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Bibliometric Analysis on Internet of Things Application in e-Government for Creating Smart Environment

Analisis Bibliometrik dalam Aplikasi Internet of Things pada e-Government untuk Menciptakan Smart Environment

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Abstrak

Penelitian ini bertujuan untuk mengeksplorasi karakteristik smart environment dalam penggunaan Internet, Bertujuan mendukung E-Government yang menggunakan database Scopus dari tahun 2015 hingga 2023. Penelitian ini menggunakan teknik bibliometrik dimana publikasinya diambil dari database Scopus dan dianalisis dari tahun 2015 hingga 2023. menggunakan Citespace. Jumlah data yang diperoleh dan digunakan dalam penelitian ini sebanyak 3365, dengan penggunaan kata kunci pada dokumen ini adalah Smart Environment dan Internet Of Things. Temuan penelitian menunjukkan bahwa terdapat 10 cluster yang didominasi oleh penulis Darmstadt, DE, dengan topik Smart Environment; penelitian ini dapat menjadi bahan referensi untuk penelitian lebih lanjut mengenai subjek Smart Environment dan Internet of Things E-Government, Kesimpulan yang didapatkan bahwa jumlah analisis data berjumlah 3365 data yang diambil dari data Scopus tahun 2015. -2023 yang menunjukkan adanya 10 cluster.

***Kata Kunci**: e-government, internet of things, smart environment.*

Abstract

This study aims to explore the characteristics of intelligent environments in Internet use, aim Supporting E-Government has used the Scopus database from 2015 to 2023. This study uses bibliometric techniques where the publication was taken from the Scopus database and analyzed from 2015 to 2023 analyzed using Citespace. Obtained the number of data used in this study was 3365, with documents using the keywords Smart Environment and Internet Of Things. The findings of this studied showed that there was 10 clusters dominated by the author of Darmstadt, DE, on the topic of Smart environment; this studied was the result of reference material for further researched on the subject of a Smart Environment and for the Internet of Things E-Government, it could have concluded that the analysis had a total of 3365 data used, which was taken from Scopus data from 2015-2023 which showed 10 clusters.

***Keywords**: e-government, internet of things, smart environment.*

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1. INTRODUCTION

In technological advances and connectivity as well as global competition, the E-Government highlights the great potential in the management system of technical institutions, such as operational efficiency, cost reduction, service quality, and convenience. Especially as innovation and learners support the good government order (Zou et al., 2023). Internet and devices Advances in technology and modifying operations resulting from the accumulation and the complications involved will pave the way for the emergence of intelligent environments, especially with the critical role of supply chain features in developing intelligent environments (Pandian, 2019). An intelligent city with an E-Government system accurately manages smart environments through the involvement of the Internet of Things; the Internet of Things defines everyday objects to connect to the Internet. The Internet of Things works by integrating the power source of limited devices. These include sensors, machines, and intelligent systems that derive information from the physical world so that information can be processed for the control or management of any application (Elmustafa & Mujtaba, 2019) IoT is beneficial in monitoring and solving problems; with the fact that IoT generation is moving towards environments to support many environmental applications (Elmustafa & Mujtaba, 2019). the emergence of the Smart Environment trend increases digital Information and technology, technology has benefits as information collection and adopting Information collected into digital data (SAQIB & Al-Muqrashi, 2017).

After that, Information needs to be analyzed into Information that can be offered to various development and city problems such as traffic systems, energy, et cetera. IoT is an autonomous exchange of Information between uniquely identifiable devices embedded invisibly around us. According to (Nimodiya & Ajankar, 2022). IoT has a central vision, namely, making IoT can facilitate data processed through machine learning IoT into a compact and low-power hardware device that works in real-time; with this, according to León et al. (2010) IoT can refer to the interconnection of networks of everyday objects, which are often equipped with ubiquitous intelligence; IoT will increase the reliability of the Internet in each location by integrating each object for interaction through embedded systems. With IoT technology, it will make it easier to manage E-Government towards building Good Governance, according to Papadopoulou et al. (2020) Information systems and applications supporting IoT can offer innovative services as well as expand the types and quality provisions such as a broad spectrum of the domain, health, transportation, environment, communication, security/safety, energy, defense, and smart cities.

One of the implementations of IoT in local government is realizing a smart city. The smart city concept is the concept of efficient urban planning management. Several cities in Indonesia have implemented the smart city concept, such as DKI Jakarta, Bandung City, and the Special Region of Yogyakarta. Smart cities in these cities help gain recognition from residents and attract investors, tourists, and additional funds from the central government (Dandy, 2022). A city that can keep up with the times must become a smart city, understand environmental conditions, and be interconnected. The use of appropriate technology supports the role of IoT here. Some examples of IoT utilization in smart cities are as follows:

1. Online CCTV, monitoring cameras that can be accessed by the public online and connected to internet networks spread throughout the city and can be accessed by the public freely through government websites/applications can help the public to maintain traffic conditions, congestion, time estimates real-time travel which helps residents in their daily activities.
2. Smart Traffic, the use of IoT in SmartTraffic helps people avoid long traffic jams caused by inappropriate traffic management. The presence of smart traffic supported by IoT

can improve the traffic management process. They are reducing traffic jams, reducing fuel use, and reducing pollution, as well as assisting in emergencies if necessary, such as the Fire Department's travel needs, which require urgent use of the highway

3. GPS Tracker, a location tracker that uses IoT, can help with vehicle movement. Take the example of DKI Jakarta, which has implemented it in TransJakarta transportation so that the general public can unite bus locations in real-time, which helps the public to predict their need to use public transportation so that they are on time. Real-time movements that utilize IoT can also help people reduce the waste of their time. Research on the Implementation of IoT in E-Government is very important because with this research, the public can find out how the role of using technology is beneficial for them in their daily activities, which helps reduce impacts such as energy waste, time effectiveness, reduces pollution and helps in community security.

