

Evolution of Topics in Working Capital in Small Medium Enterprise: A Systematic Review Using Bibliometric Analysis

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Abstract

Working capital is the blood of every business. Out of total 51 disciplines on web of science nine Odisciplines have been selected for the current research (business, management, business finance, economics, operation research management science, ethics, social science interdisciplinary, education educational research, multidisciplinary science). The aim and the purpose of the study is to identify overall development and core topics in the research area. Overlay visualization, network visualization and density visualization using keyword co-occurrence networks have been extracted. It is identified that innovation, growth, management, determinants, entrepreneurship and firm performance are some core and hot topics studied in the working capital of SMES.

Keywords: Co-occurrence network, bibliometric, working capital.

I. INTRODUCTION

Working capital refers to the financial metrics that represent the liquidity for carrying out operations that are available to the business, entity, or organization which also involves government entities. In a company alongside fixed assets like plants and other equipment's, working capital is considered an important part of the overall operating capital. A company may have assets and may be profitable but if they have a shortage in the liquidity in case if their assets could not be converted into ready cash readily. Positive working capital is needed for ensuring a firm is able for continuing its operations and has sufficient funds for satisfying its short-term debt maturity and additional operational expenditure.

Small and Medium-sized Enterprises or SMEs as it is known or the Small and Medium-sized Businesses refers to those businesses that have lower personnel staff that falls below a certain limit. This "SME" abbreviation is being applied by international organizations like European

Union, World Bank, World Trade Organization, and the United Nations.

It has been observed that the total number of SMEs majorly outnumber the larger companies in wider margins as well as can employ a larger population size. For instance, the SMEs in Australia make up 98% of all the businesses in Australia by producing 1/3rd of the overall GDP as well as providing employment opportunities to over 4.7 million population. In Chile, by the year 2014, around 98.5% of companies were categorized as SMEs. Same in Tunisia, self-employed workers accounted for around 28% of the working non-farm population and the companies that have less than 100 employees were around 62% of the total population employed. The SMEs in the United States of America are responsible for generating over half of the job employment, 40% of the GDP. In the Financial Year 2014, around 1,70,000 SMEs in America generated an export income of about \$180 billion of visible to the TPP nations.

Still, there is a wider untapped potential for the small businesses for increasing the revenues as well as providing employment opportunities.

The significance of working capital can't be burdened ample as it is a strong indicator of a business's potential to manipulate upcoming expenses. Having little working capital makes it very hard to efficaciously run a enterprise because the fee of day to day costs relies upon on having these liquid belongings on hand when needed. Effective management of the working capital is very essential factor needed for growth in a sustainable manner. In case a company becomes insolvent for managing of day to day expenditures, goods production and the offer will also cease to come. This will result in the unsatisfaction of ghe major existing and new consumers and from that instance Ino new customers would look into buy it invest in that particular company. For restarting the process of production, company has to organize funds from the capital of the firm. This step may provide assurance for a little time but it may affect the stability of the company on a longer period as they jeopardize the acquiring and maintaining of the equipments and assets.

Hence, this is important for any organization to procure and save working capital as a tool for effective administration of the working of the firm, ability to realistically verify the firms requirement related to working capital, and thus provide the owners of the businesses sufficient period for finding out a solution. Working capital aids to meet temporary expenses, inclusive of buying raw materials, charge of salaries and meeting overhead expenses. Some of these repayments cannot be delayed. Having adequate liquidity helps the uninterrupted drift of production; thus, preserving the solvency of a business.

2. METHODOLOGY

Bibliometric evaluation is defined as a statistical comparison of posted scientific articles, books, or the chapters of a book, and it is a useful way to measure the effect of eBook in the scientific community. The educational

effect of a piece of research can be gauged with the aid of the quantity of times it has been stated via other authors. The learn about graph of a bibliometric evaluation or citation classics is a broadly used technique to investigate the influence of an article. The dedication of a quotation hierarchy listing in one strong point of the clinical field, shaped by means of several journals that are unique to one specialty, is a method that requires greater time and expertise as compared to the bibliometric evaluation of just one journal.

