

## TRENDS IN E-COMMERCE AND SOCIAL MEDIA RESEARCH IN ASIA: FIVE YEARS OF SCIENTOMETRIC AND CONTENT ANALYSIS

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### ABSTRACT

*This paper aims to provide scientometric and content analysis towards e-commerce and social media research in Asia. The Web of Science (WoS) and Scopus databases were used in searching for articles. There were 884 (433 publications from the Web of Science and 451 articles from Scopus) papers analysed. Based on the analysis of two databases, the number of publications from the Web of Science database showed a significant increase yearly. In comparison, the Scopus database showed fluctuating growth every year. One of the countries that enormously contributed to the research was China, which can be seen from the author's and country's analyses. The ACM International Conference Proceeding Series was the most contributing conference proceedings. Based on the keyword results, there are five keywords that appear most often. Referring to the data from the last two years (2021–2022), the keywords “machine learning” and “social media marketing” are the most frequently used. These two keywords are most often associated with e-commerce and social media keywords. These findings are expected to provide a substantial understanding towards e-commerce and social media research, particularly in the Asian region. This paper will assist researchers in understanding new topics, collaborating with other researchers, and determining relevant sources and countries. Analysed keywords can inspire new research. Consequently, researchers can learn about new technology, societal changes, and impending challenges and opportunities by tracking keyword trends.*

**Keywords:** E-commerce, Social Media, Scientometric, Web of Science, Scopus

### 1. Introduction

Market orientation has always been considered a critical source for firms during and after the COVID-19 pandemic. Firms that understand and respond to customer's changing needs and preferences are more likely to succeed in the marketplace. Data indicates that technology has positive benefits, such as facilitating communication, as Shu et al. (2016) asserted, bolstering the affirmation. In addition, technology is used widely in all sectors, including business, due to the impact of COVID-19, such as self-isolation and staying at home, thus changing people's habits in conducting business activities (Agus et al., 2021). In this context, e-commerce as a form of digital technology emerges as one of the crucial solutions. E-commerce not only enables companies to run their business operations online (Parikshith & Natesan, 2023) but also supports businesses in maintaining their business activities, as well as encourages consumers to maintain their purchasing power to fulfil their needs (Ingaldi & Ulewicz, 2019). With the rapid growth of e-commerce, businesses in Asia and around the world must learn to incorporate aspects of this technology into their strategies to maintain competitiveness in an ever-evolving market (Li & Piachaud, 2019). As such, e-commerce is becoming an essential foundation for responding to dynamic changes in consumer behaviour and ever-changing market needs.

E-commerce as a digital technology is experiencing a significant increase in popularity and is widely used in business activities worldwide (Nurcahyo & Putra, 2021). E-commerce is buying and selling products online or through the Internet (Razavi et al., 2014; Soegoto et al., 2018). It is important to note that the e-commerce landscape in Asia differs significantly from other regions due to unique cultural, economic, and technological factors (Memeti & Xhaferi, 2015). For example, during the COVID-19 pandemic, more than 2 billion people in Asia have turned to

online services to purchase goods, appliances, food, and clothing, as highlighted by Bieniek (2023). Agus et al. (2021) reported that Indonesia is in fourth place as the fastest-growing e-commerce country globally, underscoring the vital role e-commerce plays in the business landscape in Asia today (Tran, 2021). This data underscores the irreplaceable role of e-commerce in today's Asian business landscape. It is imperative to explore how these unique Asian dynamics affect the research landscape.

In addition, the advantages of e-commerce extend to the ability to conduct transactions in cyberspace, reduce transport costs, and eliminate the need for face-to-face meetings between buyers and sellers, as outlined by Yue (2022). E-commerce has also facilitated easier access for consumers to a broader selection of products and brands (Rosário & Raimundo, 2021). However, there are also negative impacts, such as the lack of security in online transactions and difficulties making payments abroad (Xia & Lv, 2021). Factors such as poor product quality or deviations from purchase orders have also been observed (Andonov et al., 2021). A recent study by Baako (2019, 2020) highlighted the importance of improving the security of online transactions in e-commerce, while Tam et al. (2019) emphasised the need to address product quality issues to improve the consumer experience. Given these unique characteristics of the Asian e-commerce landscape, conducting a comprehensive analysis of research trends in this domain is imperative.

