

Sustainable Housing Business Research Trend

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ABSTRACT

Purpose: Good and coordinated administration is essential for completing a property. This study focuses on aligning individuals' control with their distinct objectives. Homebuilders strive to address problems as effectively as possible to attain the most significant success from multiple perspectives.

Design/methodology/approach: SCOPUS.COM is a library of source-neutral abstracts and citations vetted by recognized experts in their respective disciplines. From 1985 to 2022, researchers discovered 835 documents on sustainable housing in the SCOPUS.COM database, according to (1) country or region, (2) source, (3) funding sponsor, (4) subject, and (5) affiliation.

Findings: Indonesia ranks below Malaysia, India, and China in Asia and ASEAN but above Singapore and Thailand. Indonesia continues to be competitive in housing research and publication. Sustainability Switzerland has 54 documents, followed by the IOP Conference Series Earth and Environmental Science with 37, International Journal of Housing Science and Its Applications with 24, IOP Conference Series Material Science and Engineering with 19, Habitat International with 13, and Building and Environment with ten documents. Hong Kong, China, Korea, and Malaysia provide the most institutional funding, where the sources include DIKTI, ITS Surabaya, UNDIP Semarang, and U.I. Jakarta in Indonesia. Engineering has 386 documents, Social Science 334, Environmental Science 257, and Energy 161. The Netherlands, Malaysia, Hong Kong, and India account for most affiliations, while three documents from ITS Surabaya represent Indonesia. There are significant gaps in sustainable housing research and publishing. Supporting renewable energy is a global trend, and sustainable development must expand.

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I. INTRODUCTION

Effective and strategic management is the first step toward a successful building project. This study explores how better to provide residents with sufficient control regarding their objectives. When constructing a home, builders always look for the most effective, multifaceted solution to every problem. The abandonment of proper care to maximize the efficiency of resources and skilled labor will cause the final price to be much higher than expected. Without good forecast management or a more in-depth conversation, the costs will quickly balloon if we take further steps. Every employee is responsible for adhering to the protocol and keeping a positive attitude while on the job. The locals have long been concerned about the standard of their housing. Since this is such a pivotal stage in the construction process, service providers must employ caution when selecting materials suitable for use in a home setting. The overarching goal of this paper is to generate several concepts that will boost cost, quality, and time efficiency in residential buildings without requiring that the

industry adjusts to the materials currently on the market. The goals are twofold: (1) to design a small-scale management system for residential construction that is efficient in terms of time, money, and quality; and (2) to finish a building development that allows for a thorough evaluation before implementation. The researchers uncover prospects for constructing a cluster of three to five inexpensive houses. In terms of quality, money, and time, this review will benefit everyone who uses the service by lowering overall costs while maintaining high standards of excellence in a shorter amount of time.

II. LITERATURE REVIEW

Oyetunji et al (2022) proposes sustainable green housing delivery as the way to a balanced built environment in "Is green good: Unveiling the hidden benefits of sustainable housing delivery" (2022). However, stakeholders in underdeveloped countries do not fully support its implementation. More profound knowledge of the development's potential is required to stimulate the widespread adoption of sustainable housing. The benefits of sustainable green housing delivery are revealed in the study. It is the outcome of a thorough questionnaire investigation of the literature's most frequently occurring positive themes. Private-sector investors of home builders and academic professionals compile the poll. Data analysis uses mean item score, factor analysis, and ranking agreement analysis, where all 22 advantages are necessary. Through factor analysis, benefits to the environment, the economy, and housing promotion were the unique elements. The findings show that there is broad agreement between the housing industry and the academic community on the benefits of promoting housing (73%), the economy (100%), and the environment (100%). They provide housing providers with a trustworthy guide and sound guidance on implementing sustainable housing delivery, which is critical for sustaining a healthy and sustainable ecology. With the help of this paper for the government, clients, legislators, and practitioners, more sustainable housing will be produced and more money invested in it.

