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Knowledge Sharing in Small Medium Enterprises: A Bibliometric Analysis

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***Abstract*—Knowledge sharing is an important dimension of knowledge management that has been researched and tested as an important driver of competitive advantage. However, research on the concept of knowledge sharing is still not carefully explored, disorganized and only a collection of vague ideas separated from several fields of science. The present study aims to measure trends in knowledge sharing carried out for SME development. Using a bibliographic mechanism, this study identifies keywords about to knowledge sharing to find and identify related articles in the Scopus database of 500 articles published from 2010 to 2021. The research findings reveal that the visual trend of increasing the number of publications over the past eleven years, article subject area, keywords, and authorship networks. This literature review provides evidence that research trends regarding knowledge sharing are becoming an important topic that can provide theoretical and practical implications.**

Keywords— knowledge sharing; SMEs; authors; bibliometrics analysis

I. INTRODUCTION

Responding to environmental changes, market turbulence, and the increasingly massive role of technology, it is necessary to radically change the business model, especially utilizing knowledge. Specifically, how to make the transition from an economic model to a knowledge model [1] to increase sustainable competitive advantage [2]. The concept of knowledge sharing describes a model of implementing knowledge that is disseminated in organizations both to improve individual and organizational performance. This is an important trigger in building organizational resilience [3], sustainable business performance, and competitive advantage while driving economic growth [4].

To bridge the mechanism of research on knowledge sharing from the individual and organizational levels, a collaboration between researchers and organizational managers is needed. The involvement of SMEs in implementing the role of knowledge sharing is very clear because it can increase the culture of innovation both at the employee level, such as commitment and innovative work behavior [5] as well as at the organizational level such as innovation performance and innovation culture [4]. Although it is starting to get attention, until now, the role of knowledge sharing in the SME

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sector is still under debate, so that literature mapping is needed to generate new perspectives that result in research collaboration in a global context which ultimately results in relevant insights and recommendations.

On the other hand, although the topic of knowledge sharing has increased from the last decade, there are still many things that have not been exposed [6], has some limitations [7] and has not been specifically explored [8], and still in a context that is still spread across various industry clusters [9]. Thus, this literature gap became our motivation in conducting scientometrics-based literature mapping so this study presents a literature review that specifically explores research results and trends in knowledge sharing. The aim is to provide recommendations so as to increase the potential for future research. So far, the trend of research on knowledge sharing has only focused primarily on knowledge management, knowledge transfer, or carried out on case studies, or literature without comprehensive visualization. as far as we are concerned, there are no studies that present the big picture and visualize research trends regarding knowledge sharing. According this aims research, we use VOSviewer software [10] to conduct an extensive literature review mapping and survey of 500 articles on knowledge sharing included in the Scopus database in the last eleven years (2010-2021). So, the important role of mapping literature on knowledge sharing in enriching knowledge is presented in the form of quantity and quality of publications and citations. Thus, this comprehensive overview becomes a starting point in increasing networking and collaboration among researchers around the world.

II. Methodology

To get the final visualization we employed VOSViewer software [10], we identify articles that have passed peer review in the Scopus database (Elsevier and ScienceDirect). Of the 500 articles downloaded in the form of a research information system (*RIS) with the keywords or phrases "knowledge sharing" and "SMEs", the data is then transferred to the reference manager, namely Mendeley. Data was collected for 3 months (June-August 2021) by identifying keywords, phrases and relevant information related to knowledge sharing.

Next, out of the 500 mined articles, we forwarded them to VOSViewer to analyze the text corpus of the research information system (RIS) database. VOSViewer was chosen because of its function in creating article maps, publication maps, citations, and phrase or keyword maps [10]. In addition, VOSViewer is also used for data mining, article grouping, and mapping on various database sources [11].

III. Result and Discussions

The results of the identification and sorting of article titles, specified keywords, and abstracts of 500 mined documents are aligned with testing to achieve research objectives. The research data consists of two categories, namely systematic literature review and research papers which in the publication process have gone through a rigorous peer-review process from referees who are experts in their fields and are indexed by Scopus on Elsevier. Figure 1 presents the topic clusters of the studied that "innovation performance" is in the bigest cluster, followed by "social capital", "service" and "knowledge integration" which shows a related linkage between all keywords.