In the same way, social media has emerged as an important aspect of daily business activities and has become a global trend (Andonov et al., 2021). The Asia-specific dimension of this phenomenon is significant, as the region has an extensive user base and a rapidly growing technology ecosystem. Previous research estimates that active social media users in Asia will increase from 2.95 billion in 2019 to 3.43 billion in 2023 (Dwivedi et al., 2021). Social media platforms such as Facebook, Twitter, and Instagram facilitate easy and quick communication, not only among friends and family but also with previously unknown individuals (Keum et al., 2022). The use of social media for business activities, including product promotion and sales, has become a common practice (Soelaiman & Ekawati, 2022). While social media has shown many positive impacts, including increased accessibility and accelerated marketing and sales for businesses, there are also negative consequences, such as spreading false information, leading to fraud and criminal activities (Wilson & Stock, 2021). Patma et al. (2021) state that although social media can potentially improve marketing and sales for businesses, some individuals may not fully benefit due to a lack of technology and social media literacy. The distinctiveness of the social media landscape in Asia, characterised by diverse cultural and linguistic contexts, further underscores the need for in-depth analyses of research trends in this domain in the Asian context.

In the past five years, researchers around the world have conducted research on literature reviews and bibliometric analyses on e-commerce, including consumer marketing strategies and e-commerce (Rosário & Raimundo, 2021), e-commerce and smartphones (Penu et al., 2022), trust in e-commerce (Mumu et al., 2022), consumer interest in e-commerce (Megatama et al., 2022), and artificial intelligence in e-commerce (Bawack et al., 2022), as well as consumer behaviour and sustainability of e-commerce (Rita & Ramos, 2022). However, it is essential to acknowledge that there is a scarcity of scientific studies that have undertaken scientometric and content analyses of e-commerce and social media research specifically focused on the Asian setting. Asia was preferred as the research focus due to its current global e-commerce developments, as Elms (2017) highlighted. This research gap is, therefore, of significant importance and warrants further investigation. This study addresses this knowledge gap by providing a thorough scientometric analysis of e-commerce and social media-related research in Asia. Through this analysis, we hope to shed light on the unique trends and dynamics in this domain in the Asian context, providing valuable guidance and insights for researchers, practitioners, and other stakeholders interested in the growth of e-commerce and social media in the region.

This research has high urgency as it provides a comprehensive quantitative overview of e-commerce and social media research in Asia over the past five years (2018–2022), and the importance of this topic is discussed as the combination of social media and e-commerce has a significant impact on shopping decisions (Priansa & Suryawardani, 2020). ScientoPy was used to conduct the temporal scientometric analysis in this article. Temporal analysis allows us to determine the origin of a new phenomenon and its evolution into a trend or trending issue (Abdullah et al., 2023; Ruiz-Rosero, Ramirez-Gonzalez, & Viveros-Delgado, 2019). Our

advanced review paradigm, combining scientometrics and content analysis, provides a comprehensive and in-depth review (Li et al., 2022). The search strategy we propose for this discipline is beneficial for researchers and practitioners in related fields. Our findings assist researchers in identifying current research advances, competing groups, and potential collaborations, as well as in developing their own work in this area. As a result, this research is necessary to understand and describe the evolution of e-commerce and social media research in Asia, as well as provide directions for future research in this area.

## 2. Research Methods

This study used scientometrics analysis and content analysis. Scientometrics analysis is a well-known quantitative method used to identify and measure publication trends, authorship patterns, citation networks, and research impact in various fields (Daharis et al., 2023; Wodeyar & Mulla, 2022). Mingers and Leydesdorff indicate that scientometric analysis typically involves using two databases, Web of Science and Scopus, and can be facilitated by software tools such as ScientoPy, which enable the extraction and analysis of bibliometric data (Mingers & Leydesdorff, 2015). ScientoPy is a Python-based software tool that can extract and analyse bibliometric data from Web of Science and Scopus databases (Ruiz-Rosero, Ramirez-Gonzalez, & Viveros-Delgado, 2019). This bibliographic database contains information on high-quality multidisciplinary research published in scientific journals with significant global impact and allows consolidation of data sets to contribute to research (Santamaria-Granados et al., 2021); it is also the most visited database by previous world researchers (Abdullah 2021; Sweileh, 2020; Yang et al., 2021). Content analysis is flexible because it objectively analyses the narrative's meaning (Lin & Jeng, 2015). The content analysis used for this research is qualitative. Content analysis is a mixed approach that codes and interprets textual data to conclude (Ullah, 2022).

