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Motivation to Adopt Renewable Energy among Generation Y

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Abstract

This study aims to identify the factors that shape the Generation Y to adopt renewable energy. Four independent variables are used i.e. environmental concern, consumer belief, consumer knowledge, and relative advantages of renewable energy. A total of 200 respondents from one of the Malaysian Government-Linked University are used in this current study. Moreover, descriptive, reliability, convergent validity, and discriminant validity using Partial Least Square (PLS) are mainly used to analyse the data. The results indicate that environmental concern and relative advantages of renewable energy have significantly influence the adoption of renewable energy. However, consumer belief and consumer knowledge are insignificant with renewable energy adoption among Generation Y.

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Keywords: Renewable Energy; Environmental Concern; Consumer Belief; Consumer Knowledge: Relative Advantage

1. Introduction

Nowadays, the renewable energy (RE) is becoming an immense business in most of countries in the world. There are two factors have forced this business developed. First, the public awareness of relative advantages provided by RE. Second, the restructuring of the electricity supply industry due to the rules and regulation imposed by the government. In Malaysia, the RE sector is relatively small even though the public and policy interest in the development and use of RE have developed worldwide in recent years (Clare et al., 2012). Most countries have turning the direction to use the RE due to the increasing of carbon emissions. During the Copenhagen Climate Change Summit on December 2009 in Copenhagen, the Prime Minister of Malaysia conditionally agreed to oblige in reducing the carbon emissions to 40% in terms of emissions intensity of gross domestic product (GDP) by the

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year 2020 compared to 2005 and preserve the forest land area. Since then, the Malaysian government has started to introduce Sustainable Energy Development Authority of Malaysia (SEDA Malaysia) in 2011. This statutory body is formed in the conjunction with the implementation of Sustainable Energy Development Authority Act 2011 (Act 726) and RE Act 2011 (Act 725).

Malaysia population is growing at an average of 1.2% every year and this growth has led to the increase of energy consumption at 2.3%. The demand of energy consumption between 2007 and 2012 is increased by 25% in Peninsular Malaysia. Also, in 2012, 36.8% of the energy demand came from transportation segment, 29.8% consumed by industrial sector, and 16% used by non-energy sector i.e. residential and commercial (Energy Commission Malaysia, 2014). Past trends stated that petroleum has generated a major source of energy mostly in the transportation segment. According to Energy Commission Malaysia (2014), the uses of crude oil, petroleum, natural gas, coal, and hydropower to supply the energy across Malaysia have declined between 2007 and 2012. The main reason behind the shortage used of fossil fuel sources is due to the continuous effort by the government to replace sources of energy with RE sources. Moreover, high dependent use of fossil fuels have caused in increasing the global warming. Thus, the alternative energy solution which is RE should be further capitalized and commercialized to the users.

This study aims to identify the factors that motivate the Gen Y in adopting the RE. There are four independent variables used in this study such as environmental concern, consumer belief, consumer knowledge, and relative advantages of RE. This study uses the theory of reasoned action (TRA) as a theoretical framework. The remainder of paper is structured as follows. This study first review the relevant literature. The following section details the method applied. The third part is to discuss the findings and the last part is the conclusion.

2. Literature Reviews

2.1 Malaysia RE

In Malaysia, electricity segment is highly dependent on fossil fuel sources. In 2012, 93.0% of electricity is generated using petroleum and other liquids, natural gas, and coal. Additionally, biomass and waste, and hydroelectricity have supported the remaining of Malaysia's primary energy consumption (U.S. Energy Information Administration, 2014). Table 1 below shows the amount of RE generated under the FiT system, in Megawatt-hours (MWh) from year 2012 to 2015. From table 1, some sources of RE i.e. biogas, biogas (landfill/agriculture waste), and solar photovoltaic (PV) indicates the incremental trend in 2014.

Table 1: Annual Power Generation (MWh) of Commissioned RE Installations

Year	Biogas	Biogas (Landfill / Agriculture Waste)	Biomass	Biomass (Solid Waste)	Small Hydro	Solar PV	Geothermal
2015 As at June	1509.34	2285.71	58775.11	0.00	10420.51	22936.27	0.00
2014	18521.75	27702.90	192983.97	4347.83	64453.49	174040.61	0.00
2013	12217.15	9477.59	209407.59	11144.25	73032.12	48426.00	0.00
2012	98.11	7465.40	101309.87	3234.52	25629.78	4714.01	0.00

Source: www.seda.gov.my

The continuing used of fossil fuels has threatened the energy suppliers with high costs and later will affect the price charge for residential users and other users. Due to that, the policy makers then have to create more initiatives for both RE producers and suppliers as well as the publics. Starting year 2009, Malaysia has set up national Green Technology Policy as to create awareness on mitigating the climate change. The Malaysia commitment towards sustainable energy later continued with the establishment of Green Technology Financing Scheme. Besides, the National RE Policy (2009) and RE Act (2010) also have been introduced to support the green energy vision. Moreover,