

Urban Solar: Village Community Service Program, Narotama University, Surabaya, Indonesia-Based Renewable Energy Technology

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Abstract

The research population is all students of Narotama University, 1633 students. There are 286 document results of urban solar articles on scopus.com. Select year range to analyze: 2011 to 2022, documents per year by source. More than 10 papers: Solar Energy 26 documents, Energy Procedia 16, Renewable Energy 13, IOP Conference Series Earth And Environmental Science 11. There are 286 document results of urban solar articles on scopus.com. Select year range to analyze: 2011 to 2022, documents by affiliation. More than 5 paper: Ecole Polytechnique Fédérale de Lausanne 13 documents, Universidade de Lisboa 11, Faculdade de Ciências, Universidade de Lisboa 8, University of Zagreb 7, Politecnico di Milano 7, Lunds Universitet 7, Norges Teknisk-Naturvitenskapelige Universitet 6. There are 286 document results of urban solar articles on scopus.com. Select year range to analyze: 2011 to 2022, documents by country or territory. More than 20 papers: China 34 papers, the United States 34, Italy 28, the United Kingdom 27. There are 286 document results of urban solar articles on scopus.com. Select year range to analyze: 2011 to 2022, documents by subject area. More than 30 papers: Energy 161 documents, Engineering 89, Environmental Science 86, Social Sciences 38, Materials Science 32, Computer Science 31, and Earth and Planetary Sciences 31 researches. There are 286 document results of urban solar articles on scopus.com. Select year range to analyze: 2011 to 2022, documents by funding sponsors. More than 5 papers: National Natural Science Foundation of China 9 documents, Horizon 2020 Framework Programme 7, Energimyndigheten 6, European Commission 6. Crosstab analysis is intended to cross two or more variables to determine the relationship between these variables. The data used is nominal or ordinal type data, categorical data. Student support MBKM especially MBKM KKN Village, we can see that the best Department are Civil Engineering, Law, Information System, Computer System, Accounting and PGPAUD. Curriculum support MBKM especially MBKM KKN Village, we can see that the best Department are Law and PGPAUD. Ministry support MBKM especially MBKM KKN Village, we can see that the best Department are Civil Engineering, PGPAUD and Accounting. Student support to share MBKM program especially MBKM KKN Village, we can see that the best Department are Civil Engineering, PGPAUD and Accounting

Keywords

Urban Solar, Village, Community Services, Renewable Energy, and Solar Technology

1. Introduction

Merdeka Learning – Merdeka Campus is a program that is designed to speed up understanding various knowledge to prepare students to work. They can now freely enroll in any courses they want to enter the job market successfully. This policy is implemented based on Regulation of the Minister of Education and Culture Number 3 of 2020, concerning National Higher Education Standards. Article 18 states that undergraduate students are given the freedom to take credits in the study program: taking 20 credits on-campus but in other study programs and 40 credits off-campus. MBKM provides opportunities to be creative and competent, with a good personality as needed. It also pushes students to solve real problems, relates socially, collaborate, and achieve targets through real-world experiences.

(Direktorat Jenderal Pendidikan Tinggi Kemdikbud RI, 2020b, 2020a)

1.1 Objectives

The research purpose was to explore the ramifications of the new policy to college students, especially the Village Community Service Urban Solar Program.

2. Literature Review

The first is about city biodegradable disposal as a workable input of an electricity plant in a thoroughly renewable power network. It is found that the city dwellers' bio-waste can increase the adjustability of the electrical system. The use of more biomass fuel reduces operating costs to be cheaper.

The following literature is related to the streamlined assessment manner of rooftop solar power possibility based on city view image semantic segmentation. The model can speed up the calculation time with results that remain at the same level of accuracy.

The article talks about space-related volatility evaluation of the solar electricity for future city electric implementation using Meteosat satellite-derived datasets. The research results show that the construction of solar power plants can be carried out in areas that have abundant solar sources. This project is the best way to provide sustainable electricity based on natural resources for the cities around the power plant area.

The review is about power and financial evaluation of disseminated renewable gas and electricity production in small deprived city residents. The study reveals that the price of renewable urban electricity is still uneconomical today. However, it will be much more reasonable in the future following continuous development.