Bibliometric analysis is popular as well as a difficult technique for to explore and analyze the created volume of scientific information. This allow for unpacking of evolutionary nuance related to a particular field, through focusing on the developing of the various field areas. But eventually the benefits while searching for commercial enterprise is newer and in many instances it is underdeveloped. The application of Bibliometric analysis is allied by the scholars for various reasons like uncovering of developing trends for performances of journals and articles, models of collaboration and components of research as well as for exploring intellectual form of specified area in current literatures.

This particular method is being used to analyze development of all specific trends in research in the social science field. Some of them are as follows:

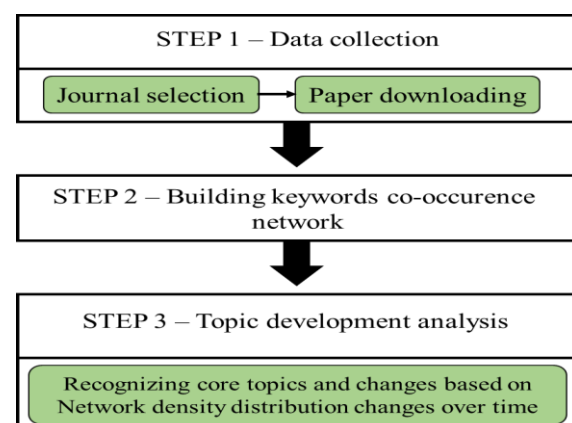


Figure 1. Methodological framework

(1) Collect Journal Publication Data: So as in understanding the frontiers of the research in the field of working capital procurement for

SMEs and to obtain the understanding related to the core topics related to the research in this field as the main source of data for us. We apply eight disciplines by Google Scholar in this research as our guide for journal selection.

From each discipline, journals were selected and that was on the basis of opinions of the experts and impact factors. Additionally, some journals are also selected on basis of ethics, economics, comprehensive journals, educational review, etc. The papers which are published between 2000 to 2022 in this research area are downloaded for the study.

(2) Construct keyword co-occurrence networks: Keywords are an important tool for identifying the content of the research, important topics as well as the method or the technology applied in the field of research in Bibliometrics. To identify and analyze the evolution as well as the distribution of the main topics in research for field of working capital for SMEs, we have constructed the Keyword Co-occurrence Networks.

Co-occurrence Word or Co-word could be defined as a particular statistical correlation among various keywords which appears in a similar document. Hence, a Keyword Co-occurrence Networks show the relation among the keywords through a network map. The close is the distance among the specific keywords, more relevance it shows. Alongside, this keywords also form a cluster which could be applied for describing the main topics of the research. After that, an analyze of the whole topic series could be done by applying these Keyword Co-occurrence Networks. The method we use is VOS viewer for building the Keyword Co-occurrence Networks which reflects research state in the social science field.

(3) Analyzing topic development trends on the basis of distribution of density of Keyword Co-occurrence Networks: The distribution of density of Keyword Co-occurrence Networks in an effective manner reflect the manner in which whether the research has been researched well or have neglected any particular topic of research over the time. Also,

Network visualization and overlay visualization technique have been applied to identify the core topics in the current study area.

i) Network Visualization

Network visualization, format visualization or hyperlink analysis is the system of visually imparting networks of related entities as links and nodes. Nodes symbolize data factors and hyperlinks represent the connections between them. It is a gorgeous approach to with data. This content formed by using links and nodes is rather interesting and can supply us insightful information about any issue. When human beings find out the excellent techniques to get the essence of this kind of content, it's possible to communicate consequences in an open-viewed perspective.