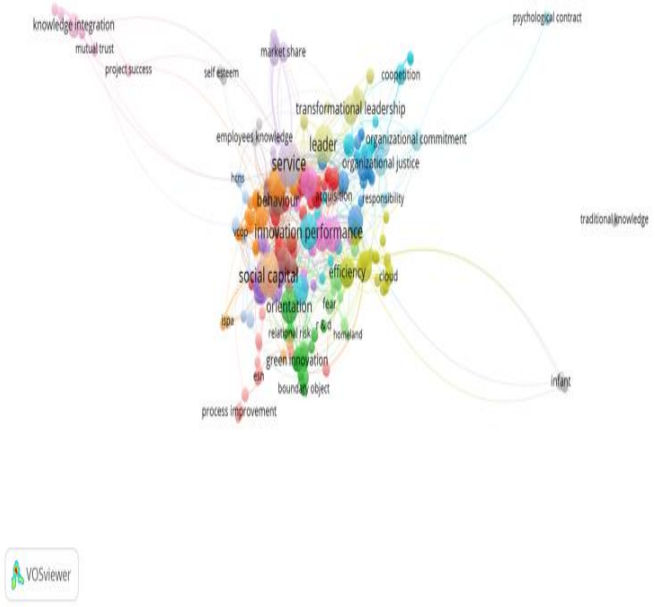

Figure 1. Network Visualization

The results of the analysis in Figure 1 there are 14 clusters with each identified variable having accuracy and links with other variables. The clusters include: pink 1, namely: climate, creativity, job design, change, empathy, greening, knowledge management research, individual knowledge sharing, organizational values, personal information management; pink 2: knowledge integration, mutual trust, project success, process development, collaborative molding product; purple 1: Altruism, individual motivation, social support, ohc, reciprocity, specific knowledge, social exchange theory, hrm

knowledge, health professional, knowledge self afficacy, online health community; purple 2: service, successful knowledge, superior search engine, market share; brown 1: knowledge sharing behavior, service innovation, prospensity, external consultant, social media usage, behavior, virtual organization, organizational culture, social capital tendency, employee sense; brown 2: aquitition, motivation factor, customer knowledge; blue 1: representation, knowledge graph, knowledge flow, web service, construction safety, current knowledge, radical innovation, knowledge acquisition, research productivity, transactive memory system; blue 2: innovation performance, breadth, product innovation, social chain network, positive impact, collaborative innovation activity, buyer supplier relationship, border, knowledge tacitness, team performance, authentic leadership, innovativeness, psychological safety, firm performance, strategic intense, coopetition, cross functional knowledge sharing, blue 3: organizational commitment, organizational justice, firm performance, responsibility, employee perception, psychological contract; blue 4; team creativity, culture intelligent, global virtual team, identity threat, expratriat employee, absorptive capacity, knowledge sharing collection; red 1: explicit knowledge, enjoyment, employee knowledge, job performance, reciprocal benefit, culture value, ecological knowledge, social knowledge, social capital theory, training, demonstration; red 2: online knowledge, online learning, esn, enterprise social network, knowledge contributor; orange 1: KSB, punishment, knowledge contribution, interaction effect, virtual team, reward, interaction effect, conscientiesness, social cognitive theory, positive affect tone; orange 2: social capital, ISPA, source credibility, online user community, userness, behavior control; green 1: orientation, rational risk, green innovation, boundary object; green 2: fear, r&d, and homeland; and gray: self-esteem, employee knowledge, traditional knowledge, and infant.

Next, we analyze research trends regarding knowledge sharing from year to year. Figure 2 reveal significant development related to this study from year to year. In 2012-2014 there were more studies on orientation, market share, homeland, boundary objects, and rational risk, in 2014-2016 on social capital, services, psychology contracts, traditional knowledge, infant, knowledge integration, and behavior. Meanwhile, in 2016-2018 the focus of research is on innovation performance, organizational justice, organizational commitment, transformational leadership, leader, employee knowledge, mutual trust, process improvement. Research between 2018-2020 concerns organizational commitment, organizational justice, acquisition, efficiency, and coopetition, while the latest research in 2020 is with the brightest color focusing on green innovation, and project success.

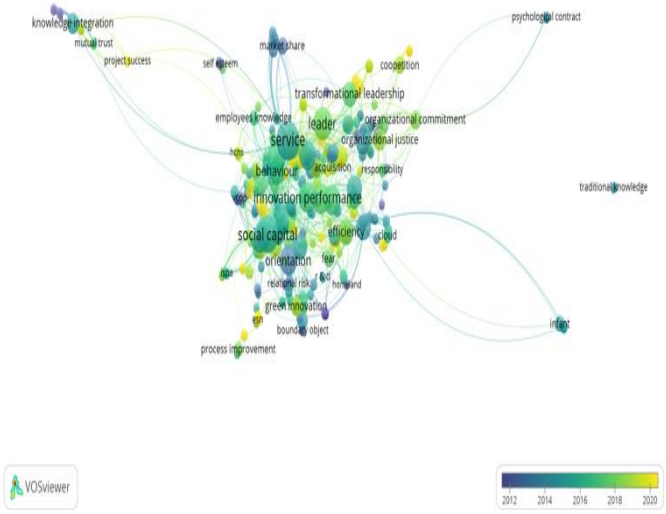

Figure 2. Visualization Topic area using Overlay Visualization

For analyzing topic of "knowledge sharing" to build a "competitive advantage" is to minimize the "barriers" which can be sought from previous work. Figure 2 presents an opportunity to research knowledge sharing with green innovation to realize environmental performance (Arsawan et al.,2021) [12]; (Rubel et al.,2021) [13]; so that SMEs have a green organizational identity (Chang and Hung, 2021) [14] to be more environmentally responsible (Rehman et al.,2021) [15].