The reading concerns an editor-exclusive edition of the comprehensive transformation of city networks to become better and adaptable places integrating renewable power. The change from a high carbon area to a low one is difficult for the Government. The priority should be designing electrical systems for short to medium term. Urban expansion should incorporate renewable power plants. It can be done by estimating construction, natural resource availability, and networks for homes and vehicles. This edition features expert opinions on the future challenges of the electricity system towards a low-carbon urban area.

The article reviewed explains a parametric technique utilizing vernacular city cluster typologies to assess relationships between solar power applications and city development plans. The investigation results become input for planning the development of urban areas by optimizing the use of solar electricity.

Solar Energy in transition economies: The case of Beirut city. The study reviews the effects of various incentives from the Lebanese Government on solar power plants and their impact on the current financial crisis. The reduction in electricity subsidies made the most significant contribution despite the political challenges. The Government should create and implement legal instruments to promote electricity from renewable sources to be financially attractive to develop. The proposed model and research results are helpful for other countries.

The article discusses open-source modeling of low-carbon city surroundings with a big market for home-grown renewable production. It explains the effectiveness of geothermal sources for regional cooling networks. So far, it has received little attention. The research bolsters future renewable energy design for urban areas. Future development focuses on better area mapping, performance indicators, and scheduling for energy delivery.

The review is about city cells: expanding the power center idea to simplify space and region connection. The article describes the potential advantage of urban cells. It is crucial to think about various industries and parts of the city. The idea helps elaborate on the existing interdependence in the town.

Review of geographic information systems-based rooftop solar photovoltaic potential estimation approaches at urban scales. The study reviews the advantages and disadvantages of applying GIS-based rooftop solar photovoltaic. The results show that the possible estimation method can be used for large-scale spatial-temporal assessments of the future decentralized electricity system. The assessment results are helpful for the development of effective

regulations for their integration in the built environment. A new methodology is developed by combining GIS with LiDAR-based machine learning that is accurate and less computationally demanding. It will play a significant role in forecasting large-scale solar photovoltaic from rooftops.

(Alfaro & Miller, 2021; Buechler & Martínez-Molina, 2021; Devereux et al., 2021; Jahangir & Cheraghi, 2020; Liu & Bah, 2021; Njoh et al., 2019; Nuru et al., 2022; Robert et al., 2021; Syahputra & Soesanti, 2021; Wirawan & Gultom, 2021)

3. Methods

Crosstab is an analytical method that presents two different variables into one matrix, crosstab research shows tabulations that include rows and columns. Thus, the characteristic is that two or more variables have a descriptive relationship. The data are qualitative, especially on a nominal scale. The variables analyzed are variables that have a nominal scale. It is the easiest way to see associations in several data with percentage calculations and one of the most valuable tools because the results are easy to communicate. Furthermore, it provides input or insight into the nature of the relationship because adding one or more variables to a two-way cross-qualification analysis is the same as keeping each variable constant.

Respondens are all under graduate students, 1636 students

4. Results and Discussion

There are 286 document results of urban solar articles on scopus.com. Select year range to analyze: 2011 to 2022, documents by year. More than one paper: 2022 1 paper, 2021 32, 2020 40, 2019 47, 2018 27, 2017 26, 2016 30, 2015 23, 2014 23, 2013 15, 2012 11, and 2011 11 documents.