ii) Overlay Visualization

Overlay Visualization refers to a larger view regarding at the time of narration. It would be leading to a wider scope for change in the process of learning. The objectives regarding this plan of framework is for separating the applications from the views and separating specifications from rendering. This specifications provide instances for the tutor of software program that is known as proplets. The advantages of this program involves lesser cognitive loads on students as well as help for every course automatically and status visualizations.

iii) Density Visualization

It is being identified as Kernel Density Plots or the Density Trace Graph. The density plot helps in displaying record distributions at a stretch of a period of time on basis of continuous intervals. The graph is described as a variant of histogram which applies the Kernel smoothing for determining plot values, which allows to smooth distribution at the time of attenuation of noise. Density Visualization Pipeline calculate, visualize & quantify distribution of density which means the mass of interneurons.

CO-AUTHORSHIP NETWORKS

Co-authorship refers to an affiliated structures wherein two or more than two researchers would simultaneous records the search results related to a particular topic. Hence, co-authorship network could be considered a social network which involves researchers that replicates collaborations among them. Researchers are being represented through sources of nodes in the co-authorship network.

Scientific collaboration refers to an interactions which bring the particular area in Social contexts among two or more than two scientists that helps to share the definition and task fulfilment with respect to sharing goal together.

Scientists are driven to collaborate because of the opportunity to discover new knowledge, the growing specialization within science, the complexity of the infrastructure required, and the desire to combine unique types of information and capabilities to tackle complex fitness problems. Scientific collaboration can also help broaden the scope of a research challenge and foster innovation as it allows access to distinct disciplines.

3. DATA COLLECTION

There were total 30,829 papers published on web of science on working capital in Smes which includes articles, book chapters, editorial material, early access, proceeding papers, data

papers and review articles of various disciplines. Total 309 articles for the period 2000 – 2022 of business, management, business finance, economics, operation research management science, ethics, social science interdisciplinary, education educational research, multidisciplinary science have been selected for the current research.

4. NETWORK CONSTRUCTION AND TOPIC DEVELOPMENT ANALYSIS

Table 2. Top 10 keywords

| OCCURRENCE | KEYWORD |
|------------|----------------------------|
| 49 | SMES |
| 41 | Innovation |
| 40 | Management |
| 28 | Growth |
| 28 | Working capital management |
| 25 | Determinants |
| 24 | Entrepreneurship |
| 24 | Firm performance |
| 21 | Strategy |
| 17 | Human capital |
| 15 | Investment |

As per the above table the core keywords used in working capital of SMES have been identified using keyword co-occurrence network and the top 10 keywords based on their occurrence are SMES, innovation, management, growth, working capital management, determinants, entrepreneurship, firm performance, strategy, human capital and investment.