### *Dataset Collection*

The Web of Science (WoS) and Scopus databases were used in searching for articles. In completing this retrieval process, the keywords used were: (“e-commerce” OR “electronic commerce” OR “internet commerce” OR “digital marketing” OR “e-business” OR “ebusiness” OR “ecommerce” OR “online shopping” OR “online purchase” OR “inter- net shopping” OR “e-purchase” OR “online store” OR “electronic shopping”) AND (“social media” OR “social media platforms” OR “social platforms” OR “social media service” OR “social media website”). These terms are widely recognised and have been used in previous studies related to e-commerce research (Bawack et al., 2022; Megatama et al., 2022; Penu et al., 2022). The keywords related to social media, such as “social media”, “social media platforms”, “social platforms”, “social media service”, and “social media website”, were used to capture research related to the use of social media in e-commerce. By combining these keywords in the search process, the researchers retrieved a broad range of articles related to e-commerce and social media from the Web of Science and Scopus databases.

Information was retrieved from bibliographic platforms on December 13, 2022, and searching was based on published articles from the last five years (2018–2022) in the Asia continent. Several criteria justify selecting 2018–2022 and Asia for bibliographic platform data retrieval. We start by checking five-year-old articles to make sure the data is current. This timeframe thoroughly assesses recent scholarly works, capturing the latest research and advancements. Focusing on Asia also illuminates its background and dynamics. Asia is huge and diverse, with a rich cultural legacy and enormous geopolitical, economic, and social importance. Focusing on Asia helps us comprehend its particular issues, trends, and advancements. Asia has grown and changed rapidly, making it an important subject. It has a fast-growing economy, technology, and culture. Asian articles can illuminate science, technology, economics, and social sciences.

We acquired data from bibliographic sites on December 13, 2022, to ensure timeliness. This ensures data analysis uniformity. It also provides a picture of the scholarly scene at that time, showing us the research and information available. The search process was limited to English-language papers, and only research articles and proceedings were included as document types. 1,127 articles were collected from 694 Scopus databases and 433 Web of Science databases.

### Scientometric Analysis

Before pre-processing, ScientoPy was used to create co-occurrence maps of e-commerce and social media-related keywords (Ruiz-Rosero, Ramirez-Gonzalez, & Khanna, 2019). Table 1 summarises duplicate papers removed from the combined Web of Science (WoS) and Scopus data sets. The first column describes the input data set. The second column displays the total number of published documents and the duplicates generated by the filter. The relative percentages before and after the filter are shown in the last column. This section contains a complete and detailed description of the steps undertaken in conducting the research. Furthermore, it is imperative to visually represent the research process through a comprehensive and precise flowchart or framework. This should encompass several elements such as mirrored algorithm, rule, modelling, design, and other aspects pertinent to system design.

Table 1 - Pre-process brief with ScientoPy for the dataset obtained from Web of Science and Scopus

Information	Number	Percentage
Total Loaded papers	1127	
Omitted papers by document type	0	0
Total papers after omitted papers removed	1127	
Loaded papers from WoS	433	3,84%
Loaded papers from Scopus	694	6,16%
Duplicated removal results:		
Duplicated papers found	243	2,16%
Removed duplicated papers from WoS	0	0
Removed duplicated papers from Scopus	243	3,5%
Duplicated documents with different cites by	160	6,58%
Total papers after removed duplicated	884	
Papers from WoS	433	4,9%
Papers from Scopus	451	5,1%

### Content Analysis

The content analysis in this section shows the resources and diversity of research, but this analysis only focuses on keywords using ScientoPy. The keyword analysis was chosen to uncover current issues in e-commerce and social media research in Asia over the past two years (2021–2022). This is based on the understanding that keywords reflect the main issues of concern to researchers and enable the identification of shifts and changes in research focus (Feldbacher et al., 2016; Fengnian, 2019). Careful keyword analysis provides valuable insights into recent developments in the domain without evaluating the entire paper text, which is often time-consuming and resource-intensive (Tu et al., 2021). As a result, from 884 frequently found papers using ScientoPy (see Figure 2), we selected 5 keywords as crucial representations of the key aspects of this study. Keyword analysis, as an essential part of content analysis, helps understand the current state of research and identify neglected, popular, or upcoming thematic research focus (Weismayer, 2017).

## 3. Results and Discussions

### A. Analysis Scientometric

#### *Research Productivity*

Table 2 illustrates the productivity of e-commerce and social media research for five years (2018-2022). Based on the analysis of two databases (Web of Science and Scopus), the number of publications produced by the Web of Science database has increased significantly every year, while the Scopus database fluctuates in growth every year. These two databases were combined, showing that the highest number of publications occurred in 2021 (208 articles), and the lowest number occurred in 2018 (133 articles).