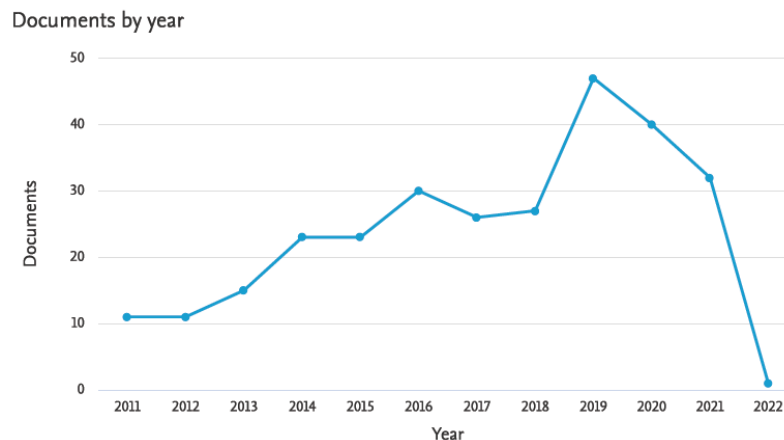


Figure 1. Urban Solar Research Trend scopus.com

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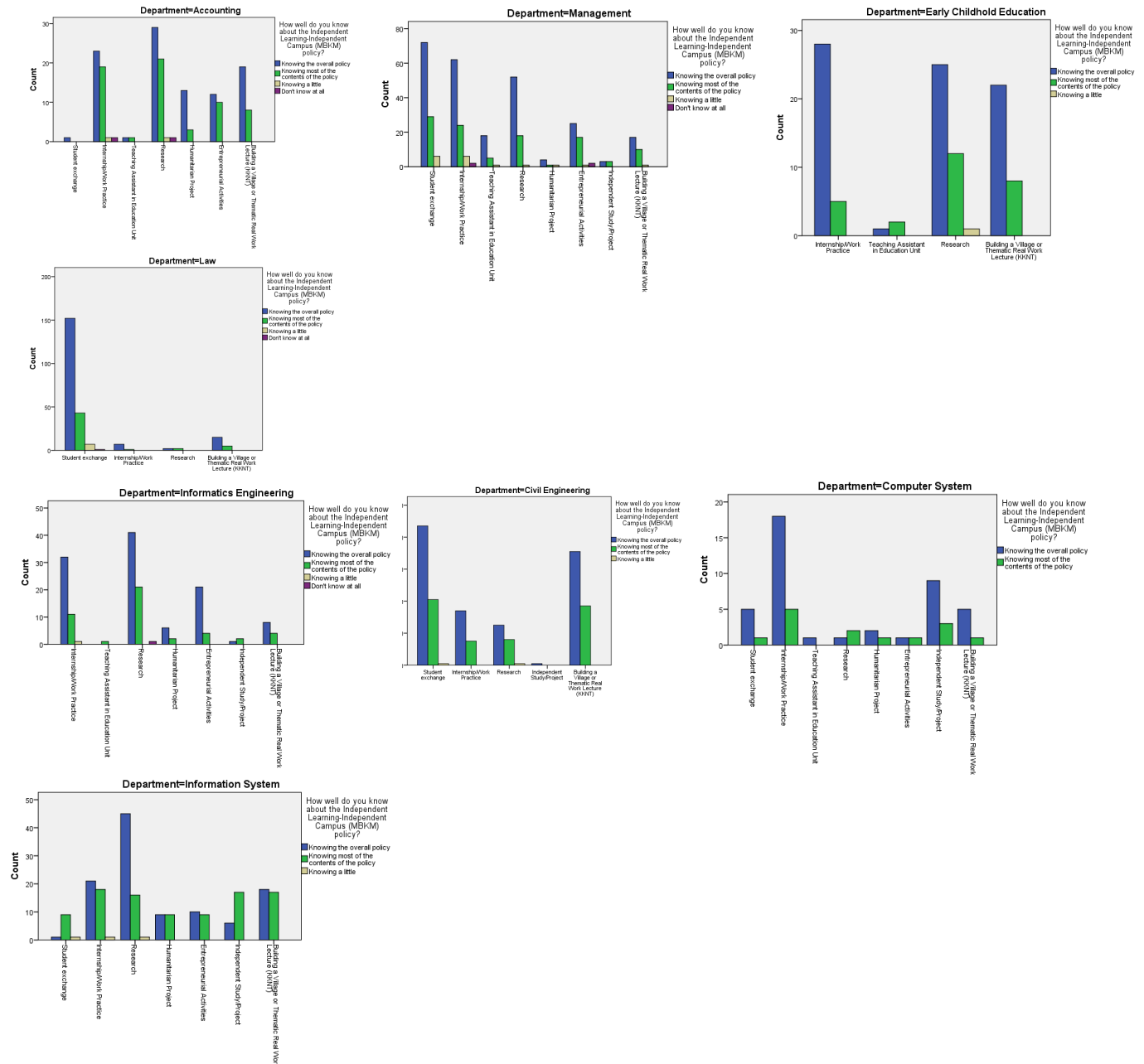