Teng et al., (2022) investigates the Kerinchi Housing Program in Sustainable Architecture in the Urban Studies on Walkability in Public Housing (2022). It is one of the government's projects aimed at relocating squatters and satisfying the housing needs of Malaysia's low-income (lowest 40%). Stakeholders' viewpoints on the effectiveness of the current streetscape element will be collected and examined. The study adopts a quantitative methodology, gathering information through on-site research and questionnaires. The streetscape characteristics are evaluated using four criteria: enjoyment, safety, comfort, and accessibility. The majority of respondents (55.33%), physical risk (42.30%), poor sanitation and roadway maintenance (54.36%), and poor walkability design for people with special needs (53.6%) indicated that they would spend less time walking. Promoting the walking environment and facilities, establishing a pedestrian-only zone, implementing congestion charges, and encouraging government officials to play a more active role are just a few measures offered by the research findings to promote walkability.

Okitasari et al., (2022) investigates the impact of sociocultural attitudes on adopting sustainability measures in a low-income context in Mumbai's Evidence Examines Socioeconomic Factors Influencing Community Acceptance of Sustainable Social Housing (2022). It is necessary to gain a deeper awareness of socio-economic difficulties. Social housing projects bridge the gap between policy expectations and project approval. In analyzing the home satisfaction of social housing renters in Mumbai who are part of slum repair initiatives, the study delves into the numerous components of well-being. Social housing surpasses slums regarding social and environmental sustainability, but location disadvantages limit social acceptance. Using primary data from 298 Mumbai families, he investigates the various levels of housing satisfaction. As a result, economic potential in slum rehabilitation is limited, as evidenced chiefly by the loss of the second earner's employment, compounded by the transfer to social housing. Location, accessibility to the building, household size, and opportunities for social interaction are the most critical elements in predicting reported housing satisfaction of households living in social housing vs slums.

According to Yahya & Hassanpour (2022), a methodological framework for sustainable architectural design: Housing Practice in the Middle East, rising countries don't put enough theoretical and practical effort into developing sustainable housing. Choosing the best course of action frequently involves ignoring situational and contextual elements and local customs. The goal is to create a design framework with various design models that will allow architects worldwide to enhance their sustainable practices in the architectural industry. For architects in many regions, including the Middle East, the study demonstrates the grounded theory technique to translate theory into workable home design models. These architects may identify regional patterns and select design options following regional limits. The research is divided into three phases. Guy and Farmer's six logics for systematic, sustainable design methods are combined in the comparative study to produce design models that can be used for sustainable housing practices. The models are then put into a design framework and assessed using Middle Eastern methods in the following phase. The framework can be applied by employing the design

models alone or combining several models to develop more responsive, sustainable housing design practices. It was validated by tracking sustainable housing models in the design practices of Middle Eastern countries. The established framework enables architects and developers in Middle Eastern cities to quickly and practically trace regional design models and virtually select pertinent design approaches and integrative techniques. It transforms theoretical models into workable solutions for designers and researchers worldwide.

In his paper *Concomitant Impediments to the Social Acceptance of Sandbag Technology for Sustainable and Affordable Housing Delivery: The Case of South Africa*, Adetooto & Windapo (2022) explores homelessness in South Africa. Sandbag Building Technologies (SBTs) are widely recognized as low-cost, environmentally friendly, and time-efficient alternatives to standard building materials. Their acceptance rate, on the other hand, remains relatively low. Furthermore, there has been little research on the low adoption and public acceptance of SBTs, demanding further exploration. As a result, this study investigates the social barriers to SBT acceptance in home provision. Researchers conducted a comprehensive literature review to identify 18 social hurdles to using SBTs and collected empirical data from a survey of 228 South African construction specialists. Aside from a lack of awareness of the advantages of sandbags, courses and training, and professional expertise and abilities, one of the most significant impediments is a lack of grasp of the advantages. A comparison of the various survey respondents' perceptions is discussed. This study provides a framework for government agencies and construction partners to make realistic and well-informed decisions about delivering more sustainable and affordable homes.

