



UNIVERSITI PUTRA MALAYSIA

***DEVELOPMENT OF A LOW CARBON LIFESTYLE PREDICTIVE
MODEL IN PUTRAJAYA, MALAYSIA***

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MODEL IN PUTRAJAYA, MALAYSIA**

By

AZALIA BINTI MOHAMED

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfillment of the Requirements for the Degree of
Doctor of Philosophy**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Doctor of Philosophy

DEVELOPMENT OF A LOW CARBON LIFESTYLE PREDICTIVE MODEL IN PUTRAJAYA, MALAYSIA

By

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August 2017

Chairman : Associate Professor Zelina Zaiton Ibrahim, PhD
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This research examined low-carbon lifestyle adoption in the quest to understand why the public have not enthusiastically taken up this new lifestyle. Putrajaya was chosen as the location of the study because it is Malaysia's pioneer low-carbon city, a model city that embraces the concept of sustainable development with a goal of reducing carbon footprint in all aspects of urban living. The population chosen for this study was leaders of residents' association committees (RACs) whom are most knowledgeable about the community and their issues.

The objective of this study was to assess the role of influencing factors of low-carbon lifestyle adoption. In achieving this objective, a two-staged mixed method research strategy was employed. In the first stage of the research, a combination of semi-structured interviews and a focus group discussion were used in an inductive manner to identify the key issues, factors, and relationships that are important in low-carbon lifestyle which were consequently presented in a conceptual framework. The framework provided the researcher with the basis to further probe the identified factors and relationships in the deductive stage of the research, employing a quantitative survey.

The analysis from this study indicated that when asked to adopt everyday practices that mitigate climate change, people are likely to evaluate their decision against a set of criteria based on their perception on low-carbon lifestyle attributes and their own situation. Positive perception particularly the advantage and usefulness is a major influence on individual acceptance of the new lifestyle. Evidence also indicated that individuals' behaviours particularly resource consumption and energy-related behaviours are greatly influenced by the availability of facilities and technical infrastructures, as well as instructions and guidance.

Six predictor variables for predicting low-carbon lifestyle adoption were isolated, i.e., resource and support, later adopter characteristics, complexity, relative advantage, policy and guidelines, and innovator characteristics. These predictor variables were presented in a predictive equation model on low-carbon lifestyle adoption. Overall, this model was able to explain approximately 84% of the variation in low-carbon lifestyle adoption. Perception on resource and support was found to be the most important predictor, accounting for 66.7% of low-carbon lifestyle adoption. Additionally, innovator characteristics and later adopter characteristics were discovered to have moderating effects on certain predictor variables and low-carbon lifestyle adoption.

Taking into consideration individuals' perception on low-carbon lifestyle attributes and their personal characteristics, this study proposes an integrated conceptual model which offers a deeper understanding of the variables that influence the adoption of low-carbon lifestyle hence providing opportunities for directing urban communities towards a sustainable future.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

PEMBANGUNAN MODEL PERAMAL AMALAN GAYA HIDUP KARBON RENDAH DI PUTRAJAYA, MALAYSIA

Oleh

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Pengerusi : Profesor Madya Zelina Zaiton Ibrahim, PhD
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Kajian ini meneliti amalan gaya hidup karbon rendah dalam memahami mengapa gaya hidup karbon rendah kurang mendapat sambutan daripada orang awam. Putrajaya telah dipilih sebagai lokasi kajian memandangkan ia adalah model rintis kepada pembangunan bandar karbon rendah di Malaysia. Pembangunan perbandaran Putrajaya mengamalkan konsep kelestarian dalam pembangunan dan berusaha ke arah matlamat mengurangkan jejak karbon dalam setiap aspek kehidupan bandar. Sampel populasi yang dipilih bagi kajian ini adalah pemimpin Persatuan-Persatuan Penduduk di Putrajaya yang mempunyai pengetahuan luas mengenai komuniti dan permasalahannya.

Objektif utama kajian ini adalah mengkaji peranan faktor-faktor yang mempengaruhi gaya hidup karbon rendah. Dalam mencapai objektif ini, pendekatan yang dipilih adalah dengan menjalankan kajian dalam dua fasa iaitu fasa induktif dan fasa deduktif, serta menggunakan metodologi gabungan. Dalam fasa pertama, temu bual separa berstruktur dan perbincangan kumpulan fokus digunakan secara induktif untuk meneliti isu-isu utama, faktor-faktor dan hubungkait yang penting kepada amalan karbon rendah yang kemudiannya dibentangkan dalam bentuk kerangka konsep. Kerangka konsep ini menyediakan asas bagi penyelidik untuk meneliti faktor-faktor dan hubungkait secara lebih mendalam dalam fasa deduktif dengan menggunakan kajian kuantitatif.

Hasil analisis dari kajian ini menunjukkan bahawa dalam mengamalkan gaya hidup karbon rendah, seseorang individu akan membuat pertimbangan dan membuat keputusan berpandukan satu set kriteria yang didasari oleh persepsi mereka terhadap atribut gaya hidup baru ini serta situasi mereka. Persepsi positif terutamanya dari aspek kelebihan dan kebergunaan adalah pengaruh penting dalam menentukan

penerimaan terhadap gaya hidup karbon rendah ini. Kajian juga menunjukkan bahawa pelakuan-pelakuan individu terutamanya dalam penggunaan sumber dan tenaga adalah amat dipengaruhi oleh ketersediaan fasiliti dan infrastruktur teknikal, serta arahan dan panduan.

