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Jumlah Penulis : 3 orang

Status Pengusul : Penulis ke 2

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## Environmental performance and agricultural productivity: Assessing the convergence and divergence of demand-driven agricultural extension [\(Article\)](#)

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Widayati, T.<sup>a</sup>, Waridin, W.<sup>b,c</sup>, Mafruhah, I.<sup>d,e</sup> ✉️ 👤

<sup>a</sup>Faculty of Economics, Universitas 17 Agustus 1945 Semarang, Semarang, Indonesia

<sup>b</sup>Faculty of Economics and Business, Diponegoro University, Semarang, 50275, Indonesia

<sup>c</sup>Jalan Erlangga Tengah 17, Semarang, 50241, Indonesia

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### Abstract

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This study aims to analyze and evaluate the implementation of agricultural extension on bridging the critical point between environmental performance and agricultural productivity based on community needs and the role of agricultural extension in increasing productivity, reducing the number of poor and environmental degradation. This research uses sequential mixed method with stakeholder analysis and descriptive statistics. This research was conducted on 31 samples of farmer groups in Kejajar Subdistrict, in Dieng plateau area, Central Java Province. The results showed that the level of effectiveness of farmer group participation was classified as medium. The role of stakeholders and academics is still low, but the role of agricultural extension officers is relatively high because they are more responsive to the farmers' needs. The implementation of agricultural extension in Dieng area has not fully utilized demand driven basis due to institutional and regulatory factors that have not fully supported the role of agricultural extension officers in the field. In addition, it is also found that the competence of agricultural extension officers is still low so that they have not been able to carry out demand-driven extension function. © 2019, Econjournals. All rights reserved.

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# Analysis of Energy Management and Financial Planning in the Implementation of Photovoltaic Systems

Adalberto Ospino Castro<sup>1</sup>, Carlos Robles-Algarín<sup>2</sup>, Rafael Peña Gallardo<sup>3\*</sup>

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## ABSTRACT

This paper presents the analysis of energy management and financial planning that is carried out in the design and implementation of photovoltaic systems in urban areas of the city of Barranquilla, Colombia. A questionnaire with a Likert scale and 36 items was designed, which was answered by subjects with managerial functions of the 16 companies dedicated to the implementation of photovoltaic (PV) projects in Barranquilla. The instrument was validated by expert judgment with a reliability of 0.84 with Cronbach's Alpha. For the analysis of results, techniques of central tendency and variability were used. The results show that energy management in the implementation of PV projects is moderate, indicating that there is no predominant presence of indicators of improvement and energy performance in these projects. Financial planning has a moderate significance, indicating that the financial analysis methods that are being used in these PV systems projects have a basic analysis.

**Keywords:** Energy Management, Financial Planning, Photovoltaic Energy

**JEL Classifications:** P18, P11, Q20

## 1. INTRODUCTION

An energy management system aims to develop and implement its energy policy, as well as manage activities and services that interact with the use of energy, using guides that standardize what should be done in order to implement, maintain and improve it continuously (Priás and Campos, 2013). Due to the growing importance of energy management systems, since 2005, leading countries in this field such as Denmark, Norway, Spain, the United States and China have established guidelines and standards for energy management, which contributed to the 2011 was approved by the International Organization for Standardization, the ISO 50001-Energy management standard, whose global application contributes to a greater availability of energy supply, improvement of competitiveness and a positive impact on the environment (Shakeri et al., 2017).

Since the creation of this standard, Europe is the main player in the ISO 50001 certifications, where Germany leads the most certifications of this regulation, followed by Spain, Denmark, Sweden, Italy, Romania, France, Ireland, Austria and the United Kingdom (De Sousa et al., 2017). The use of energy efficiency measures and renewable energy sources, has its origin from the initiative of several governments in response to international crises in the oil market. These actions were aimed at the implementation of energy management systems in the organizations aimed at reducing energy consumption and CO<sub>2</sub> emissions (Cabello et al., 2012).

In this context, the high impact that the application of energy management systems can have on the increase in energy efficiency becomes of fundamental importance to ensure electricity supply, reduce costs for electricity consumption and reduce greenhouse gases (Hernández and López, 2017). This is achieved through the



## Oil Price and Slumps Effects on Personal Consumption in Saudi Arabia

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### ABSTRACT

Oil price movements and its macroeconomic effect may have deep effects on the oil exporting economy like Saudi Arabia in terms of personal consumption and welfare derived from the consumption. This present research targets to isolate the relationship between oil price and personal consumption per capita using a period 1970-2016 and applying cointegration technique. We find that all variables are the first different stationary and long and short run relationships are also corroborated. We find the positive relationship between oil price and personal consumption per capita in both long and short runs which suggest that oil price has direct effect on the consumption of the Kingdom in case of any movement. Moreover, we find that the oil price crises have insignificant effects on the personal consumption per capita hence the economy's consumption is supported by non-oil sector in the slump periods. Based on findings, we suggest the diversification policy to the Saudi economy for a smooth consumption pattern in the long run.

**Keywords:** Personal Consumption Per Capita, Oil Price, Oil Price Slumps, Cointegration

**JEL Classifications:** E21, Q21, H12

### 1. INTRODUCTION

A stable consumption pattern is very important for the overall welfare and health of the economy. It is also a major part of aggregate demand which supports the demand for factors of production including investment and employment in any economy. Directly, the consumption is mostly determined by the income at micro or macro level but it is also influenced by the factors which determine the income level in the countries. Oil revenues are the major income source of most of oil exporting countries then Saudi Arabia is not an exception. More than half of the Saudi Arabian income has been sourced from the oil revenues in most of years before oil price crisis of 2014. Albeit, more than 40% of Saudi income is consisted of oil-income even during the slump period. Oil price crisis may directly be affected the income of oil exporting countries as oil revenue/income is directly linked with the oil price. Consequently, the oil price crisis may also affect the personal consumption in the country.

Mehra and Ptersen (2005) initiate the potential relationship between oil price and consumption. They argue that the consumption is delayed in the days of oil price shocks. Further, the other economic activities like investment and other aggregate expenditures are also closely link to the oil price shocks. Moreover, they also argue that oil price may have asymmetrical effects on the consumption expenditures because of real balance adjustments. In the empirical testing of this relationship in US economy, they find that increasing oil price has adverse effect on the real consumption levels due to a fact that US is a net oil-importer but the decreasing oil prices could not affect the consumption level significantly. Odusami (2010) re-investigates the effects of oil prices on the consumption-wealth ratio in the US economy. He finds the oil price as a significant determinant of the consumption-wealth ratio. Therefore, he concludes that oil price shocks are very important in explaining the household consumption behavior. Moreover, he notices that the relationship between consumption-wealth ratio