IoT in the implementation of E-Government includes increased efficiency, effectiveness, and flexibility of services and reductions. It will be reduced costs, community empowerment, increased government transparency, more efficient enforcement of regulations, improved planning and forecasting, and improved health and safety measures. Based on the explanation above, this study aims to review research trends in utilizing IoT in managing E-Government towards a smart Environment through research published in the last eight years based on the Scopus database. Topics that use IoT systems in supporting E-Government are carried out in several approaches. Scopus provides several sources in the question and benefits of using IoT in global research in the field; this study uses bibliometric analysis of data about this study, using the keywords "Internet of Things" and "E-Government" I hope in this study can be a reference for policy-making and archives in the future research.

2. LITERATURE REVIEW AND PREVIOUS RESEARCH

An innovative environment is a form of how this has the characteristics of increasing administrative and economic efficiency due to the development of community culture using network infrastructure (Trindade et al., 2017). The smart environment is also said to intensely focus on realizing the social inclusion of various types of urban residents in public services, emphasizing the role of high-tech and creative industries. This is also what is conveyed by research (Devi & Gill, 2019) states that with the state of the future, an innovative environment consisting of devices or objects that will form autonomous and distributed ad-hoc networks that require efficient, cooperative protocols and effective network use that change.

Building a smart environment requires a flexible and unified framework for security that is adaptive to the engagement of IoT and other devices; according to Vimal A et al. (2015), IoT goes beyond Machine to Machine (M2M) communication by connecting devices, systems, and services that nail various protocols, domains, and applications. According to (Gomez et al., 2019), this system can expand and adopt new technologies faster, such as smart homes and innovative health, such as smart factories and smart cities; this study also describes it completely.

Utilization of IoT in E-Government towards an smart environment, in explained the conceptual need for a conceptual framework that addresses reliability challenges (Qishun, 2023) explained the conceptual need for a conceptual framework that addresses reliability challenges in e-government IoT deployments. Factors such as fault tolerance, redundancy, system resilience, device performance, network connectivity, and data integrity play an essential role in ensuring the benefits of IoT, with the advantages of IoT following how

previous researchers delivered research results in utilizing IoT in E-Government towards an innovative environment in the study.

Clohessy et al., (2014) argues that there is much potential in building E-Government using cloud computing for intellectual environment development; this study conveys the steps in a series of planning activities to identify how cloud computing can catalyze the smart environment research agenda. While in research Osman et al. (2019) has successfully explained how Cognitive Analytical functions. An online survey validated CAM applications for Turkey's changing electronic services on extensive sample data. The framework aims to improve user capture and satisfaction, using ongoing Shared values through the provision of enhanced Electronic services in refining Data Envelopment Analysis (DEA) with the CAM framework in using cognition to understand and frame transformation challenges into analytic terms and then identifying satisfaction characteristics to advance relationships, the analysis presents synchronization and coordination of policymakers. This framework can model and solve complex problems while expanding the operating space relevance to excellence in practice to overcome new challenges of e-government. This cognitive analytical function can help policy makers in formulating e-government to solve complex problems and formulate the use of e-government in practice.

The concept of a smart environment and its benefits in E-government are useful for creating a better life. Taking the example of environmental problems in urban areas, which are very vulnerable to damage, they require assistance from policymakers in formulating them, assisted by E-government. One effort to improve the quality of the urban environment is through the smart environment concept (Sa'diyah et al., 2020). The use of IoT in E-government, especially related to creating a smart environment, is closely related to the provision of technology that can facilitate and provide solutions to various problems such as water quality and health, air pollution, weather pollution, radiation, waste management and others that require the use of technology in E-government. government (Nurlukman & Basit, 2023)

Good administrative management is needed in research to achieve E-government in a smart environment. Anthopoulos & Reddick (2016) has a focus on improving administration and policies related to public ICT investment issues and urban challenges with the E-Government trend, which has large and open data and the ability to involve the community to make decisions on urban challenges.

3. RESEARCH METHOD

The researched method used in this studied was Bibliometric analysis; this analysis aimed to saw the distribution of articles per year based on the volumes, subject distribution, leveled of author collaboration, authorship patterns, and affiliation patterns; bibliometrics had the aimed of explained the written communication process and its development in a discipline. There was several bibliometric benefits; analysis could estimate whether or not secondary literature completed and could found out subjects or fields from disciplines; bibliometric analysis is also known to determine the direction of past and future scientific development.

The method used in this research consists of five stages (D et al., 2003). The first method is to determine search keywords. The search keywords used here are "Smart Environment," "Internet of Things," and "E-Government." Apart from these keywords, the year the article was published is also considered when mining articles; namely, it is limited to the 2015-2023 time period. The second method is to look at the initial search results based

on article data that was mined in the 2015-2023 time period, which can number 327-525 articles each year. Of these three keywords, in each publication per year, there are 3,269 articles. The third method, filtering, is carried out in the search results data to suit research needs by focusing on the application of the Internet of Things in E-Government to create a Smart Environment. Furthermore, in the fourth method, the data that has been collected is arranged based on search result statistics and divided into 10 clusters. Then finally, the data is analyzed bibliometrically.

Royani & Dukariana Idhani (2018) as well as according to Aribowo (2019), bibliometric analysis considered effective in provided datasets that could have used to improved the quality of researched. The source of the data used by the researchers was in the formed of articles taken used the Scopus database started from 2013-2023. According to Aksnes & Sivertsen (2019), Scopus comprehensively claimed scientific and scientific literature. This product is selective in practiced and principle. After used Scopus, the author also uses Citespace tools to managed and visualize databases taken from Scopus. The author's use of Citespace had various features; in its function, Citespace could grouped labelled derived from citation documents and taken from the cited document's title or summary index (Su et al., 2019). This method carried out four stages; in the first stage, the author broke down the categories for the use of the keywords "smart Environment: and "Internet Of Things," (Su et al., 2019).