Theories, approaches, and constraints on the dynamics of sustainable home development in the Global South Aliu (2022) demonstrate that sustainability is the main topic in the global discussions of the twenty-first century. It is a consequence of economic progress, social fairness, and environmental stability. In any discussion about sustainability, housing must be considered. By degrading the natural environment, permanent structures such as homes might impede progress. As an economic commodity, it can drive growth by increasing the gross domestic product by creating diverse employment opportunities and the generation of finances. However, the relationship between housing structures, the physical environment, and sustainability in the Global South is little understood. This study aims to contribute to the discussion by addressing three significant issues: How can the world's expanding population be housed affordably? How can long-term, high-quality housing be produced? How can the consequences of housing on the physical environment be managed? It investigates housing shortages, sustainable housing development approaches, the challenges of providing sustainable housing, and potential solutions for sustainable housing development in the Global South. It has significant policy and practical consequences for developing-country house development.

Whether to construct or not to build is the question. According to the *Fuzzy Synthetic Evaluation of Hazards for Sustainable Housing in Developing Economies* Adabre et al. (2022), developing sustainable housing is essential for achieving the Sustainable Development Goals of the United Nations. Governments and prospective developers, however, view investments in sustainable housing as risky due to the growing shortage. The study uses Ghana as a case study to examine the risk factors that prevent sustainable housing development in emerging nations. After an extensive literature analysis, thirty risk factors were identified, which the researchers then categorized into five theme groups. Then, a questionnaire was distributed to Ghanaian housing experts to evaluate the nation's advancement toward housing-related sustainable development goals and the risk factors that affect them. Researchers found that financing-related risk variables are the most important, followed by procurement-related design and construction, operation and maintenance, and political-related risk factors using fuzzy synthetic evaluation (FSE). The research informs practitioners and policymakers about the risk factors that need more consideration when building sustainable housing. The study also suggests encouraging successful land expropriation, energy-efficient retrofitting, transparent procurement, effective contractual tactics, and co-production and co-design, in addition to avoiding significant risks.

The importance of evaluating the perspectives of experts (i.e., suppliers of housing facilities and services) and households (i.e., consumers of housing facilities and services) is emphasized in the paper *Evaluation of Symmetries and Asymmetries on Barriers to Sustainable Housing in Developing Countries* (Adabre, Chan, Edwards, & Mensah, 2022). It is done to develop and implement effective and sustainable housing policies. Policymakers are given ambiguous data from preliminary studies on sustainable housing development's supply and demand sides. As a result, ready-to-implement policies cannot be both eclectic and specific. This study examines sustainability issues from both angles to pinpoint asymmetries and symmetries that impede sustainable housing. The current investigation found evidence of institutional, economic, social, and environmental constraints.

Professionals working in formal/regulated institutions of the Ghanaian housing market and household occupants were given a standardized questionnaire utilizing selective sampling and non-probability. The Mann-Whitney U test and the fuzzy synthetic evaluation (FSE) approach were utilized to objectively examine a multivariate component connected to variations in respondents' goals, motivation, and experience for a significant difference test on underlying obstacles (i.e., category of barriers). The results showed that the two

respondent groups' assessments of some fundamental impediments varied significantly. Similarly, for the social and environmental categories of obstacles, Z-values of 2.24 and 1.48 demonstrated significant differences at $p < 0.05$. Significant test findings reveal problems that necessitate a comprehensive and focused program. The FSE indexes also serve an allocation purpose by highlighting to politicians the biggest obstacles to sustainable housing.

According to Alqahtany & Jamil (2022), academic research on issues related to sustainable housing and the health of its occupants is becoming more and more popular in Saudi Arabia. His study Assessment of Educational Strategies shows it as Part of the Infrastructure Design Process for a Healthy, Sustainable Housing Community. It looks into the creative teaching methods used by third-year students at Imam Abdullah Bin Fahd University in Dammam, Saudi Arabia, during a rigorous design studio workshop to create a healthy and sustainable housing project. The students' sessional and final jury evaluations were seen by academic representatives from their respective departments, who also welcomed business executives. The studio session resulted in a thorough master plan for a community that respected the well-being of its residents and was healthy and sustainable. National and international planning standards, as well as local housing laws and ordinances, are all incorporated into the master plan. The assignment improved the skills and comprehension of the students. The design studio's output was ascertained by comparing the five-year average student grade to online feedback surveys.