Enam pembolehubah peramal telah dikenalpasti dalam kajian ini, iaitu, persepsi terhadap sumber dan sokongan, kerumitan, kelebihan relatif, dasar dan garis panduan, serta ciri-ciri pengamal inovatif dan ciri-ciri pengamal ketinggalan. Dengan menggunakan pembolehubah-pembolehubah peramal ini, satu model peramal yang berupaya meramalkan pengamalan gaya hidup karbon rendah telah dibentuk. Secara keseluruhan, model ini berupaya menjelaskan kira-kira 84% daripada variasi pengamalan gaya hidup karbon rendah. Persepsi terhadap sumber dan sokongan didapati merupakan peramal utama iaitu berupaya menjelaskan 66.7% dalam variasi amalan gaya hidup karbon rendah. Di samping itu juga, kajian turut menunjukkan bahawa ciri-ciri pengamal inovatif dan ciri-ciri pengamal ketinggalan mempunyai kesan penyederhanaan terhadap hubungan antara pembolehubah peramal tertentu dan amalan gaya hidup karbon rendah.

Dengan mengambil kira persepsi individu terhadap atribut-atribut gaya hidup karbon rendah dan ciri-ciri peribadi individu itu sendiri, kajian ini mengesyorkan satu model konsep bagi memahami dengan lebih jelas pembolehubah-pembolehubah yang mempengaruhi pengamalan gaya hidup karbon rendah dan memberikan cadangan-cadangan yang bersesuaian untuk membimbing masyarakat bandar ke arah gaya hidup dan masa depan yang lebih lestari.

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I certify that a Thesis Examination Committee has met on 1 August 2017 to conduct the final examination of Azalia binti Mohamed on her thesis entitled "Development of a Low Carbon Lifestyle Predictive Model in Putrajaya, Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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LIST OF ABBREVIATIONS

| | |
|-----------|----------------------------------------------------------------------|
| BaU | Business as usual |
| CM | Counter measures |
| DEFRA | Department of Environment of Food and Rural Affairs (United Kingdom) |
| EPU | Economic Planning Unit |
| GHG | Greenhouse gas |
| IPCC | Intergovernmental Panel on Climate Change |
| JPSPN | National Solid Waste Management Department |
| KeTTHA | Ministry of Energy, Green Technology and Water |
| KPKT | Ministry of Urban Wellbeing, Housing and Local Government |
| LED | Light-emitting diode |
| M | Mean |
| MOE | Ministry of Education |
| NGOs | Non-government Organizations |
| NRE | Ministry of Natural Resource and Environment |
| OECD | Organization for Economic Co-operation and Development |
| PhD | Doctor of Philosophy |
| PjC | Putrajaya Corporation |
| qual/QUAL | Qualitative |
| QUAN | Quantitative |
| RAC | Residents' Association Committee |
| SD | Standard deviation |
| SPM | Malaysian Certificate of Education |

| | |
|--------|------------------------------------------------------------------|
| SPSS | Statistical Package for Social Sciences |
| SRP | Malaysian Lower Certificate of Education |
| STPM | Malaysian High School Education Certificate |
| UNEP | United Nations Environmental Programmes |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WMO | World Meteorological Organization |



CHAPTER 1

INTRODUCTION

1.1 Background

The environmental problem related to climate change is an important issue of concern. Scientists (e.g. Pittock, 2005; Diffenbaugh & Field, 2013) believe that the unprecedented climate change and increasingly extreme weathers observed in various regions of the world are caused by rapid global warming in the last few decades. Human contributions of heat-trapping greenhouse gases (GHG) are blamed as the dominant cause of the observed warming (Pittock, 2009; Lewis & Karoly, 2013).

The Intergovernmental Panel on Climate Change (IPCC) in its 2013 report states that it is extremely likely [defined as 95-100% certainty] that human influence is the dominant cause of the observed warming since the mid-20th century. According to the IPCC (2013), greenhouse gases in the atmosphere have increased to levels unprecedented in at least the last 800,000 years, reaching a new record high in 2012. The report also states that the period 1990 to 2012 saw a 32% increase in radiative forcing - a measure of the warming effect on the climate - because of increased atmospheric concentrations of GHG.

A carbon footprint is a quantitative measure which describes the effect caused by [individual, event, organization, or product] in terms of total amount of GHG produced (expressed as carbon dioxide equivalent (Wiedmann & Minx, 2008; Carbon Trust, 2009; Alvarez, Carballo-Penela, Mateo-Mantecon, & Rubio, 2016). Greenhouse gases can be emitted through transport, production and consumption of food and goods, energy usage, and land clearance.