The growth can be identified from three types of growth indicators; (i) the average growth rate (AGR) shows that Web of Science (9.5) is higher than Scopus (4.5), (ii) the average document per year (ADY) shows that Web of Science (104.5) higher than Scopus (96.0) and (iii) the percentage of documents in recent years (PDLY) shows that Web of Science (48.3) is also higher than Scopus (42.6). Furthermore, the growth of journal article subjects within disciplines can be seen in Figure 1. Analysis of journal article subjects within disciplines is very important for scientometric studies because it allows researchers to determine the range of research topics and

identify new topics (Saber et al., 2022).

Table 2 - Annual Growth of Publications

DataBase	Years					Total	AGR	ADY	PDLY	h-Index
	2018	2019	2020	2021	2022					
Scopus	70	111	78	105	87	451	4.5	96.0	42.6	22
WoS	63	74	87	103	106	433	9.5	104.5	48.3	35

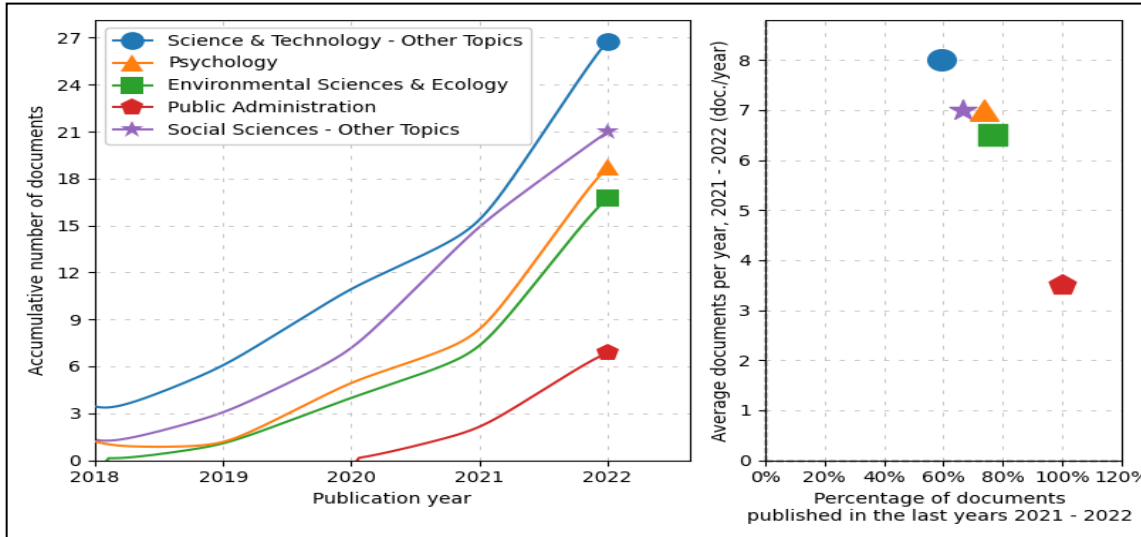


Fig. 1. Subject Evolution Graph

*Author Analysis*

Based on 884 publications represented by 2591 authors who published research on e-commerce and social media research in Asia. The top ten authors with the most published documents per year are shown in Table 3. Li Y and Zhang Y from China ranked first and second, with six documents published, respectively. However, Li Y has 79 citations, more than Zhang Y, which has 36 citations. The author whose journal was most cited was not both, but it was the third author with four publications. This may highlight that the number of published documents cannot be considered the only parameter of an author’s influence within the scientific community (Davarazar et al., 2021).

Furthermore, based on the last two years’ data (2021-2022), Liao S. H is the author with the most publications on this topic, with four documents and 36 citations. The results suggest a growing interest in e-commerce and social media in Asia, with significant research being conducted in the field. The analysis of top authors and citations highlights the importance of considering multiple parameters when evaluating the impact of an author’s research.

Table 3 - Top 10 Authors With The Most Publications, Citations And H-Index

Rank	Author	Country	Total	Citation	AGR	ADY	PDLY	h-index
1	Li Y.	China	6	79	0.0	1.2	100.0	2
2	Zhang, Y.	China	6	36	0.4	1.2	100.0	4
3	Dwivedi, Y.K.	India	4	141	0.2	0.8	100.0	4
4	Kumar, S.	India	4	39	0.4	0.8	100.0	3
5	Li X.	China	4	40	0.2	0.8	100.0	1
6	Liao, S.H.	Taiwan	4	36	0.2	0.8	100.0	3
7	Wang, Y.	China	4	28	0.2	0.8	100.0	3
8	Kim S.	South Korea	3	9	0.0	0.6	100.0	2
9	Liu, J.	China	3	30	0.4	0.6	100.0	1
10	Xu, Y.	China	3	34	0.2	0.6	100.0	3

AGR, Average Growth Rate; ADY, Average Documents Per Year, PDLY, Percentage of Documents in Last Years.