According to the Relational pre-impact evaluation of conventional home characteristics and carbon footprint for building a sustainable built environment, careful energy consumption planning for the dwelling habitat is required for sustainable, comfortable living (Gardezi et al., 2022). Changes in the physical attributes of advanced facilities, their environmental interaction, and their carbon footprint across their operational life cycle are crucial to modern research and other energy planning concerns. This study's objective is to examine the relationship between the physical characteristics of a structure and the consequent carbon footprint of conventional home designs. As 3D virtual prototypes, the development of traditional Malaysian model dwelling units and the application of regression analysis to assess the environmental effect paradigm of the constructed facility. He employed building information modeling. He uses a partial life cycle assessment to initiate a CO2 operational pre-evaluation during the early design and planning stages to discover a statistically significant and positive linear relationship between the parameters area, volume, power rating, and carbon footprint. The findings are essential for creating resource-efficient living areas and a sustainable built environment.

III. METHODS

Independent of any particular set of sources, SCOPUS.COM is a database of abstracts and citations that knowledgeable specialists in the relevant fields have meticulously curated. It provides academics, libraries, research managers, and funders with cutting-edge discovery and analytics tools for promoting ideas, people, and institutions. 1.8 billion citations date back to 1970, 84 million records, 17.6 million author profiles, 94.8 thousand affiliation profiles, 7,000 publishers, 84 million records, and 58.5 million published after 1995. There are over 18.0 million items available for free online access (including gold, hybrid gold, green, and bronze) and over 25.4 million records published before 1996 (going back to 1788). As of now, it stores more than 240 different types of trade publications, as well as 10.9 million conference papers, 15.8 million funding-related items, 47.4 million patent links, 27.1 thousand active serial titles, 25.8 thousand active peer-reviewed journals, including 5.3 thousand gold open access journals, 825 book series, 63.3 thousand book series volumes, and much more. Scopus Author Profiles provide access to over 1.06 million preprints from arXiv, bioRxiv, ChemRxiv, medRxiv, and SSRN. With an average of 29 references per publication and 11 citations for each paper, a 2020 CiteScore for 59.0+ thousand titles implies growth of 4%+ year over the previous three years. Over 250,000 books are in SCOPUS.COM's database, along with papers, authors, journal-level metrics, CiteScore metrics, and book reviews. More than 7,500 human and animal health and dental and medical care titles. There are roughly 5,100 tags in the life sciences category: agronomy, biology, biochemistry, genetics, molecular biology, immunology, microbiology, neurology, toxicology, and pharmacology. The Physical Sciences division of the library houses more than 9,000 books on topics such as chemical engineering, chemistry, computer science, earth and planetary sciences, energy, engineering, environmental science, materials science, mathematics, physics, and astronomy. Social Sciences now maintains a collection of over 11,500 monographs and other publications covering the fields of the humanities, business, management, accounting, decision sciences, economics, econometrics, finance, psychology, and social science.

The researchers used SCOPUS.COM to find the first 76 papers on socio-economic agriculture from 1962 to 2022. We also discovered the first 403 articles on socio-sustainability from 1992 to 2022. Analyze. Listed below are articles from SCOPUS.com that will provide you with further information on the techniques used in

this study. First, there is the descriptive study based on data from SCOPUS.COM conducted by I Nyoman Sudapet et al (2021). In addition, Setiawan et al. (2021) presents a descriptive study using information from SCOPUS.COM. To better understand the trends in digital tourism over the previous decade, researchers compiled 203 papers containing abstracts of relevant articles. Researchers have retrieved 62 pertinent digital documents to transportation (2012-2021)—finally, the Sudapet et al. (2021) document. Over the past five years, researchers have received 249 records with the title digital rural. Fourth version, Setiawan, Nasihien, Sukoco, Rosyid, et al., (2021) Researchers have compiled a total of 586 papers (2012-2021). The analysis uses documents from (1) the countries of the research, (2) the institutions where the researchers worked, (3) the affiliation institutions, and (4) the organizations that helped pay for the research. Only conference papers, articles, reviews of conferences, and book chapters are in the fields of tourism and digital tourism in Indonesia, according to the authoritative database SCOPUS.COM. Therefore, Indonesia must make serious efforts to catch up to other countries. SCOPUS.COM found 171 publications where Setiawan et al., (2019) was mentioned in the titles, abstracts, and keywords. From 1989 to 2020, researchers in Indonesia have published 122 publications on topics like fish and solar cells and Sustainable Transportation & Mobility. The Sepuluh Nopember Institute of Technology Surabaya (ITS) is a member of the global journal SCOPUS.COM, and (I Nyoman Sudapet et al., 2019) reports that it is ranked fourth in tourism and marine research. After searching for worldwide publications on sociological research and sustainable management in Indonesia for three decades, Halim P. identified only five that met his standards (1990-2020). (Setiawan, Bin, et al., 2019), argues that developing portable inflatable solar cold storage house technology in Indonesia is on the proper track for future study and publication based on SCOPUS.COM Analysis of search results and VOS Viewer Analysis of supply chain and fisheries research.