Individuals' lifestyle and day-to-day choices are both direct and indirect sources of carbon emission (Haq, Whitelegg, Cinderby, & Owen, 2008; Zacarias-Farah & Geyer-Allely, 2003; Gronco & Warde, 2001; Spangenberg & Lorek, 2002; Tian et al., 2016; Mieke, Scheumann, Jones, Kammen, & Finkbeiner, 2016). There are empirical evidences on the strong associations between various indicators of lifestyle and resource consumption and consequent carbon emissions (e.g., Schipper, Bartlett, Hawk & Vine, 1989; Lutzenhiser & Hackett, 1993; Chapstick, Lorenzoni, Corner, & Whitmarsh, 2014; Allan, Kerr & Will, 2015; Gupta & Dutta, 2015; Liu, Oosterveer, & Spaargaren, 2015; Martinez, Schor, Abrahamse, Alkon, & Axsen, 2015; Mieke et al., 2016; Sommer & Kratena, 2016). Hence, alterations towards an everyday low-carbon lifestyle are the best solution to effectively tackle the issue (Goodall, 2007; Dietz, Gardner, Gilligan, Stern, & Vandenbergh, 2009; Howell, 2013).

1.2 Low-carbon lifestyle

The concept of low-carbon lifestyle generally suggests reducing carbon emission from all aspects of living; in which lifestyle strives to be frugal and recyclable towards zero-wastage. The main focus of low-carbon lifestyle is to reduce individuals' carbon footprints and minimizing the effects of daily lifestyle in causing devastating climate change. Five routine behaviour domains are frequently studied to assess individuals' level of low-carbon lifestyle namely: food consumption, water and energy use, transportation, and waste management (e.g., Barr, Gilg, & Ford, 2001; Barr & Gilg, 2006, Britain's Department for Environment, Food and Rural Affairs -DEFRA, 2008; Whitmarsh & O'Neill, 2010).

In low-carbon lifestyle campaigns, government policies and programs encourage citizens to adopt low-carbon behaviours in all daily aspects which include using energy-efficient appliances, buying environmental-friendly products, eating organic and locally grown food, using the car less, and seeking alternatives for short trips, better energy and water management and usage, waste segregation and recycling, and less wasting of food (DEFRA, 2008). Collectively, these efforts are aimed specifically at reducing household resource consumption and waste generation.

1.3 Nurturing low-carbon lifestyle in Malaysia

Malaysia's rapid transformation from agricultural to an industrialized economy in the last few decades caused an alarming growth of GHG emissions. In 2014, Malaysia was the third largest per capita carbon emitter among the ASEAN countries (Olivier, Janssens-Maenhaut, Muntaen, & Peters, 2015). Malaysia's total carbon emission was recorded at 227,481 Ktons, behind Indonesia and Thailand which recorded 452, 976 and 271, 978 Ktons CO₂ respectively.

Energy generation, transport, industrial, residential and agriculture sectors are the major sectors contributing GHG in the country. Although Malaysia shares only 0.6% of the global carbon emission (Olivier et al., 2015), a more serious concern lies in the increasing trend of the country's emission. The International Energy Agency (2015) reported that Malaysia's carbon emission from fuel combustion alone grew by 321.1% from 1990 to 2013, among the highest growth rate in the world. Without any mitigation measures, Malaysia's total emission is projected to reach 285.73 Ktons in 2020; increasing by approximately 70% compared to the amount emitted in year 2000 (Safaai, Noor, Hashim, Ujang, & Talib, 2010).

In 2009, Malaysia pledged to reduce its carbon dioxide emission to 40% GDP by 2020 as compared to 2005 levels. The Government has introduced the National Green Technology Policy in 2011 to address climate and energy issues in Malaysia and outlines the country's initiatives on sustainable growth and development. In line with this policy, a framework called Low Carbon Cities Framework (LCCF) was established in spearheading the development of sustainable cities and to support

sustainable development in Malaysia. Two pioneer low-carbon scenarios projects were announced, Putrajaya Low-carbon City Initiatives which was implemented at city level, and Sustainable Iskandar Malaysia at regional level.

A low-carbon city is a city that comprises of societies that adopt green practices and green technology thus emitting relatively low carbon as compared to present day practice (LCCF, 2014). Based on the LCCF, the inception of a low-carbon city focuses on low-carbon urban development strategies. This includes implementing actions to reduce carbon emission by increasing efficiency in the usage of resources and green technology and better waste management and preservation of the natural environment.

Apart from emphasizing on the industrial, transport, and agriculture sectors, the government has set to reduce carbon emission in the residential sector. Various policies and programs have been implemented focusing on energy, transportation, waste and water to encourage low-carbon and environmentally-friendly lifestyle. Some of these programs aim to influence household actions directly by encouraging waste recycling and frugal consumption, for example by introducing mandatory waste separation and the weekly 'No Plastic Bag Day'; others indirectly influence purchasing decisions such as by promoting nationalism in the 'Buy Malaysian Products Campaign' and by granting tax exemptions such as for hybrid and electric cars.

Practices and products that are energy efficient are promoted to the public to reduce energy consumption. This is also promoted through a discount of monthly electricity bill to households that consume RM20 or less (TNB, 2016a). Efforts are also made to improve energy efficiency through the implementation of the Minimum Energy Performance Standards (MEPS) for domestic appliances. In 2011, a program called Sustainability Achieved via Energy Efficiency (SAVE) was introduced where households were offered rebates of up to RM200 for purchase of energy efficient appliances (TNB, 2013b). Besides giving subsidy and rebates, the government also impose penalty on over-consumption. The electricity tariff rates were increased on January 2014 by 10.6% for consumption exceeding 300kWh (TNB, 2016c). On top of that, with the implementation of the goods and services tax (GST), beginning April 1st, 2015, a 6.0% tax will be charged for usage of 301 kWh of electricity and above (TNB, 2016c).