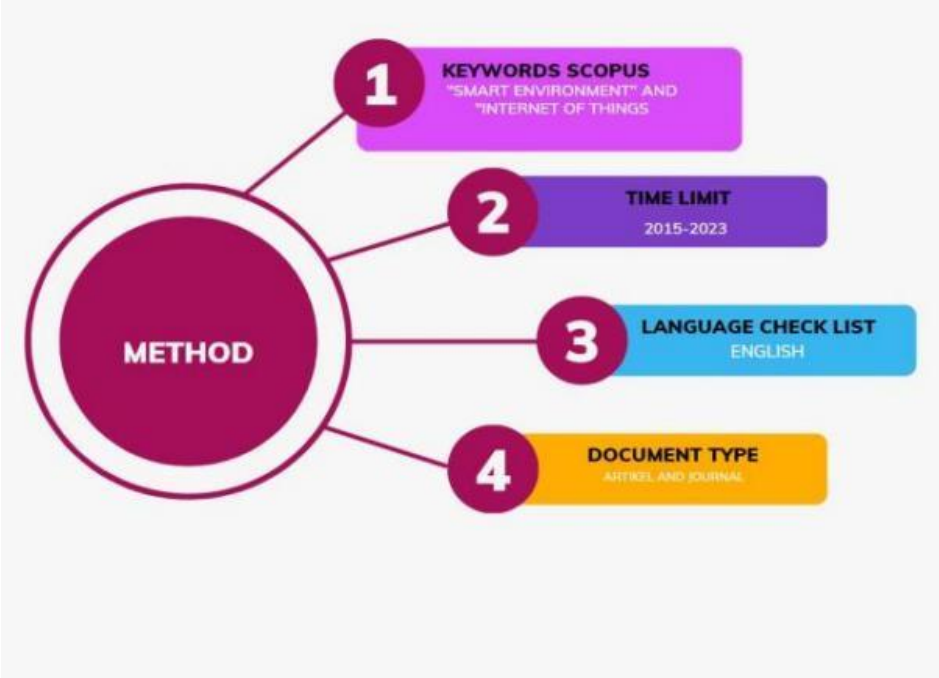

Image 1. Research Method
Source: Researcher,2023.

In Image 1, (TITLE-ABS-KEY (innovative AND environment) AND TITLE-ABS-KEY (Internet AND of AND things)) Moreover, PUBYEAR > 2014 Bibliometric analysis is considered effective in providing datasets that can be used to improve the quality of research. The source of the data used by the researchers is in the form of articles taken using the Scopus database starting from 2013-2023. According to AND PUBYEAR < 2024 AND (LIMIT-TO (O.A., "all")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "cr")) AND (LIMIT-TO (LANGUAGE, "English")). The data was analyzed by looking at publications per year above 2014, which were considered effective in presenting data

quality. Then, the data was grouped from each year, which was limited by the type of document and the language used in English, which was then presented and explained below.

4. RESULT AND DISCUSSION

4.1 Publication by Year

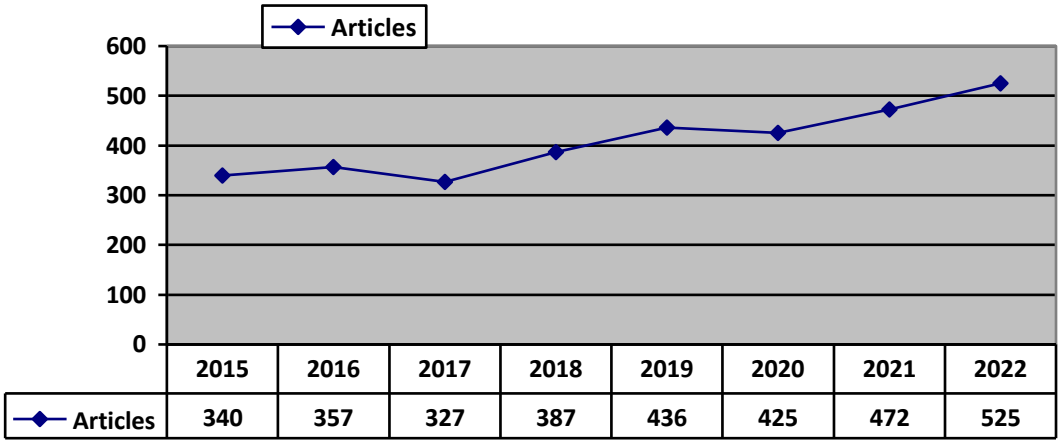

Image 2. Publication by Year
Source: Researcher,2023.

Image 2 represents data from 2015 to 2023, this topic has experienced ups and downs. Based on article search results using the Scopus database, the author found 3365 relevant articles. In the first year of 2015, there were 340 research publications; in the second year of 2016, there was an increase to 357 publications. In the third year in 2017, there was a slight decrease in 327 publications; entering the fourth year of 2018 experienced a considerable increase of 387 studies; in the fifth year of 2019, experienced a reasonably drastic increase reaching 436 publications; in the sixth year of 2020 experienced a slight decrease in publications to 425, in the seventh year of 2021 it increased again by 472 publications, entered in the eighth year of 2022 there was a very rapid increase of 525 publications until the ninth year in 2023 experienced The drastic decline currently has 96 publications.

4.2 Publication by Country

Image 3 represents the classification of articles by country. In article 3365, based on Scopus search results, there are the most countries in this study, with the most South Korea (2407), Taiwan (974), China (243), United States (243), United States (228), India (149), Pakistan (135), Saudi Arabia (68), Australia (64), United Kingdom (54), Canada (45).