IV. RESULTS AND DISCUSSION

The researchers examined 835 publications with sustainable housing-related titles between 1985 and 2022. The studies classified them as follows: Papers are organized as follows: (1) by country or region, (2) annually by source, (3) geographically by the sponsor, (4) topically, and (5) by affiliation.

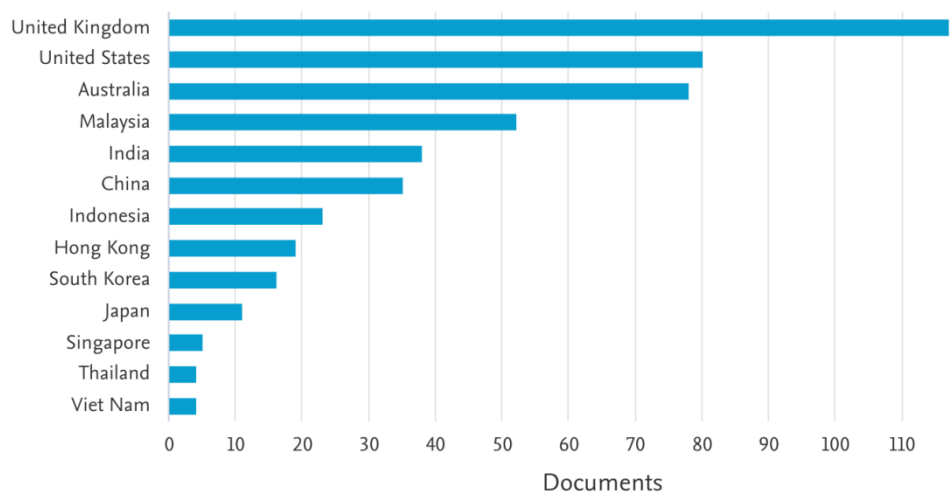


Figure 1. Documents by country or territory, 835 sustainable housing documents

Documents from up to 15 different countries or territories are compared and described in Figure 1. Indonesia ranks lower than Malaysia, India, and China but higher than Singapore and Thailand within the ASIA and ASEAN regions. As a result, Indonesia maintains a competitive edge in sustainable housing research and publication. SCOPUS.COM.