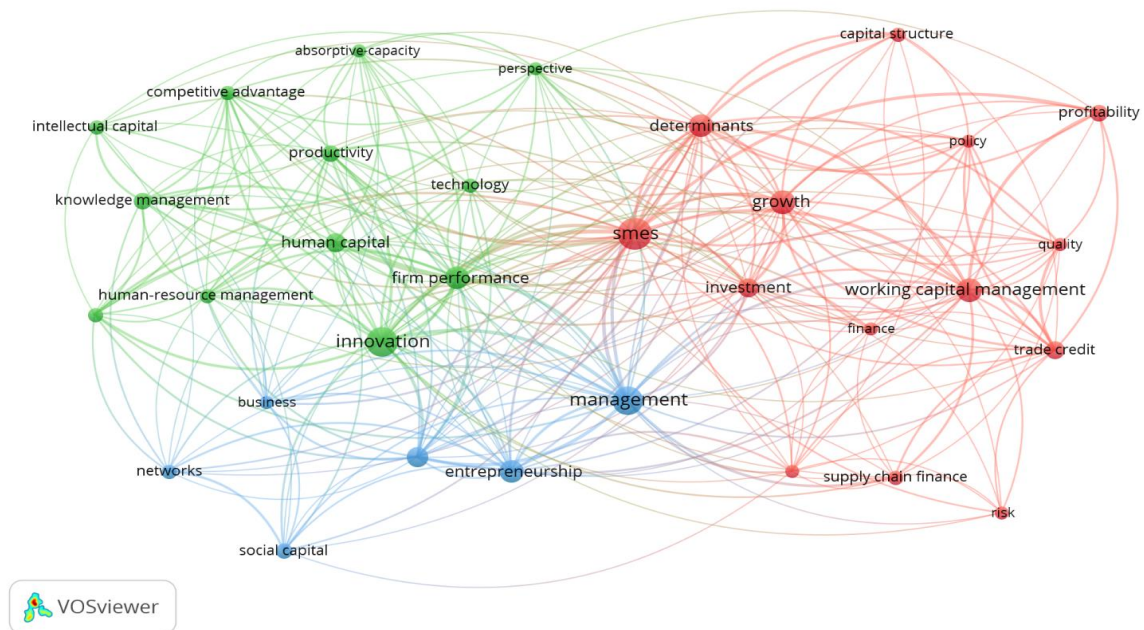


Figure 2. Network Visualization

From the above network visualization, it can be seen that bigger nodes represent more occurrence of keywords in the document and the smaller nodes represent less occurrence of the keywords in the document. Further clusters

can also be extracted with the help of network visualization technique and similarities between various document can also be identified.

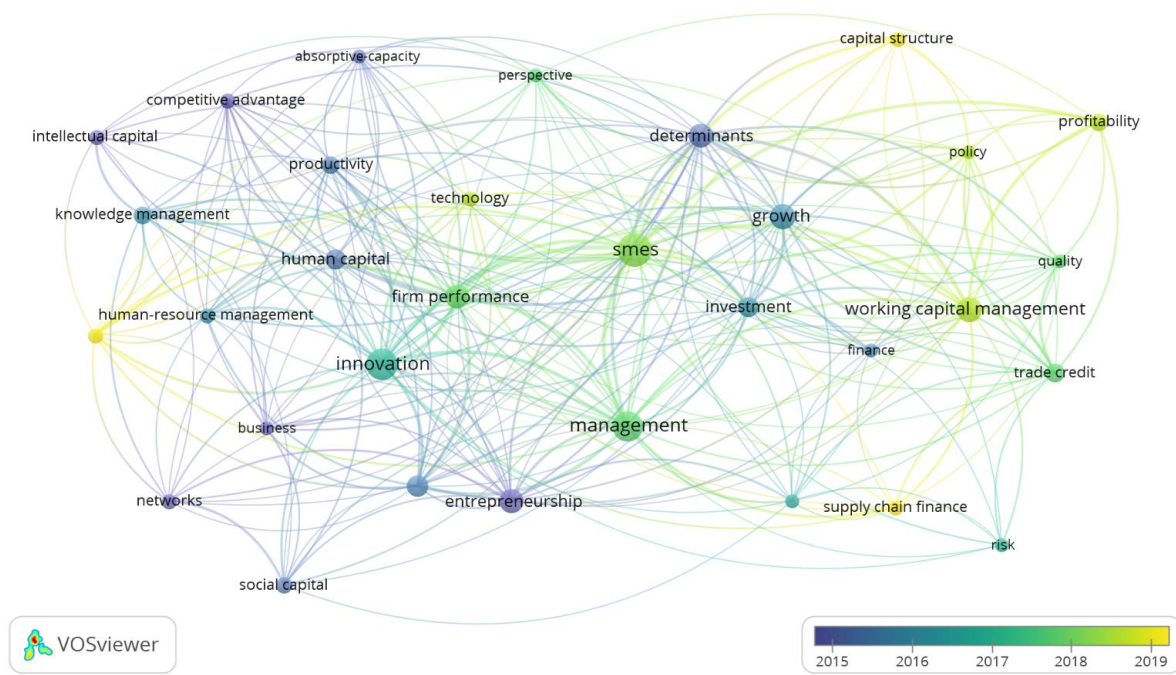


Figure 3. Overlay Visualization

As per the above overlay visualization it can be identified the hot topics and evolution of research of working capital of SMES over the period of time. It is seen that various areas of working capital in SMES have been evolved. It

is seen that 2019 various aspects i.e. supply chain finance, capital structure, profitability, policy, HRM, technology etc. have been covered.