*Source Analysis*

Table 4 presents ten sources in terms of the number of papers published. Based on ten identified sources, the ACM International Conference Proceeding Series is the highest

contribution source with 43 documents. However, the Journal of Retailing and Consumer Services is the most influential source, with 835 citations.

Table 4 - The ten most contributing and influential sources

Rank	Journals and proceeding	Total	Citation	Publisher	Country	h-Index
1	ACM International Conference Proceeding Series	43	58	Association for Computing Machinery (ACM)	United States	5
2	Journal of Retailing and Consumer Services	25	835	Elsevier	United Kingdom	16
3	Proceedings of the International Conference on Electronic Business (ICEB)	25	30	AIS	Netherlands	3
4	Frontiers In Psychology	15	32	Frontiers Media S.A.	Switzerland	3
5	Sustainability	14	50	MDPI AG	Switzerland	4
6	IEEE Access	10	145	Institute of Electrical and Electronics Engineers Inc.	United States	5
7	IOP Conference Series: Materials Science and Engineering	10	18	IOP Publishing Ltd.	United Kingdom	3
8	International Journal of Innovative Technology and Exploring Engineering	10	12	Blue Eyes Intelligence Engineering and Sciences Publication	India	2
9	Electronic Commerce Research and Applications	9	278	Elsevier	Netherlands	7
10	Journal of Physics: Conference Series	9	18	IOP Publishing Ltd.	United Kingdom	3

### Country Analysis

Analysis of country information by author affiliation contributes to understanding the distribution of country research on e-commerce and social media, particularly in Asia. ScientoPy used this data to process information about countries by knowing which countries were most represented in a particular subject. Researchers can choose research locations or research projects that they want to collaborate. This research can increase the country's prestige and encourage others to conduct research to get higher positions.

Table 5 describes Asia's top ten countries that publish papers on e-commerce and social media. Based on Table 6, China and India dominate the top two countries. In the last five years (2018–2022), China has produced 240 papers, and India has produced 203 papers. If mapped based on sub-regions on the Asian Continent, East Asia is represented by three countries (China, Taiwan and South Korea), West Asia is represented by two countries (Saudi Arabia and the United Arab Emirates), Southeast Asia is represented by three countries (Indonesia, Malaysia and Thailand), and South Asia is represented by 2 countries (India and Pakistan).

Table 5 - Ten countries that publish papers on e-commerce and social media

Country	Total	AGR	ADY	PDLY	h-Index
China	240	4.0	55.0	45.8	28
India	203	16.0	48.5	47.8	16
Indonesia	128	-7.5	21.5	33.6	8
Malaysia	64	3.5	15.5	48.4	13
Taiwan	61	3.5	17.0	55.7	10
Saudi Arabia	49	1.0	12.5	51.0	10
Pakistan	40	2.0	11.5	57.5	9
South Korea	29	-0.5	7.0	48.3	10
Thailand	22	1.5	5.0	45.5	3
United Arab Emirates	20	2.0	7.0	70.0	4

## B. Content Analysis

In this section, we will conduct a content analysis to illustrate the diversity of research

resources and current trends in e-commerce and social media studies in Asia. Content analysis is a useful tool to understand the direction of research, uncover current issues, and identify keywords that are most relevant to this topic. We obtained this data using the ScientoPy tool, which helped us analyse a large number of papers quickly and efficiently. Keywords play an important role in summarising the topic and research focus of an article. They also help readers quickly identify the research direction of an article (Wu et al., 2020). Therefore, we conducted a keyword analysis for the past two years (2021–2022). Of the 884 papers collected, the five most frequently found keywords using ScientoPy can be seen in Figure 2. Based on the data from the last two years (2021–2022), machine learning is the keyword with the largest occurrence rate (64%). This is followed by social media marketing (50%), trust (46%), sentiment analysis (43%), and purchase intention (41%).