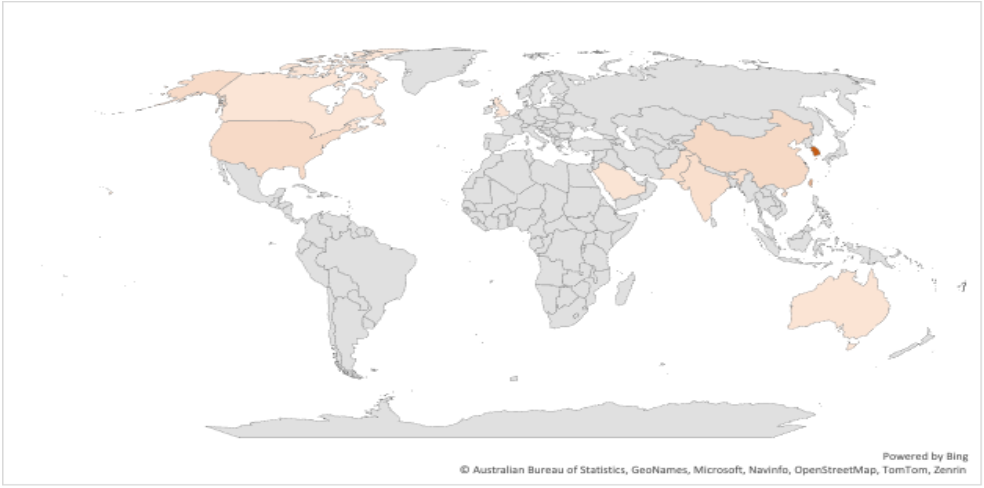

Image 3. Publication By country
Source: Researcher,2023

4.3 Publication by Author

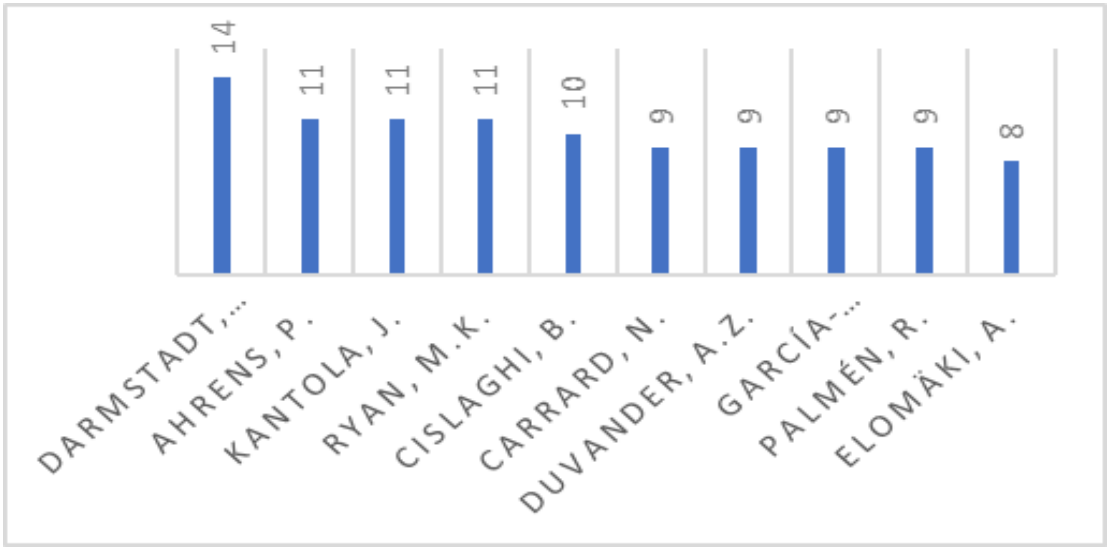

Image 4. Publication by Author
Source: Researcher,2023

Image 4 represents the classification of articles by author. In 2015-2023 in the data that has been taken from Scopus, the most documents written by Darmstadt, G.L. The following position were Ahrens, P. as many as 11, there are Kantola, J. as many as 11, Ryan, M.K, Cislaghi, B., Carrad, N. Duvander, A.Z, Garcia Holgado, A. Parliament, R.

4.4 Publication by Affiliation

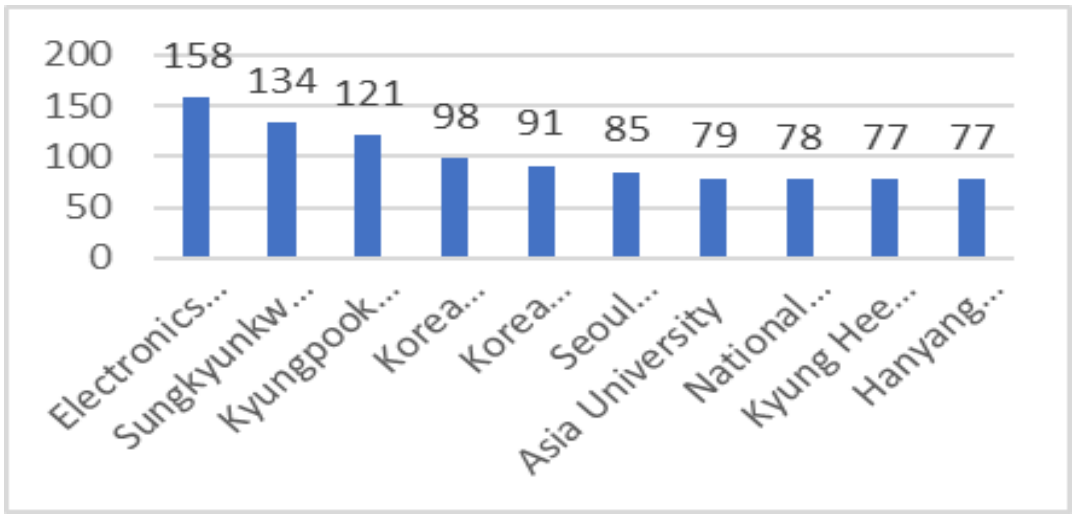

Image 5. Publication by Affiliation
Source: Researcher,2023

Image 5 represents the classification of articles by affiliation. In the study, there were ten research institutes, the most at the Electronics and Telecommunication research institute as many as 158, then Sungkyunkwan University at 134, Kyungpook National University at 121, Korea Advanced Institute of Science and Technology at 98, Korea University at 91, Seol National University 85, Asia University 79, National Cheng Kung University 78, Kyung Hee University 77, Hanyang University at 77.