Meanwhile, in addressing the significant amount of emissions that is related to the public in the transport sector, the government has initiated major public transport projects to increase public transport ridership in key urban areas. This includes the development of the Mass Rapid Transit (MRT) system and the expansion of Kuala Lumpur Light Rail Transit (LRT) to alleviate the severe traffic congestion in the Kuala Lumpur metropolitan area. Efforts also emphasized on improving bus systems in other capital cities such as Kuantan and Penang. Potential car buyers are encouraged to choose among energy efficient vehicles and use a more

environmental-friendly energy sources such as compressed natural gas (CNG) to reduce air pollution.

Due to increasing population and consumption, the waste sector accounts for the second largest share of emission in Malaysia (BUR, 2015). To address this problem, the Reduce, Reuse, Recycle (3R) program was intensified targeting 22% household recycling rate by 2020. The government has implemented waste separation at source for households in selected states starting September 2015 in line with the enforcement of the Solid Waste and Public Cleansing Management Act 2007 (Act 672).

Despite the various incentives and millions of ringgit spent on campaigns and programs to promote low-carbon lifestyle, their adoption by the general public is still low (Agarmuthu, 1999). An online survey on public awareness of government incentives and policies related to renewable energy and willingness of the public to adopt (Muhammad Sukki et al, 2011) found that even with the numerous publicity drives in the mass media, around 63.1% of respondents remained unaware. Mei et al (2017) conducted a nationwide survey on public environmental awareness and environmental behaviour, covering all 13 states including the Federal Territories of Kuala Lumpur, Putrajaya and Labuan. Their results indicated a distinctly large gap between public environmental awareness and environmental behaviour; public awareness was found to be relatively high at 4.22 (based on a scale of 1 to 5 with 5 being the highest) while public environmental behavior, specifically climate change prevention actions was only moderate at 3.65.

Meanwhile, Malaysians have continued with their wasteful lifestyle. It was reported that every year, the amount of solid waste generated by Malaysians increases by at least 3% (Akil, Johar, & Ho, 2015). In 2012, waste was generated at an alarming average of 25,000 tonnes per day (Akil et al., 2015). According to the Ministry of Urban Wellbeing, Housing and Local Government (KPKT), recycling rate in 2016 is only 15%, even after more than two decades of aggressive campaign.

Meanwhile, the energy demand from sectors related to the public i.e., residential and commercial, and transport had increased to 31,785ktoe in 2014 compared to 20,139ktoe in 2004, a growth of 57.8% (MEIH, 2015). Reports have shown that residential electricity usage has continued to grow exponentially (Ivy-Yap & Bekhet, 2015).

Nevertheless, it is acknowledged that changing towards a low-carbon lifestyle is not an easy task as it involves an overhaul of the current ways of living. Studies (e.g., Darnton, 2004; DEFRA, 2008; Shove, 2010; Darnton, Verplanken, White, & Whitmarsh, 2011) suggest that the extent to which people adopt pro-environmental behaviours depends upon a mixture of positive motivators and negative barriers.

Numerous studies have attempted to understand the influence of these motivators and barriers on pro-environmental behaviour. However, the findings of these studies are so far inconsistent and conflicting. One of the key limitations of these studies is that they fail to take into account individuals' perceptions, and their personality complex. In understanding the process that leads to actual adoption (Rogers 1995; Rogers & Singhal, 1996) and the likely contribution of influencing factors, studies need to examine these aspects from an individual's perspective. Hence, the role of individual's perception, mental conflict, and personal characteristics must be explored.

1.4 Problem Statement

Malaysia has pledged to reduce its GHG emission to 40% GDP by 2020 as compared to 2005 levels. Despite the various incentives and millions of ringgit spent on campaigns and programs to promote low-carbon lifestyle, there is lukewarm response from the public. This is a critical issue, given the central role of the public in every initiative designed and implemented towards achieving the carbon emission reduction target.

A range of studies have attempted to delineate individual's likelihood to adopt low-carbon lifestyle but the findings of these studies are so far inconsistent and conflicting. For example, findings from many studies (e.g., Hawthorne & Alabaster (1999); Kaufmann, Panni & Orphanidou (2012) indicate that the more the individuals are aware of environmental issues the more likely they are to be involved in pro-environmental behaviour. However, other studies argued that awareness and knowledge about environmental issues do not necessarily lead to pro-environmental behaviour. Studies (e.g., Hungerford & Volk, 1990; Dunlap & Mertig 1995; Blake, 1999; De Oliver, 1999; Dunlap et al., 2000; Ali, Khan, Ahmed, & Shahzad, 2011) reported that people's concern about the environment is not always reflected in their actual behaviour and in many cases, individuals might be aware of the adverse impacts of their behaviour but would still be unwilling or unable to change those behaviours.

Previous models that tried to explain pro-environmental behaviour, such as Kollmus Agyeman's (2002) which assumed that intention always precedes the actual behaviour, and that people act rationally when their situation permits. They focused on people's intention to do the right thing (by society standards) and perhaps failing to recognize that conformance with social standards are likely to be only one of the many considerations being evaluated before the decision to adopt a new lifestyle.

