успех внедрения ОПР: библиометрический анализ

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Аннотация. Цель: Представить обзор исследовательских работ по успеху внедрения ОПР с помощью библиометрического анализа и определить основные будущие направления исследований в этой области.

Методология: Рассматриваются 125 статей, извлеченных из базы Scopus за период 2003-2022 годов. Методология настоящего исследования состоит из двух этапов: выбор ключевых слов является первым шагом, а применение инструмента анализа является вторым шагом. На первом этапе мы искали «успех внедрения ОПР» в строке поиска Scopus, а на втором этапе просматривали статьи, применяя библиометрический анализ через VOSviewer.

Выводы: Результаты анализа обеспечивают библиометрический анализ успеха внедрения ОПР. С точки зрения ежегодного выпуска публикаций, 2012 год является ведущим годом с 16 публикациями, в то время как Соединенные Штаты являются ведущей страной с максимум 21 публикацией. С другой стороны, область информатики более активна в публикациях с 32% от общего числа 125 статей.

Последствия: Результаты исследования дают представление, которое поможет ученым понять будущие направления ПОР.

Оригинальность: Мы считаем, что это исследование добавит ценности для понимания возможностей и угроз, связанных с общеорганизационным планированием ресурсов.

Ключевые слова: ОПР, пост-внедрение, библиометрический анализ, успех, совместное использование ключевых слов, VOSviewer, Scopus, исследовательские работы, анализ цитирования, анализ соавторства.

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