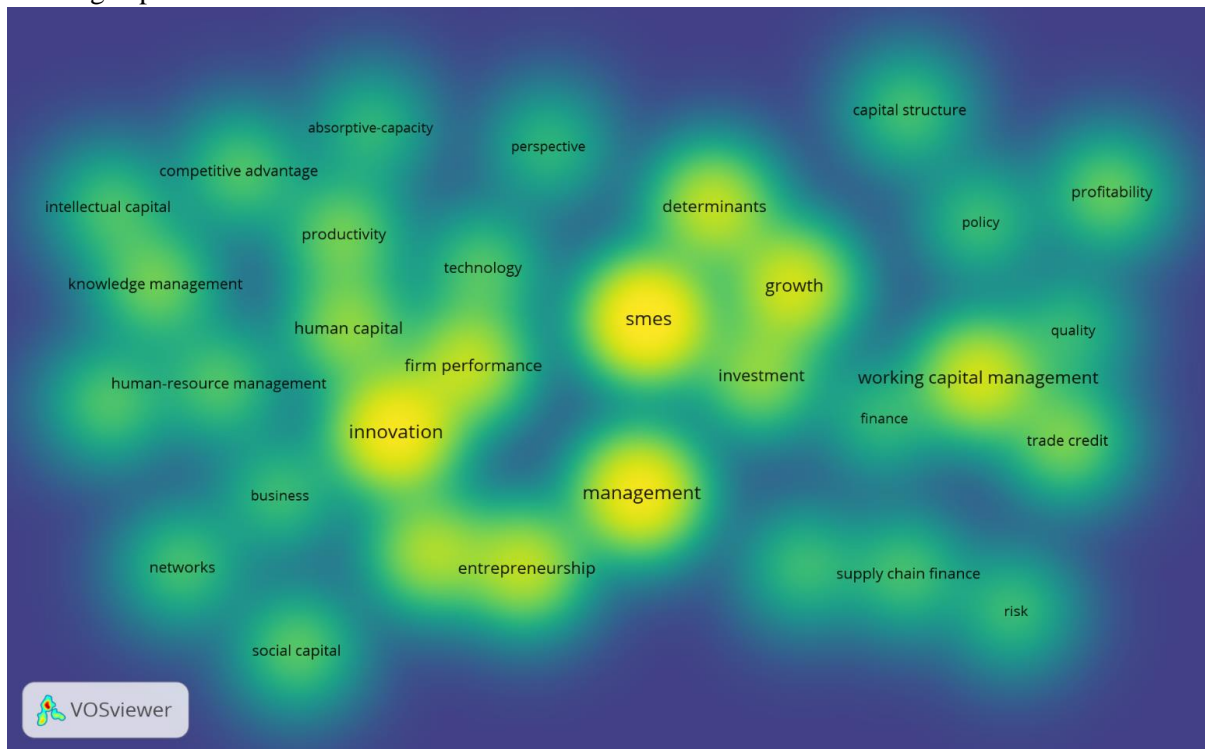


Figure 4. Density Visualization

As per density visualization more studies have been covered on SMES growth, management, innovation, firm performance, entrepreneurship

etc. and also more studies have been covered on determinants, profitability, finance, trade credit of working capital.