However, it was observed in many studies that intention differs greatly with the actual behaviour; people may still not act in a pro-environmentally responsible manner despite having the intentions and being in a conducive setting. Their findings suggest that actual behaviour may be influenced or decided based on other factors.

A thorough examination is thus required in understanding this situation and to provide suggestions on optimum strategies.

1.5 Research aim and objectives

This study aims to critically assess the role of influencing factors of low-carbon lifestyle.

In order to meet this aim, five objectives are outlined, which are to:

- i. Identify key issues in the adoption of low-carbon lifestyle;
- ii. Establish a framework for low-carbon lifestyle adoption;
- iii. Detect significant predictors of low-carbon lifestyle adoption;
- iv. Examine the moderating effect of adopter characteristics on the relationships between the predictors and low-carbon lifestyle adoption; and
- v. Develop a predictive model for adoption of a low-carbon lifestyle.

1.6 Methodology overview

This study began with a comprehensive review of the existing literature related to low-carbon lifestyle and behaviour change. A conceptual framework was established based on the key findings from the literature, and used to guide the two-staged primary research which employed a sequential mixed methods approach. In the first stage of the research, a combination of semi-structured interviews and a focus group discussion were used in an inductive manner to identify the key issues, factors and relationships that are important in low-carbon lifestyle. Analysis of these data provided the researcher with the basis to further probe the identified factors and relationships in the deductive stage of the research, employing a quantitative survey. The data were analyzed using a series of statistical analyses which include descriptive statistics, correlation statistics, multiple regressions, and moderated multiple regression analyses.

1.7 Scope of the study

This thesis considers individuals' routine low-carbon lifestyle in and around the house. The investigation on influencing factors of low-carbon lifestyle was conducted in the nation's pioneer low-carbon city: the Federal Territory of Putrajaya. The city was chosen because it is a planned city that emphasizes the preservation of environment. The design of the city incorporated innovative ideas and high technology on townscape, transportation planning and community building. The city is supported with modern amenities and infrastructure for low-carbon lifestyle.

The population chosen for the study was leaders of residents' association committees (RACs) in Putrajaya, which is a group of representatives elected by the residential community to lead community-related programs. The RACs were chosen as target population because as the focal point in disseminating the low-carbon city agenda to the community they are highly involved and most knowledgeable about the community and their issues. The empirical research was carried out between 2013 and 2014.

1.8 Significance of the study

By developing a predictive model for low-carbon lifestyle, this study has significant theoretical implications for research, as well as practical implications for policymakers and practitioners in the low-carbon city agenda. Firstly, this study explored and examined multiple behaviours that the community themselves recognize under this new concept as low-carbon lifestyle. Secondly, it sought to draw together and understand how two broad and distinctly different areas i.e. behaviour change research and the works on influencing factors of pro-environmental behaviour may contribute to a better understanding of the adoption process. Existing models on behaviour change almost exclusively assume that decision to change is a rational decision that is driven by the person itself, whereas literature examining influencing factors is more focus on their potential effects and not connecting to the change process that a person goes through in deciding to adopt low-carbon behaviour.

This research contributes to the study on factors that influence individuals' decision to adopt low-carbon lifestyle. Specifically, this research introduced and tested a conceptual model which proposes that the adoption of low-carbon lifestyle critically depends on individuals' evaluation of the new lifestyle based on perceived attributes and contextual settings. Providing an insight to individuals' perspectives, this study would be beneficial for scholars and practitioners working towards reducing carbon footprint.

Furthermore, this study explores the relatively new concept of leadership i.e. distributed leadership in order to understand in a community improvement context. Using this new approach this research was able to identify and probed the specific dimensions in which a distributed approach in leadership is practiced in the low-carbon city framework and further demonstrated an influence outcome based upon these dimensions.

Another important theoretical implication of this study is that it demonstrated and provided empirical evidence that individual characteristics not only have direct influence on the adoption of low-carbon lifestyle but certain characteristics such as individuals' innovativeness particularly their later and innovator characteristics have moderating effects on how other influencing factors influence the adoption of low-carbon lifestyle. This provides a clearer picture of the decision-making and adoption

process. The findings from this study can be a useful tool to guide policy making, and will also provide valuable information in reviewing and strengthening existing programs and policies as well as suggesting optimum strategies for implementation.

1.9 Structure of the thesis

This thesis is organized into five chapters. The first chapter (Introduction) provides an overview of the study including the research problem, the objectives, methodology and the significance of the study. Chapter 2 (Literature Review) primarily focuses on reviewing theoretical and empirical literatures in the fields of low-carbon lifestyle and behaviour change that set the cornerstone for the study. This is critical as it not only “provides information on what has already been learned but illuminates gaps and the importance of the new study” (Polit & Hungler, 1997, p.91).

Chapter 3 (Methodology) provides explanation of methods and procedures used in conducting this study, describing in detail the research design, data collection, population, samplings, and data analyses. The earlier part of the chapter explains methods applied in the inductive stage of the study which includes semi-structured interviews and focus group discussions. The second part of Chapter 3 describes the methods applied in the deductive stage highlighting the instrumentation, pre-testing, population and sample, data collection method, and data analyses. This chapter is important as it provides the foundation for the scientific research and enhances the confidence level in the findings in the aspects of validity and reliability.