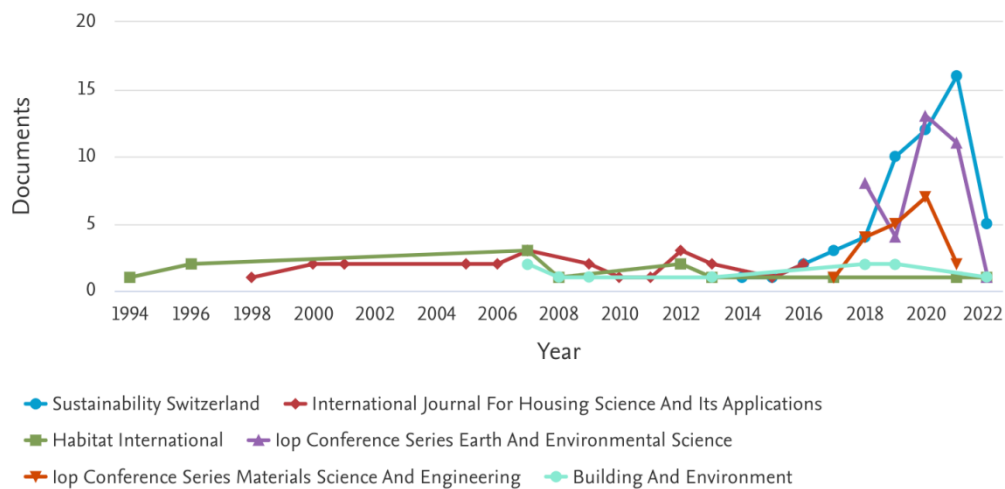


Figure 2. Documents per year by source, 835 sustainable housing documents

Figure 2 compares the total number of documents from up to 10 different sources and describes the number of documents produced by the source each year. Sustainability Switzerland has published the most relevant articles (54), followed by IOP Conference Series Earth and Environmental Science (37), the International Journal of Housing Science and its Applications (24), IOP Conference Series Materials Science and Engineering (19), Habitat International (13), and Building and Environment (10).

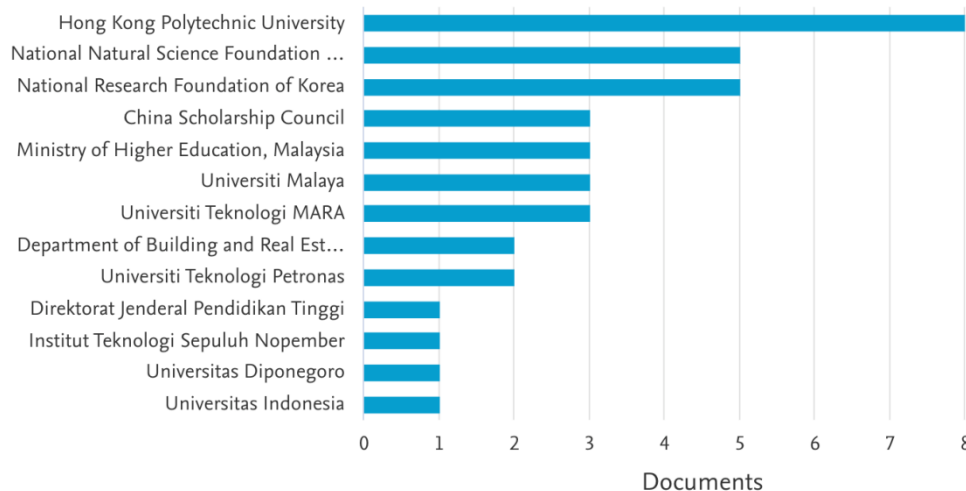


Figure 3. Documents by funding sponsor, 835 sustainable housing documents

Figure 3 provides a detailed description of the papers by funding sponsor and compares the total number of records from up to 15 sources. Major Hong Kong, China, Korea, and Malaysian financial backers. schools in Indonesia such as DIKTI, ITS Surabaya, UNDIP Semarang, and UI Jakarta.

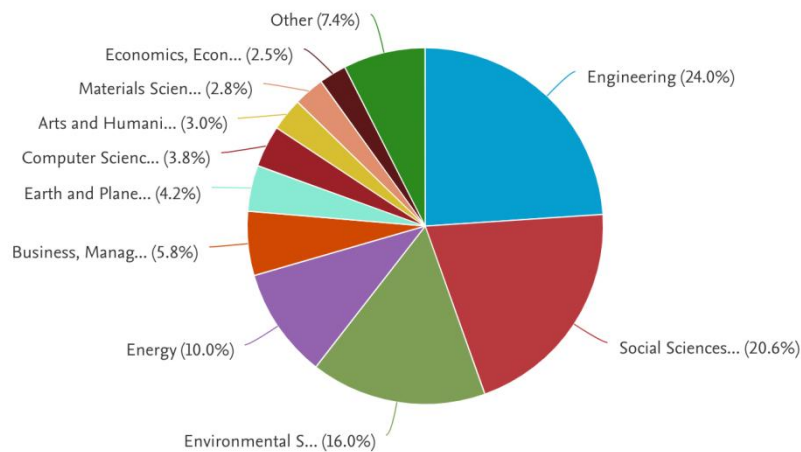


Figure 4. Documents by subject area, 835 sustainable housing documents

Figure 4 summarizes the articles on sustainable housing, broken down by topic. It compares the number of articles from up to 15 different sources, looks at the search results, and looks at the titles of the articles. In that order of prevalence, there are 386 documents on engineering, 332 on social sciences, 257 on environmental science, and 161 on energy.