4.5 Publication by Subject

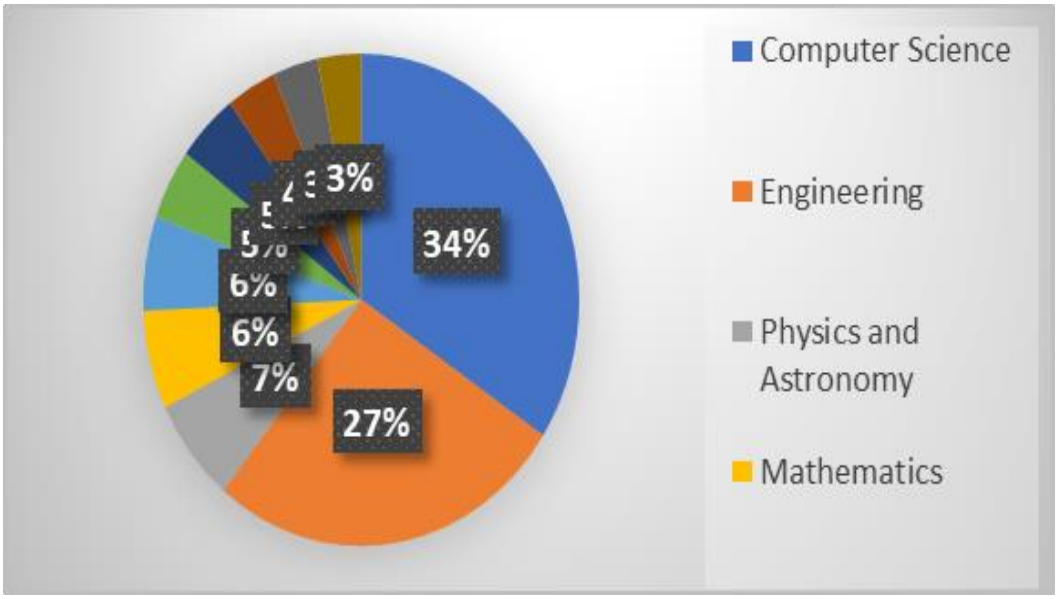

Image 6. Publication by Subject
Source: Researcher,2023

Image 6 represents the classification of articles by subject. The results of the publication by Scopus are based on the highest percentage of subjects, 34% computer science. The second highest percentage is 27%, namely Engineering, then in the percentage of 7% physics and astronomy, at 6%, there are two subjects, namely Mathematics and Materials Science. Next, at 5%, There are also two subjects, namely Social sciences and energy. In the eighth position, there is 4% chemistry; in the last position is 3%, there are subjects Biochemistry, Genetics and Molecular Biology, and Decision Sciences.

4.6 Publication by Source

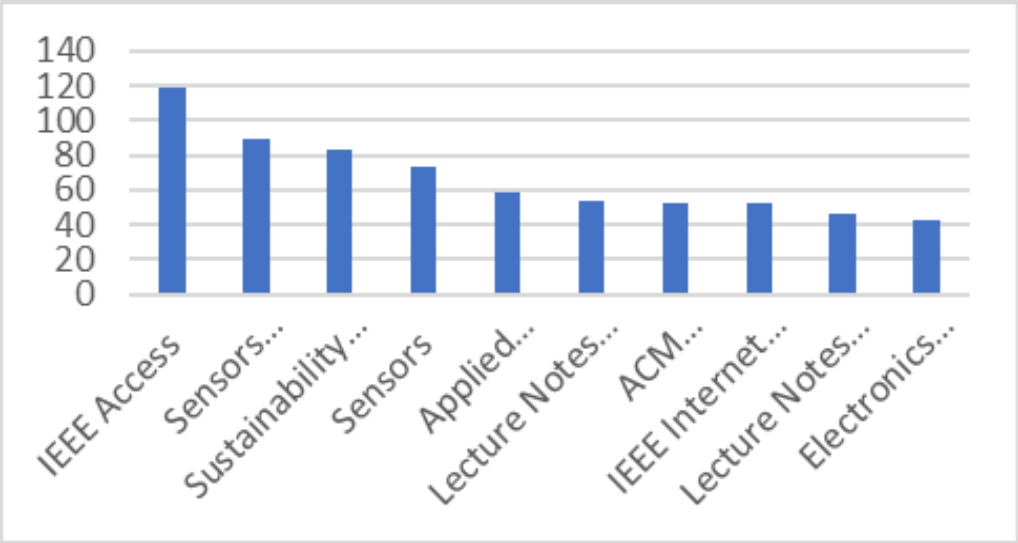

Image 7. Publication by Source
Source: Researcher,2023

Image 7 represents the classification of articles by source. Darmstadt was known for publishing scientific articles with the ten most reliable sources on using the Internet of Things (IoT) in the intelligent environment. Among the first, there is IEE Access, with a total of 119 articles; Censorse Switzerland has 90 articles; the third, sustainability of Switzerland, 83 Articles; The fourth article, 73 is censorship; in fifth place is Applied Science Switzerland, with 59 articles; in sixth place, there is a lecture Notes In Electrical Engineering in 54 Articles; Next is the ACM International Conference proceeding series with a total of 52 articles, in umpteenth place there is IEEE Internet Of Things Journal there are also 52 articles; in the following order Lecture Notes In Computer Science Including Subseries Lecture Notes In Artificial Intelligence And Lecture Notes In Bioinformatics there are 46 Articles; in tenth place, Electronics Switzerland has 43 articles.