In Chapter 4 (Results & Discussion), findings from the study are reported and clearly explained. The first section describes information derived from the qualitative research which provided the fundamentals for the adoption of low-carbon lifestyle framework that was consequently examined quantitatively in the second stage of the study. The descriptive statistics are presented as well as results from correlation, regression, and moderated multiple regressions analyses. The chapter also discusses the findings on adoption of low-carbon lifestyle and predictors from the study which are used to establish a predictor equation model. Chapter 4 is important as it provides the inherent meaning and significance of the data obtained from the empirical studies.

Chapter 5 (Summary, Conclusion, & Recommendations) provides a brief summary of the study, the conclusions drawn from the study, the implications and recommendations, as well as the limitations.

REFERENCES

- Abeliotis, K., Koniari, C., & Sardianou, E. (2010). The profile of the green consumer in Greece. *International Journal of Consumer Studies*, Vol. 34, No. 2: 153-160.
- Abeliotis, K., Costarelli, V., & Anagnostopoulos, K. (2016). The effect of different types of diet on greenhouse gas emissions in Greece. *International Journal of Food System Dynamic*, Vol. 7, No. 1: 36-49.
- Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology*, Vol. 25, No. 3: 273-291.
- Abrahamse, W., & Steg, L. (2013). Social influence approaches to encourage resource conservation: a meta-analysis. *Global Environmental Change*, Vol. 23, No.6: 1773-1785
- Adams, J., & White, M. (2003). Are activity promotion interventions based on the transtheoretical model effective? A critical review. *British Journal of Sports Medicine*, Vol. 37, No. 2: 106-114.
- Adua, L. (2010). To cool a sweltering earth: Does energy efficiency improvement off set the climate impacts of lifestyle? *Energy Policy*, Vol. 38, No. 10: 5719-5732.
- Agarwal, R., & Prasad, J. (1998a). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, Vol. 9, No. 2: 204-215.
- Agarwal, R., Ahuja, M., Carter, P.E., & Gans, M. (1998b). Early and late adopters of IT innovations: Extensions to innovation diffusion theory. *Diffusion Interest Group in Information Technology (DIGIT) Conference*.
- Agarwal, R., & Prasad, J. (1999). Are individual differences germane to the acceptance of new information technologies? *Decision Science*, Vol. 30, No. 2: 361-391.
- Aguinis, H. (1995). Statistical power with moderated multiple regression in management research. *Journal of Management*, Vol. 21, No. 6: 1141-1158.
- Aguinis, H. (2004). *Regression analysis for categorical moderators*. New York: Guilford Press.
- Ahmad, S.N.B., & Juhdi, N. (2010). Organic food: A study on demographic characteristics and factors influencing purchase intentions among consumers in Klang Valley, Malaysia. *International Journal of Business and Management*, Vol. 5, No. 2: 105-118.

- Aiken, G.T. (2016). Prosaic state governance of community low carbon transitions. *Political Geography*, Vol. 55: 20-29.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Processes*, Vol. 50, No. 2: 179-211.
- Akil, A.M., Johar, F., & Ho, C.S. (2015). Household participation in recycling programs: A case study from Malaysia. *Tata Loka*, Vol. 17, No. 2: 64-75.
- Ali, A., Khan, A.A., Ahmed, I., & Shahzad, W. (2011). Determinants of Pakistani consumers' green purchase behavior: Some insights from a developing country. *International Journal of Business and Social Science*, Vol. 2, No. 3: 217-226.
- Ali, H.M., & Yangaiya S.A. (2015). Investigating the influence of distributed leadership on school effectiveness: A mediating role of teachers' commitment. *Journal of Educational and Social Research*, Vol. 5, No.1: 163-174.
- Alkahtani, A.H., Abu-Jarad, I., Sulaiman, M., & Nikbin, D. (2011). The impact of personality and leadership styles on leading change capability of Malaysian managers. *Australian Journal of Business and Management Research*, Vol. 1, No. 2: 70-99.
- Allan, C., Kerr, S., & Will, C. (2015). Are we turning brighter shade of green? The relationship between household characteristics and greenhouse gas emissions from consumption in New Zealand. *Motu Economic and Public Policy Research*. Wellington, New Zealand.
- Allison, P.D. (1977). Testing for interaction in multiple regression. *American Journal of Sociology*: 144-153.
- Alreck, P., & Settle, R. (2004). *Survey research handbook (3rd ed.)*. New York: McGraw-Hill.
- Andersen, M.S., & Sprenger, R.U. (Eds.). (2000). *Market-based instruments for environmental management: Politics and institutions*. Cheltenham, UK: Edward Elgar Publishing.
- Anderson, K.D. (2008). Transformational teacher leadership in rural schools. *The Rural Educator*: 8-17.
- Andersson, D. (2014). *What characterizes persons with high and low GHG emissions? Lifestyles, well-being and values among Swedish households*. Ph.D. Thesis, Chalmers University of Technology, Goteborg, Sweden.