### ***Machine Learning***

In a recent study on e-commerce and social media in Asia, the dominating keyword in two years (2021–2022) is “machine learning.” Machine learning has become a subject of great interest in today’s digital world and has sparked active discussions in the business and advertising worlds (Ghorbani et al., 2022). The concept of machine learning in this context is mainly concerned with its use to provide online reviews to consumers during the shopping process (Gope et al., 2022). The online shopping experience is increasingly characterised by personalised product recommendations, which are obtained through these machine learning techniques. It is worth noting how important online reviews are in the world of e-commerce. Almost all e-commerce websites provide a platform for customers to post online reviews about a particular product (Reddy et al., 2021). These reviews are not just additional information, but they also have a significant impact on consumers’ purchasing decisions in daily life. However, in light of the importance of online reviews, it is necessary to be careful of issues related to fake reviews, which are also a serious concern (Jain et al., 2021). Inaccurate reviews or fake reviews can affect consumer trust and ultimately affect the success of e-commerce businesses. Therefore, the use of machine learning in analysing and managing online reviews is becoming increasingly relevant and strategic in the context of e-commerce and social media in Asia.

### ***Social Media Marketing***

The COVID-19 pandemic has dramatically changed the business landscape, forcing governments to impose mass restrictions. Businesses have responded quickly to this issue, adopting technology and social media marketing strategies in an effort to continue to maintain connections with consumers. Along with the development of technology in today’s digital era, the importance of digital marketing is increasing year by year. Ghorbani et al. (2022) describe how digital marketing has become a key tool for companies to provide new properties with the aim of informing, attracting, and selling services and products to clients. It is important to note that the adoption of internet/e-business technology and social media marketing has successfully explained the mediating role between variables. In a study conducted by Patma et al. (2021), it is argued that social media marketing plays a role in connecting various factors that affect business performance. In addition, social and digital marketing offer significant opportunities for organisations. As explained by Dwivedi et al. (2021), benefits include lower costs, increased brand awareness, and increased sales. In this increasingly connected world, social media marketing is becoming an important bridge between companies and consumers, providing significant added value.

### ***Trust***

Research on “Trust” is broad in scope, with the potential to develop cross-country theories and models in relation to e-commerce and gender roles (Mumu et al., 2022). For example, within the scope of e-commerce, some online products are valued more highly compared to traditional trade channels. Such negative issues may affect how online users perceive e-commerce and undermine trust levels (Rosário & Raimundo, 2021). Research findings show that the use of social media (SM) in the work environment has a significant impact on the formation of network ties, shared vision, and trust levels. Moreover, network ties and trust tend to increase the level of work

engagement, except in the context of shared vision (Kasim et al., 2022). When it comes to social media, it is important to note that the trust instilled in these platforms has a significant impact on consumers' purchase intentions (Wang et al., 2022). In fact, trust in social media can have a greater impact than the direct influence of the social media site itself (Zulfiqar & Ahmed, 2022). In other words, the level of trust in a social media environment can be a strong determining factor in consumer decision-making.

### ***Sentiment Analysis***

The theme of sentiment analysis reflects the focus of research relating to the interpretation and classification of emotions and opinions in text data in the context of e-commerce. This research utilises artificial intelligence techniques such as machine learning (ML) and natural language processing (NLP) (Bawack et al., 2022). The importance of AI in realising digital transformation is striking, turning every aspect of digital content into something reusable (Dwivedi et al., 2021). Sentiment analysis is becoming an important tool commonly used in a variety of contexts, including product reviews and survey responses, as well as on online media platforms and social media (Usha & Dharmanna, 2021). The main goal of sentiment analysis is to identify and categorise positive and negative sentiments expressed in text (Gope et al., 2022). This provides a deeper understanding of how customers perceive a particular product or service. In addition, review sentiment scores and aspect-level sentiment scores are used to determine the global score of a product (Raviya & Vennila, 2022). The analysis results we found reflect that the concept of sentiment analysis has received significant attention in recent research. Sentiment analysis has helped brands and businesses understand how their products or services are received by the market and how to improve the overall customer experience.

### ***Purchase Intention***

The concept of "purchase intention" refers to the extent to which consumers intend to purchase products. During the COVID-19 pandemic, there has been a significant increase in consumers' purchase intentions towards e-commerce platforms, triggered by the perceived health and safety benefits offered by these mediums as opposed to the perceived benefits of traditional retailers (Tran, 2021). In the past two years, "purchase intention" has become a highly relevant buzzword, with online payment systems, e-commerce platforms, social media, and trust issues being of concern (Luong et al., 2022). Studies in Vietnam, for example, have revealed that a number of specific issues have made consumers sceptical of this innovative payment alternative. In addition, consumers' "purchase intention" is also closely related to products promoted by social media influencers. These influencers are not only an important source of information for customers but also a common marketing tool used by brands to reach a wider audience (Liu et al., 2021). The importance of trust in this context is striking. Research shows that trust in social media has a significant impact on consumer purchase intentions (Wang et al., 2022), even greater than the direct impact derived from the social media site itself (Zulfiqar & Ahmed, 2022). The trust instilled in the social media environment plays a key role in shaping consumer purchase intentions, which is an important element in today's e-commerce and social media ecosystem.