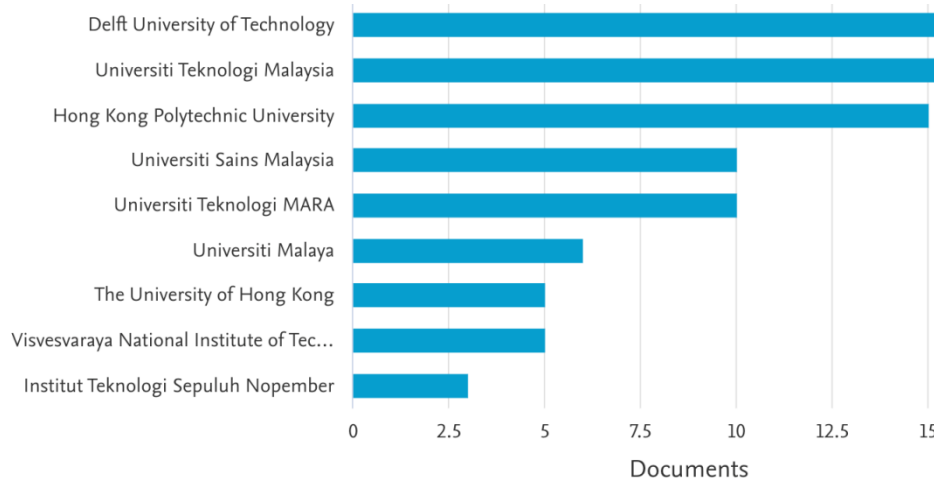


Figure 5. Documents by affiliations, 835 sustainable housing documents

Figure 5 compares the total number of papers from up to 15 sources and describes them according to their associations. We used the SCOPUS.COM database to look for and evaluate sustainable housing-related terms, titles, and affiliations from the Netherlands, Malaysia, Hong Kong, and India. The ITS Surabaya 3 documentation set covers Indonesia.

VI. CONCLUSION

The successful completion of a home is genuinely dependent on professional and committed management. This study investigates ways to better give residents enough control given their unique goals. Every time a problem arises while building a house, the most practical, all-encompassing solution is sought after. SCOPUS.COM is an abstract and citation database that does not filter material based on where it was published. The SCOPUS.COM database has yielded 835 articles with the term "sustainable housing" since 1985. These articles are then divided into the following five groups: Documents are categorized as follows: (1) by nation or territory; (2) by documents produced each year; (3) by financing sponsor region; (4) by subject; and (5) by affiliation. In ASIA and the Association of Southeast Asian Nations, Indonesia is ranked higher than Singapore and Thailand but lower than Malaysia, India, and China (ASEAN). Indonesia continues to have a competitive

advantage in publishing research on sustainable housing. SCOPUS.COM. Analysis of the SCOPUS.COM search results for the term "sustainable housing" reveals that sustainability is prevalent in the housing industry. Switzerland has the most relevant articles with 54, followed by the IOP Conference Series Earth and Environmental Science with 37, the International Journal of Housing Science and its Applications with 24, the IOP Conference Series Materials Science and Engineering with 19, Habitat International with 13, and Building and Environment with 13. (10) Important financial backers include Malaysia, Hong Kong, China, Korea, and Korea. Jakarta is home to some of Indonesia's most prominent universities, although there are other institutions in Surabaya, Semarang, and Jakarta. Engineering is covered in 386 books, social sciences in 332, environmental studies in 257, and energy in 161, predominantly Malay, Dutch, Hong Kong, and Indian. Included are documents from the third version of Indonesia's International Transport System (ITS) in Surabaya. If Indonesia intends to follow the worldwide trend of green building and renewable energy, it must immediately reduce the gap between research and publication on sustainable housing.

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