4.7 Publication by DOCTYPE

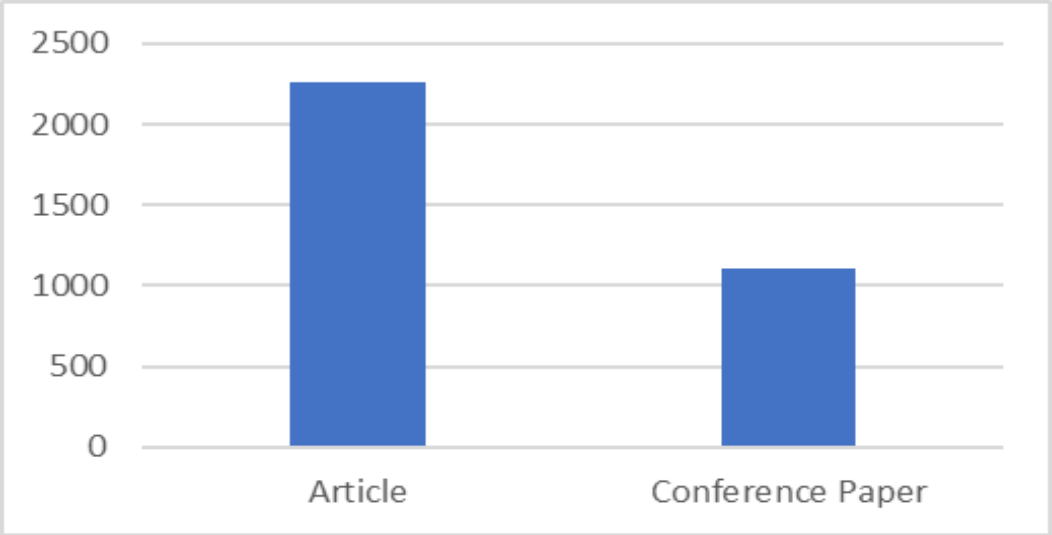

Image 8. Publication by Doctype
Source: Researcher,2023

In Image 8, it is known that this study uses Doctype Article and Conference Paper.

4.8 Publication by Funding sponsored

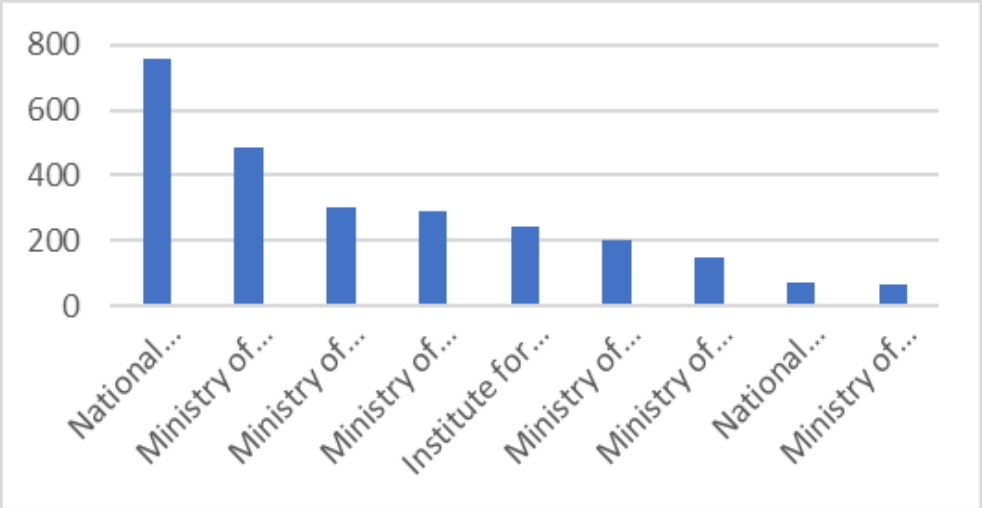

Image 9. Publication by Funding Sponsor
Source: Researcher,2023

In the Image 9, it is known that there are institutions that provide sponsorship in the publication, including; the National Research Foundation Of Korea(759); Ministry of Science, ICT and Future Planning(488); Ministry Of Science and Technology, Taiwan (304); institute For Information and Communications Technology promotion (241); Ministry Of science and ICT, South Korea(203); Ministry of Trade, industry and Energy (149); National et al. Foundation Of china(74); Ministry of Education, Science, and Technology (67); Korea Institute of Energy Technology Evaluation and Planning (53).