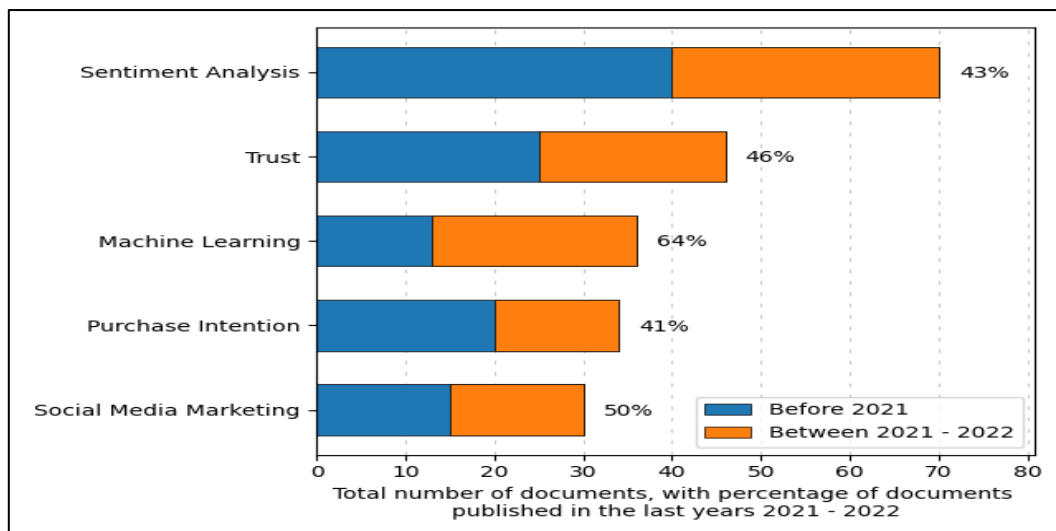


Fig. 2. ScientoPy Execution of Most Focus Keywords

This paper aims to analyse e-commerce and social media research in Asia through scientometric analysis and content analysis. Research productivity in e-commerce and social media in Asia from 2018 to 2022 showed fluctuating growth. This finding is supported by Pingping and Ting (2022) research, which states that the popularity and importance of e-commerce are increasing, driven by factors such as engagement, browsing attitude, recommendations, word of mouth, and purchase intention behaviour. E-commerce and social media play an important role by providing access to goods and services online and facilitating communication and networking (Brahma & Dutta, 2020; Hsu, 2019). In addition, the convenience offered by e-commerce in shopping over the internet is a major factor that has caused e-commerce to increase and dominate economic activity in many countries (Palanisamy, 2022; Zatonatska et al., 2019). It is important to note that e-commerce and social media not only change the way business is conducted but also positively impact the quality of life of consumers by providing opportunities for businesses and consumers to grow and communicate effectively (Urne & Aggrawal, 2018). Through this online access, they provide products and services more efficiently, provide various recommendations, and develop strong networks.

In the author analysis, it can be seen that the ten authors with the highest number of publications per year are Li Y and Zhang Y from China, who are ranked first and second, respectively, with six published documents. However, it should be noted that the most cited author is not always the author with the highest number of publications. On the contrary, a third-ranked author with four published documents had more citations. This suggests that the number of publications is not the only factor that influences an author's reputation in the scientific community (Davazarar et al., 2021; Delabays & Tyloo, 2022). The use of bibliometric indicators, such as the h-index, is a common approach to assessing scientific impact, but it is not sufficient to capture the full scope of an author's contribution (Bihari & Tripathi, 2017). Evaluating the real contribution and impact of a researcher requires more comprehensive measures, such as normalised citation counts and eigenvector centrality (Arguelles & Arguelles-Prieto, 2019). Therefore, it is important to consider various factors beyond the number of publications when assessing an author's reputation in the scientific community. These include aspects such as the tangible impact of their research on the development of science, the influence of their research in answering important questions in a particular discipline, and their contribution to innovation and new understanding in the field.