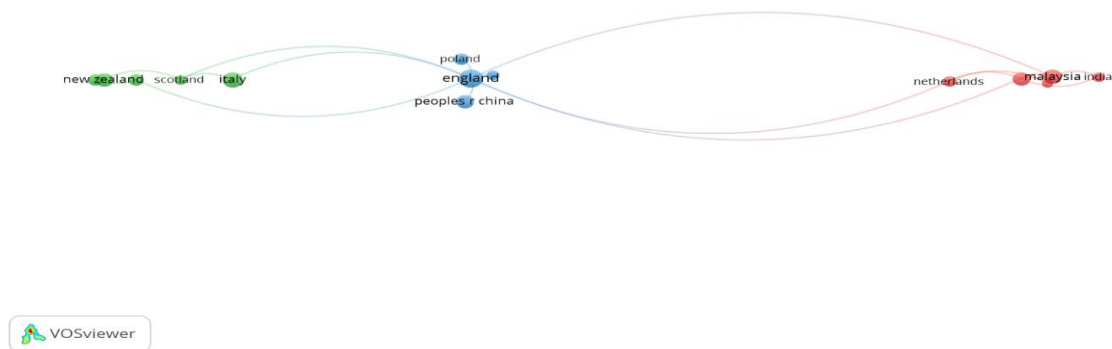


Figure 5. co-authorship- countries network (based on documents)

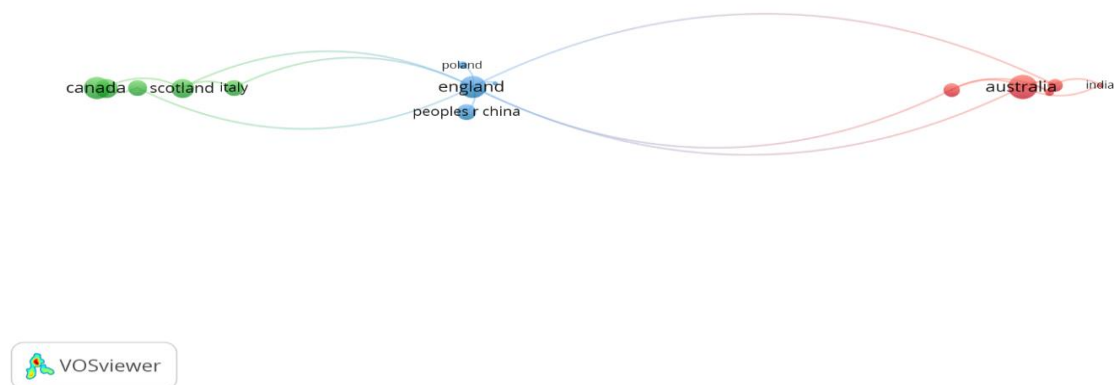


Figure 6. co-authorship- countries network (based on citations)

As per the above figure no.5 and figure no. 6 it can be seen that New Zealand and Scotland, Italy and Scotland, England and china, Poland and England, India and Malaysia, Australia-Netherlands and England, England and Malaysia, England and Italy have contributed paper in collaboration on the research topic working capital in SME. Bigger node indicates more documents published by the country and smaller node indicates less documents published by the country. Thus, it can be seen that England has contributed maximum documents in the research area followed by Italy, Malaysia, Spain, Australia, New Zealand, and china. The most relevant contribution pertaining to citations Australia 402 citations, England 302 citations, Canada 294 citations, Spain 226 citations, Scotland 208 citations and New Zealand 200 citations.

5. CONCLUSION

There are various studies conducted both qualitative and quantitative on the various disciplines on working capital in SMES however it can be seen that the study area has still not reached the maturity level .Various studies on working capital management approaches(Hedging, conservative and aggressive approach) in SME, Working capital

Ratios in SME, Working capital challenges and issues in SME, Mediating and moderating analysis, Regression and path Models Etc. can be conducted and various insights can be extracted.

It can also be concluded that there is limitation in two aspects of the current study less co-authorship in terms of organization, Authors and countries. And the limitation of the current study is the entire areas of working capital has not yet covered. Thus to overcome the limitations various research on working capital of small-medium size enterprises must be undertaken to cover all the vital aspects of working capital. Also co-authorship in terms of authors, countries and organization must be encouraged to cover all the leftover studies in the working capital.

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