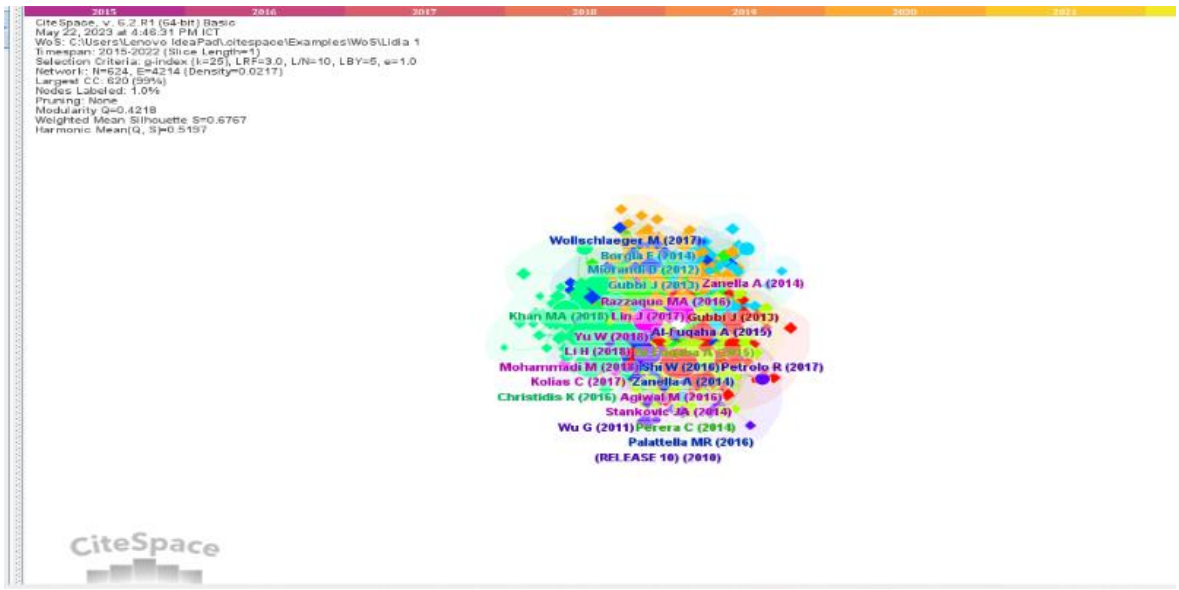

Image 10. IoT Smart Environment 2013-2023

Source: Researcher,2023.

The Image 10 above explains that researchers produced the most Internet of Things smart environment themed 2013-2023. Zanella A, Gubbi J, and Al Fuqaha became the authors who produced the most research with two studies from 2013-2023.

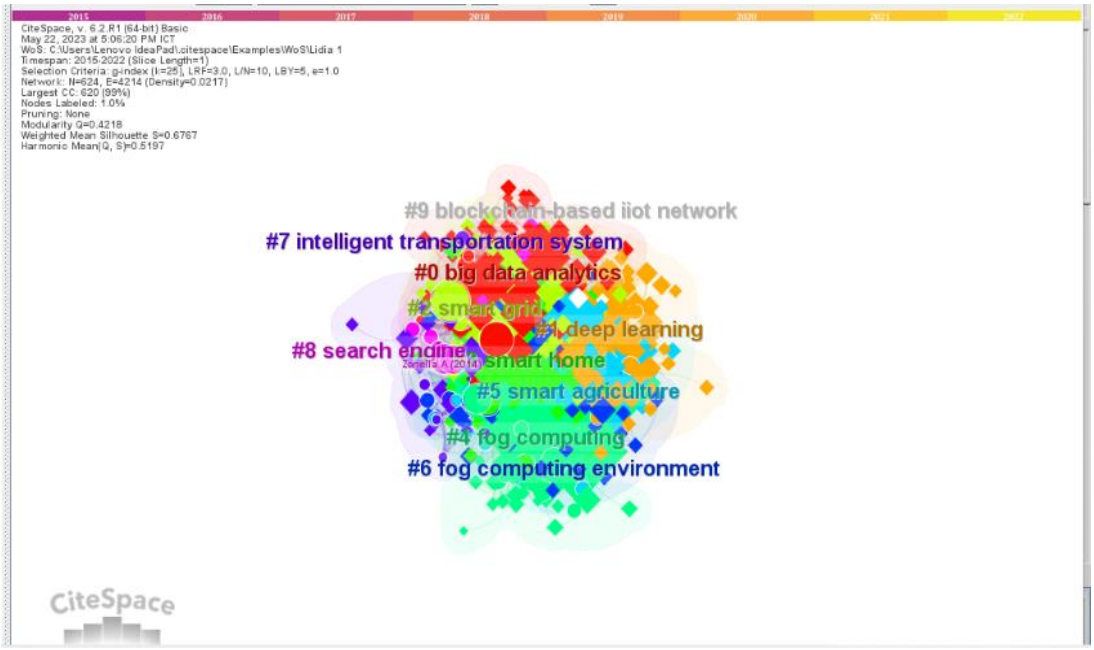

Image 11. The most Internet of Things smart environment themed 2013-2023

Source: Researcher,2023.

Image 11, The most Internet of Things smart environment themed 2013-2023. Research with the function of implementing the Internet of Things in E-Government towards the smart environment, which was analyzed through a bibliometric approach through Citespace, the results found the ten largest clusters related to the Internet of Things E-Government in a smart environment. Each cluster has a different number of items and themes. Cluster #0(112 item), Cluster#1(88 item), Cluster#2(86 item), Cluster#3 (84 item),

Cluster#4(79 item), Cluster#5(66 item), Cluster#6(51 item), Cluster#7(32 item), Cluster#8(16 item), and Cluster#9(6 item)

Cluster#0 With big data analytics by LLR having 112 and a cluster silhouette of 0.609, the terms that appear in clusters in this cluster are the smart city, artificial intelligence, and embedded systems. Relevant articles on Cluster#0 (Campero-Jurado et al., 2020) (Liang, Hatcher, et al., 2019). The article explains how the term sting is essential because the technology has seen rapid adoption, leaving many implementations vulnerable to unexpected threats. However, with it also, the technology can potentially threaten crimes, attacks, intrusions, and confusion. For example, the existence of CPS (Cyber-Physical System), a closed system used by IoT to collect data, which is then analyzed by the CPS application, and the result is that in order to control the CPS itself, in particular, enabled by IoT, CPS is a critical infrastructure system (Liang, Hatcher, et al., 2019)

Cluster#1, with the deep label learning by continuous LLR, has 88 measures and terms that appear in this cluster, namely the Internet of Things, machine learning, and deep learning. In this case, explaining this is the main because technology will still face challenges in several problems, such as the lack of efficient use of some 5G resources such as computing, communication, storage, and service resources; in addition, it is about low overhead demolition decision making and resource allocation strategies and excellent protection schemes (Shuai Yu; Xu Chen; Zhi Zhou; Xiaowen Gong; Di Wu, 2021) and security, IoT by LSI and management mechanism perspective(0.81) by MI labels.