In the source analysis, it was found that of the ten publication sources identified, the ACM International Conference Proceeding Series contributed the highest number of publications, reaching 43 published documents. Interestingly, however, the source that had the most significant impact was the Journal of Retailing and Consumer Services, with a striking 835 citations. This finding underlines the importance of the quality and impact of a publication, which does not depend solely on the number of publications. Source analysis also confirms that in academia, the reputation of particular journals and conferences can have a major impact on the recognition and

number of citations for research (Helden, 2020). The ultimate goal of scientific journals is to present high-quality scientific data and share information with the research community as well as the general public (Racz & Marković, 2018). Therefore, researchers should wisely choose publication venues for their research to ensure that their work can achieve greater impact and make a significant contribution to the development of the discipline in question. Moreover, it is important to remember that the success of research is not only measured by the frequency of publication but also by the extent to which it makes a meaningful contribution to the advancement of science and practice in the relevant field.

In the country analysis, it is seen that the top ten countries actively publishing research on e-commerce and social media are located in Asia, with China and India dominating as the top two countries. China, in particular, has experienced significant growth in the e-commerce sector, fuelled by the implementation of various innovative projects and the rapid development of internet infrastructure (Bansal, 2011). Despite China being the largest country in generating research on e-commerce and social media, India has also recorded significant progress in this area, with a bright future in both countries (Soegoto et al., 2018). India has expanded its e-commerce sector thanks to the government's commitment to providing an adequate legal and regulatory framework for e-commerce and domestic and international trade (Pallivalappil, 2021; Shankaraiah & Mahipal, 2018). Moreover, the rapid growth of the e-commerce sector in India is also fuelled by widespread internet access and the increased use of advanced electronic devices (Anand, 2023). More and more people are spending time online and interacting through social media platforms (Kumar, 2023), which has fueled the development of e-commerce and social media in the country. This suggests that Asia, particularly China and India, has an increasingly significant role to play in research and development in e-commerce and social media.

Finally, keyword analysis showed that out of the 884 papers collected, there were 5 keywords that appeared most frequently using ScientoPy. Machine learning was the dominating keyword, with an occurrence rate of 64%. This reflects the strong interest in the application of machine learning technologies in the context of e-commerce and social media. Various studies Davoodi and Mezei (2022); Farooqi et al. (2022); Gope et al. (2022); and Taherdoost (2023) have highlighted the important role of machine learning in improving the performance and efficiency of e-commerce platforms and social media applications. Furthermore, social media marketing, with a 50% occurrence rate, is also a key focus. This reflects the growing importance of marketing strategies on social media platforms. Social media marketing is not only popular among practitioners, but also interests researchers, as it provides new tools for customers in their search, evaluation, choice and purchase of marketing offers (Sianturi et al., 2022). Trust, with an occurrence rate of 46%, and sentiment analysis, with an occurrence rate of 43%, also emerged as major keywords in this study. This indicates that in e-commerce and social media strategies, it is important to understand the level of consumer trust and understand customer sentiment. Previous research by Mouad and Elgraini (2021) has underlined the importance of this. Sentiment analysis, for example, helps understand customer sentiment in an e-commerce context, which can increase customer trust and guide social media strategies (Mehta et al., 2023). Finally, purchase intent, which appeared in 41% of the papers, highlights the importance of understanding the factors that motivate consumers to make online purchases. This provides valuable insights for businesses operating in this environment (Akar & Dalgic, 2018; Bebbler et al., 2017)

#### **4. Conclusion**

This analysis determined the trend of contributions in this field over the last five years (2018-2022), various research topics developed during this period in Asia, the most productive researchers and sources, and the leading countries. Furthermore, content analysis of keywords discussed machine learning words associated with e-commerce, social media, sentiment analysis, and purchase intention keywords related to online payment systems, e-commerce platforms, social media and trust.

This analysis can serve as a roadmap for scholars interested in undertaking e-commerce and social media studies in Asia. This analysis's findings provide a snapshot of the discipline's most productive scholars, research areas, sources, and leading countries. This data can be used to find new collaborators and funding sources and better understand this sector's most relevant

research subjects and trends.

Another result of this analysis is that it emphasises the need to use scientometric and content analysis methodologies when examining research trends in a particular sector. While scientometric analysis provides a quantitative summary of the most active researchers and sources, content analysis provides a more nuanced insight into the field's specific study themes and keywords. Combining these methodologies can provide a more in-depth view of research trends in a specific sector.

This paper has some limitations, including the limited mapping area, which only covered the Asian continent with a range of 2018-2022 and only used two databases, Scopus and WoS. It is recommended that future researchers continue this analysis globally (Asia, Africa, North America, South America, Antarctica, Europe, and Australia). These findings are expected to provide a substantial understanding of e-commerce and social media research, particularly in the Asian region. The contribution of this paper can help researchers understand new topics and collaborate with other researchers, as well as relevant sources and countries. The keywords that have been analysed can also provide directions and innovative ideas for future research.

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