- Armitage, C.J. (2015). Time to retire the theory of planned behaviour? A commentary on Sniehotta, Pesseau and Araujo-Soares. *Health Psychology Review*, Vol. 9, No 2: 151-155.
- Armitage, C.J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, Vol. 40, No. 4: 471-499.
- Aro, R. (2017). Living standards and changing expectations: Investigating domestic necessity and environmental sustainability in an affluent society. *Jyvaskyla Studies in Education, Psychology and Social Research* 581. Jyvaskyla: University of Jyvaskyla.
- Ary, D., Jacobs, L.C., & Razavieh, A. (2002). *Introduction to research in education* (6th ed.). Belmont, CA: Wadsworth, Thomson Learning.
- Austin, J., Hatfield, D.B., Grindle, A.C., & Bailey, J.S. (1993). Increasing recycling in office environments: The effects of specific, informative cues. *Journal of Applied Behavior Analysis*, Vol. 26, No. 2: 247-253.
- Averdung, A., & Wagenfuehrer, D. (2011). Consumers acceptance, adoption and behavioural intentions regarding environmentally sustainable innovations. *Journal of Business Management and Economics*, Vol. 2, No. 3: 98-106.
- Avery, G.S. (2004). *Understanding leadership: Paradigms and cases*. London: Sage.
- Azizi, N.S.M., & Wilkinson, S. (2015). Motivation factors in energy saving behaviour between occupants in green and conventional buildings – Malaysia case study. *International Journal of Environmental Science and Development*, Vol. 6, No. 5: 491-497.
- Bae, W-B., Mun, S-H., & Huh, J-H. (2016). Real-time occupant based plug-in device control using ICT in office buildings. *Energies*, Vol. 9, No. 3: 143.
- Balderjahn, I. (1988). Personality variables and environmental attitudes as predictors of ecologically responsible consumption patterns. *Journal of Business Research*, Vol. 17, No. 1: 51-56.
- Bamberg, S. (2013). Changing environmentally harmful behaviors: A stage model of self-regulated behavioral change. *Journal of Environmental Psychology*, Vol. 34: 151-159.
- Bamberg, S., & Moser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, Vol. 27, No. 1: 14-25.

- Bandura, A. (1986). *Social foundations of thoughts and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W. H. Freeman.
- Banerjee, A.V. (1992). A simple model of herd behaviour. *Quarterly Journal of Economics* Vol. 107, No. 3: 797-817.
- Banister, D. (2008). The sustainable mobility paradigm. *Transport Policy*, Vol. 15: 73-80.
- Banister, D. (2011). Cities, mobility and climate change. *Journal of Transport Geography*, Vol. 19: 1538-1546.
- Barde, J.P., & Smith, S. (1997). Do economic instruments help the environment? *The OECD Observer*, No. 204: 22-26.
- Barlett, J.E., Kotrlik, J.W., & Higgins, C.C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal*, Vol. 19, No. 1: 43-50.
- Barnett, C., Cloke, P., Clarke, N., & Malpass, A. (2011). *Globalizing responsibility: The political rationalities of ethical consumption*. Oxford: Wiley-Blackwell.
- Barr, S. (2003). Strategies for sustainability: citizens and responsible environmental behavior. *Area*, Vol. 35, No. 3: 227-240.
- Barr, S. (2004). Are we all environmentalists now? Rhetoric and reality in environmental action. *Geoforum*, Vol. 35, No. 2: 231-249.
- Barr, S. (2006). Environmental action in the home: Investigating the 'value-action' gap, *Geography*, Vol. 91, No. 1: 43-54.
- Barr, S., & Gilg, A.W. (2006). Sustainable lifestyles: framing environmental action in and around the home', *Geoforum*, Vol. 37, No. 6: 906-920.
- Barr, S., & Gilg, A.W. (2007). A conceptual framework for understanding and analyzing attitudes: Towards environmental behavior. *Swedish Society for Anthropology and Geography*, Vol. 89 B, No. 4: 361-379.
- Barr, S, Gilg, A.W., & Ford, N.J. (2001). A conceptual framework for understanding and analyzing attitudes towards household waste-management. *Environment and Planning A*, Vol. 33, No. 11: 2025-2048.
- Barr, S., Shaw, G., & Coles, T. (2011a). Times for (un)sustainability? Challenges and opportunities for developing behaviour change policy. A case-study of consumers at home and away. *Global Environmental Change*, Vol. 21: 1234-1244.

- Barr, S., Gilg, A.W., & Shaw, G. (2011b). Helping people make better choices: Exploring the behaviour change agenda for environmental sustainability. *Applied Geography*, Vol. 31: 712-720.
- Barribal, K.L., & While, A. (1994). Collecting data using a semi-structured interview: A discussion paper. *Journal of Advanced Nursing*, Vol. 19: 328-335.
- Barry, D. (1991). Managing the bossless team: Lessons in distributed leadership. *Organizational Dynamics*, Vol. 20, No. 1: 31-47.
- Barth, M., Fischer, D., Michelsen, G., Nemnich, C., & Rode, H. (2012). Tackling the knowledge-action gap in sustainable consumption: Insights from a participatory school programme. *Journal of Education for Sustainable Development*, Vol. 6, No. 2: 301-312.
- Baumol, W.J., & Oates, W.E. (1988). *The theory of environmental policy* (2nd Ed.). Cambridge University Press.
- Baumgarten, S.A. (1975). The innovative communicator in the diffusion process. *Journal of Marketing Research*, Vol. 12, No. 1: 12-18.
- Beierle, T.C. (2002). The quality of stakeholder-based decisions. *Risk Analysis*, Vol. 22, No. 4: 739-749.
- Bennett, N., Wise, C., Woods, P.A., & Harvey, J.A. (2003). *Distributed leadership: A review of literature*. UK: National College for School Leadership.
- Berg, B.L. (2001). *Qualitative research methods for the social sciences*. Boston, MA: Allyn & Bacon.
- Berger, I.E. (1997). The demographics of recycling and the structure of environmental behaviour. *Environment and Behavior*, Vol. 29, No. 4: 515-531.
- Berk, R. (1993). Measuring the impact of water conservation campaigns in California. *Biomaterials*, Vol. 24, No. 3: 233-248.
- Bernstad, A. (2014). Household food waste separation behavior and the importance of convenience. *Waste Management*, Vol. 34, No. 7: 1317-1323.
- Berson, Y., Shamair, B., Avolio B.J., & Popper M. (2001). The relationship between vision strength, leadership style and context. *The Leadership Quarterly*, Vol. 12, No. 1: 53-73.
- Berthou, S.K.G. (2013). The everyday challenges of pro-environmental practices. *The Journal of Transdisciplinary Environmental Studies*, Vol. 12, No. 1: 53-68.