Figure 2. Student support MBKM especially MBKM KKN Village

From Figure 2. Student support MBKM especially MBKM KKN Village, we can see that the best Department are Civil Engineering, Law, Information System, Computer System, Accounting and PGPAUD

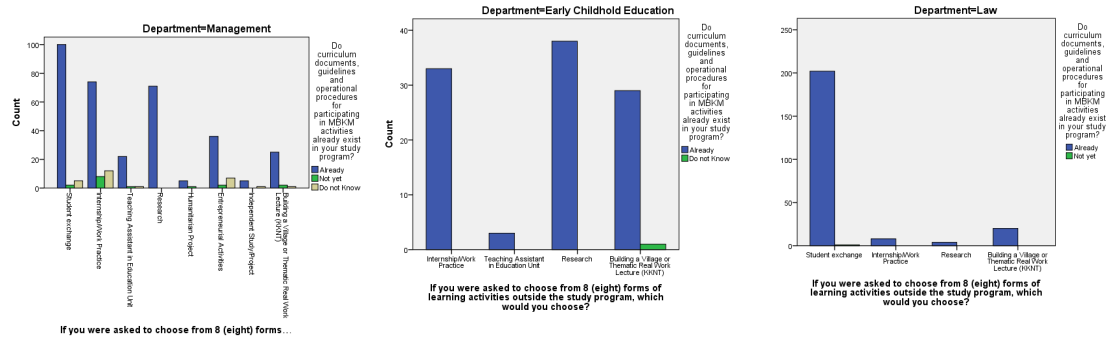


Figure 3. Curriculum support MBKM especially MBKM KKN Village

From Figure 3. Curriculum support MBKM especially MBKM KKN Village, we can see that the best Department are Law and PGPAUD