Cluster#2, using the Smart Grid label has 86 sizes and a cluster silhouette of 0.576; the terms that appear in this cluster are energy efficiency, energy utilization, and wireless sensor networks. This is a topic of interest because intelligent grids will become automated and self-powered systems for monitoring environmental and climate factors, aiding timely Action, and benefiting sensor design by enabling antenna formation and R.F. circuits on a wide range of electricity and providing greater flexibility in hardware modification and rapid large-scale deployment, embedded sensors manufactured using selective surface Activation Induced by laser technology that enables integration of electrical circuits with free-form plastic sensor housings. (Duobiene et al., 2022) This label is by LSI and management mechanism perspective (0.68) by MI.

Cluster#3, using the Smart Home label has 84 sizes and a cluster silhouette of 0.694. Terms that appear in this cluster are Automation, Intelligent Buildings, and Smart homes. This label is significant because it has a distributed data storage solution with security and scalability; it introduces an innovative privacy agreement management scheme that monitors the performance of services following preferences and following relevant privacy laws; the main objective is to minimize the delay of total offloading and utilization of network resources by jointly optimizing compute offloading, resource allocation, and service caching placement, and in this study utilizing federated learning(F.L.) (Majdoubi et al., 2021)

Cluster#4, using deep learning labels, has 79 cluster silhouette sizes of 0.798. Terms that appear more often in this cluster are Internet of Things, IoT, and network security. This label has become very important because being a blockchain solution that targets IoT is not only able to overcome many of the challenges facing IoT but also introduces another flaw in terms of performance and makes adoption difficult to achieve; it is vital to provide solutions to address the needs of meeting IoT requirements and addressing IoT challenges (Sotirios Brotsis a, Konstantinos Limniotis a b, Gueltoum Bendiab c, Nicholas Kolokotronis a, 2021) Blockchain is a distributed database of records or ledger, The majority of network peers have verified the characteristics of this blockchain through protocol consensus. They are immutable, therefore independently supporting very high transparency and security. This label by LSI IoT environment management mechanism perspective (4.56)

Cluster#5, the Smart Agriculture label has 66 sizes and a cluster silhouette of 0.23; the terms that most often appear in this cluster are Internet, monitoring, and sensors. Therefore, IoT technology must be applied to agricultural production and scientific research, which can change agricultural production modes and management levels, accelerate agricultural modernization, and achieve smart agriculture. The Internet can be used for remote monitoring and production management in the process, monitoring cultivation, and traceability of agricultural product safety. (Hu et al., 2021) It is labeled becomes very important for IoT agriculture using RFID sensors, visual terminals, and other sensing equipment for information field of agricultural lava planting, gardening, animal husbandry, aquaculture, and logistics products; it can make full use of wireless sensor networks, mobile, and Internet communication networks and other modern means to enable a reliable transition of agricultural Information, labeled in this cluster by LSI intelligent agriculture perspective management mechanism (0.66)

Cluster#6, the use of the label fog computing environment has 51 sizes; the term that appears more often in this cluster is edge computing and fog computing; the terms that appear in the article focus on fog computing, this is because it is felt that fog computing can support IoT with computing resources and services deployed close to where data is perceived. Action needs to be taken (Puliafito et al., 20 19). Fog services can be used on resource-rich end devices, such as video surveillance cameras, advanced nodes at the network's edge, such as gateways, cellular base stations, and dedicated routers on the ONTI network. Moreover, Fog computing stand-alone or can interact with each other with cloud services to meet more complex uses.

Cluster#7, terms that often appear in this study are gate aways, intelligent systems, and cost-effectiveness. The term that appears in the article is the intelligent transportation system. This discussion is essential; safety management mobilization activities for citizens and communities are supported by establishing an intelligent environment while implementing densely populated events such as religious events, entertainment, and political meetings, especially in big cities. (Jabbari et al., 2019) then with into the need for management or the role of Cost-effectiveness in management, for example, there is a crowd predicting the potential for natural disasters. The motivation is to improve safety management methods for the mobile crowd by filling the scalability and surveillance capability gaps.

Cluster#8, terms that often appear in this cluster are surveys, Internet of Things cities, as a survey on Internet of things, ha this focuses on search engines. In this topic, IoT devices have been used in various environments and applications of the intelligent world. These devices communicate with computing infrastructure servers and networks to send collected data relevant to connecting physical objects to the cyber world; Cyber-physical systems (CPS) are designed to collect and analyze data independently, without information sharing or interconnection, and increasingly severe challenges in finding valuable Information, thus, to efficiently and precisely utilize IoT data, Search techniques are designed according to the most basic IoT environment (Liang, Qian, et al., 2019)

Cluster#9, the terms that often appear in the cluster are Internet Of things, industrial internet of things, digital devices, these terms focus on Blockchain-based IIOT Network, this focus becomes very important in protecting the network.

5. CONCLUSION

The findings of this study are some exciting information about how the interested researchers carried out research related to the use of the Internet of Things in E-Government towards a Smart Environment in the last eight years. In searching for document publications

in the form of articles and conference papers, authors found that there are ups and downs every year but still more likely to rise; authors with the highest number of publications are Darmstadt, G.L. by publishing 14 documents, in addition to the country with many publications, namely South Korea with a total of 2042 documents, and the country with the highest number of affiliates, namely the Electronics and Telecommunication Research Institute. The study revealed many fields of study that have had issues with the Internet of Things function in E-Government in these eight years, with computer science as the highest science with a percentage of 34%. Furthermore, this study shows the findings of connectivity documents in 3365 scientific articles that have been processed, so this connectivity is divided into 10 clusters that have their respective study focuses. The large number of studies related to the use of the Internet of Things in E-Government to create a Smart Environment in the last eight years, which has been described in the explanation in the previous section, can be a reference for further research to find out the role of use in the process of creating a better smart environment. to be of benefit to society at large.The authors hope that some of these findings can spark and become a reference in the focus of Internet Of Things research in E-Government towards an intelligent environment in future research.

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