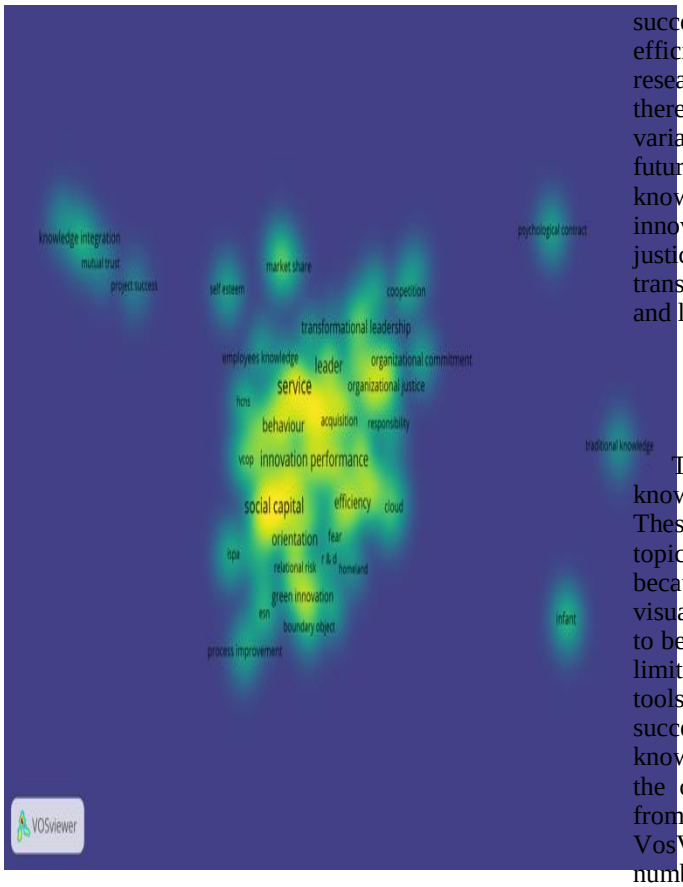

Figure 3. Density Visualization

Furthermore, we measure the depth of research in the field of knowledge sharing, especially in the SME sector (see figure 3), we present a visualization of the topic area using density visualization which is indicated by color textures where the denser the color appears, the greater the number of studies. Figure 3 shows that research on the topic of knowledge sharing is more related to service and social capital which has the brightest light. Then the light is getting dimmer which indicates that the variables of innovation performance, behavior, acquisition, efficiency, organizational justice, relational risk, and green innovation are not so much researched. While other variables that have dim light provide a greater probability of being used as research variables because they have not been widely studied based on the results of density visualization. These variables include knowledge integration, mutual trust, project success, self-esteem, market infant, traditional knowledge, psychological contract, responsibility, share, cooperation, transformational leadership, employee knowledge, leader, organizational commitment, fear, research & development, homeland, boundary objects, and process improvement. The conclusion from figures 1-3 shows that the variables that can be used as indications of future research, especially in SMEs are green innovation, organizational commitment, organizational justice, process improvement, project success, transformational leadership, acquisition, efficiency, and leader. These variables can be used as research indicators because of their novelty level and there are still few types of research related to these variables. In order to enhance the body of knowledge, future researchers can increasing research about knowledge sharing by chosing topic of green innovation, organizational commitment, organizational justice, process improvement, project success, transformational leadership, acquisition, efficiency, and leader.

IV. Conclusions

The present study aims to determine the trend of knowledge sharing, especially in the SME sector. These bibliometric findings provide evidence that the topic of knowledge sharing is an interesting topic because it has been widely researched. But the visualization results still leave gaps and opportunities to be explored in future studies. This study has several limitations, namely the research objectives, research tools, and data sources. Although this study has been successful in investigating the visual trend of knowledge sharing networks but it does not measure the contribution of the research especially citations from various researchers. This happens because the VosViewer software is not designed to analyze the number of citations available in various data. Furthermore, the data analyzed in this paper is only taken from the Scopus database (especially Elsevier and Sciendirect), while there are other databases that also have articles that may be of good quality but are not indexed by Scopus. To obtain more comprehensive results, future research is to enter more data sets from Google Scholar, Web of Science and measure the number of citations to get article contributions.

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