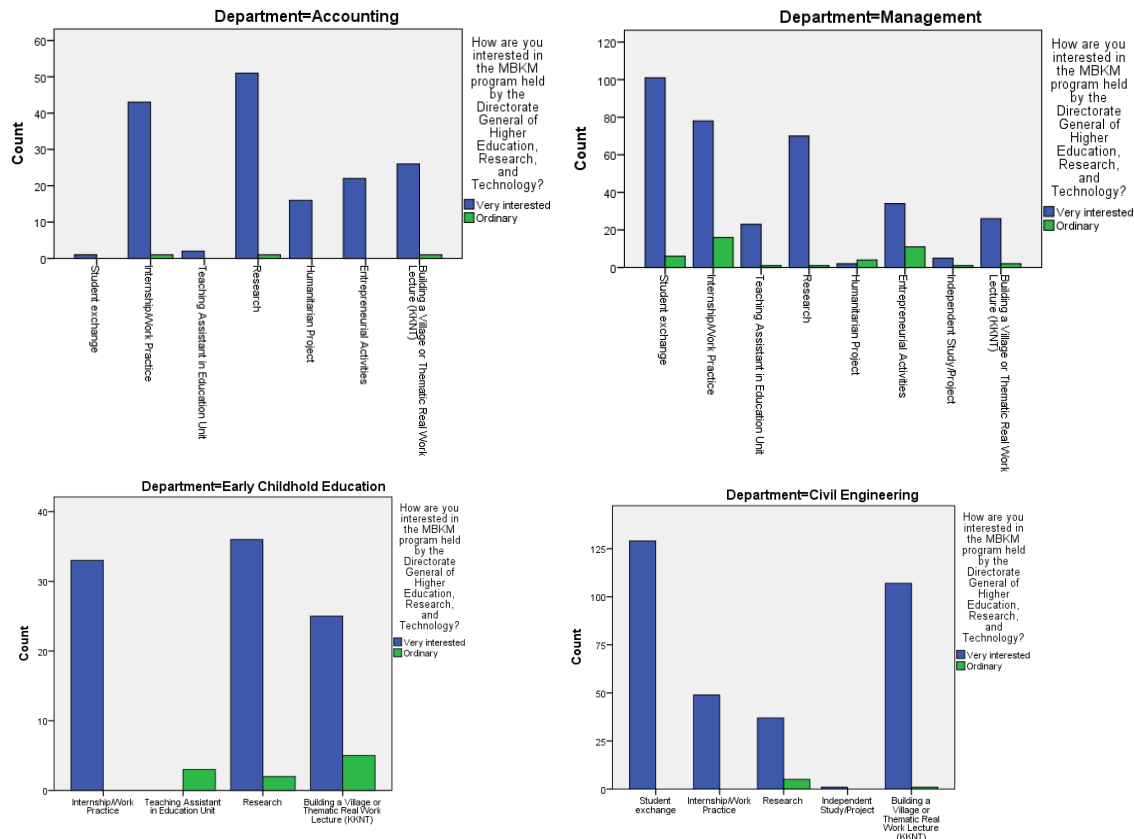


Figure 4. Ministry support MBKM especially MBKM KKN Village

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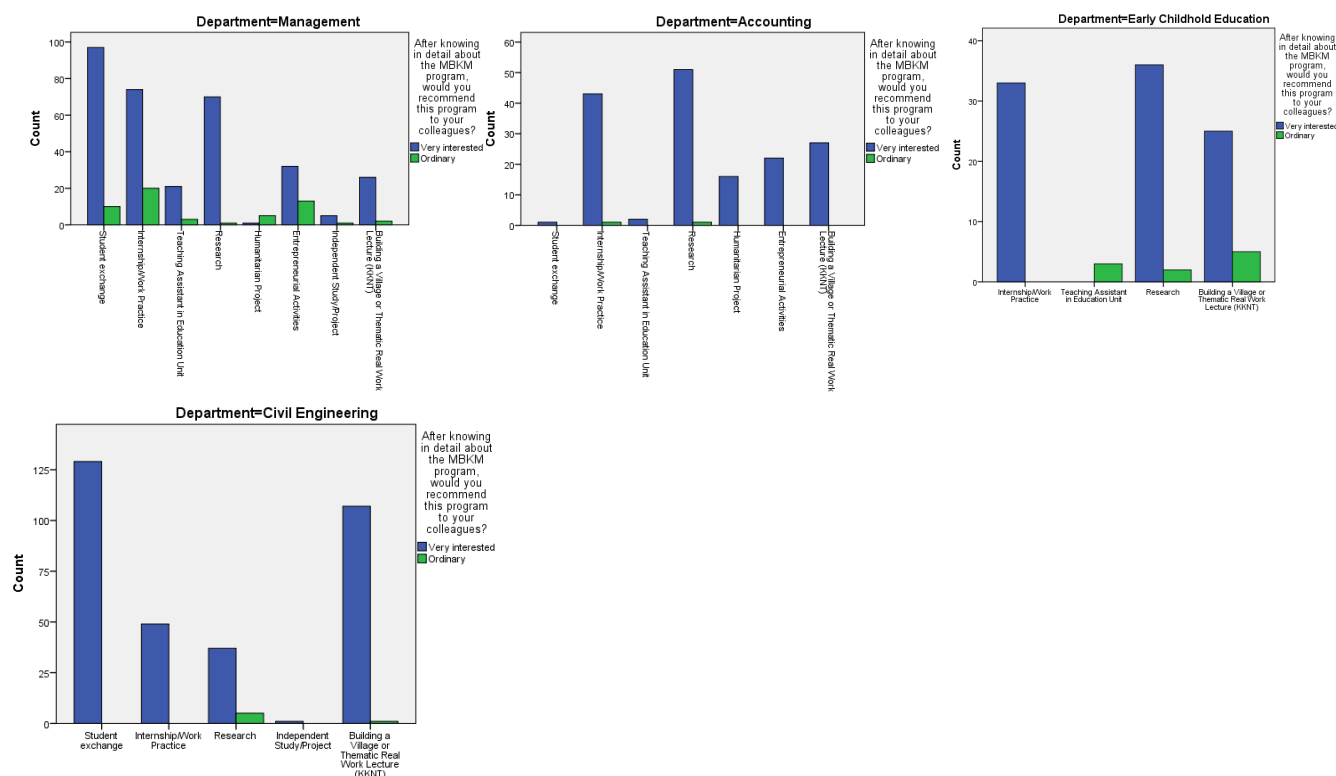


Figure 5. Student support to share MBKM program especially MBKM KKN Village

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5. Conclusion

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Biographies

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