- Bertrandias, L., & Goldsmith, R.E. (2006). Some psychological motivations for fashion opinion leadership and fashion opinion seeking. *Journal of Fashion Marketing and Management*, Vol. 10, No. 1: 25-40.
- Berwick, D.M. (2003). Disseminating innovations in health care. *Jama*, Vol. 289, No.15: 1969-1975.
- Bhate, S., & Lawler, K. (1997). Environmentally friendly products: factors that influence their adoption. *Technovation*, Vol. 17, No. 8: 457-465.
- Bikhchandani, S., Hirshleifer, D., & Welch, I. (1992) A theory of fads, fashion, custom, and cultural change as information cascades. *Journal of Political Economy*, Vol. 100, No. 5: 992-1026.
- Blake, J. (1999). Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience. *Local environment*, Vol. 4, No. 3: 257-278.
- Bohmelt, T., Böker, M., & Ward, H. (2016). Democratic inclusiveness, climate policy outputs, and climate policy outcomes. *Democratization*, Vol. 23, No. 7: 1272-1291.
- Boix, C., & Svolik, M.W. (2013). The foundations of limited authoritarian government: Institutions, commitment, and power-sharing in dictatorships. *The Journal of Politics*, Vol.75, No.2: 300-316.
- Bordens, K.S., & Abbott, B.B. (2013). *Research design and methods: A process approach*. Boston, MA: McGraw-Hill.
- Bourque, L.B., & Fielder, E.P. (2003). *How to conduct self-administered and mail surveys*, (2nd Ed.). Thousand Oaks, California: Sage.
- Bowels, S. (2008). Policies designed for self-interested citizens may undermine the moral sentiments: Evidence from economic experiments. *Science*, Vol. 320, No. 20: 1605-1609.
- Brand, C., & Boardman, B. (2008). Taming of the few- the unequal distribution of greenhouse gas emissions from personal travel in UK. *Energy Policy*, Vol. 36, No. 1: 224-238.
- Brand, C., Anable, J., & Tran, M. (2013). Accelerating the transformation to low carbon passenger transport system: The role of car purchase taxes, feebates, road taxes and scrappage incentives in the UK. *Transportation Research Part A: Policy and Practice*, Vol. 49: 132-148.
- Brandon, G., & Lewis, A. (1999). Reducing household energy consumption: A qualitative and quantitative field study. *Journal of Environmental Psychology*, Vol. 19, No.1: 75-85.

- Brennan, R.L. (2001). An essay on the history and future of reliability from the perspective of replications. *Journal of Educational Measurement*, Vol. 38, No. 4: 295-317.
- Brick, C., & Lewis, G.J. (2016) Unearthing the “green” personality: Core traits predict environmentally friendly behaviour. *Environment and Behavior*, Vol. 48, No. 5: 635-658.
- Bridle, C., Riemsma, R.P., Pattenden, J., Sowden, A.J., Mather, L., ..., & Walker, A. (2005). Systematic review of the effectiveness of health behavior interventions based on the transtheoretical model. *Psychology and Health*, Vol. 20, No. 3: 283-301.
- Bryman, A. (2008). Why do researchers integrate/combine/mesh/blend/mix/merge/fuse quantitative and qualitative research. In M.A. Bergman (Ed.) *Advances in mixed methods research: Theories and applications*. London, UK: Sage Publications, 87-100.
- Bulkeley, H., Castan-Broto, V., & Maassen, A. (2010a). Governing urban low carbon transitions. In H. Bulkeley, V. Castán-Broto, M. Hodson, S. Marvin. (Eds.). *Cities and low carbon transition*. London, UK: Routledge.
- Bulkeley, H., Castan-Broto, V., Hodson, M., & Marvin, S. (Eds). (2010b). *Cities and low carbon transitions*. London, UK: Routledge.
- Bulkeley, H., Schroeder, H., Janda, K., Zhao, J., Armstrong, A., Chu, S.Y., & Ghosh, S. (2011). Cities and climate change: the role of institutions, governance and urban planning. In D. Hoornweg, M. Freire, J.L. Marcus, B.T. Perinaz, & B. Yuen (Eds.), *Cities and climate change: Responding to an urgent agenda*, Washington D.C.: World Bank.
- Burch, S. (2010). In pursuit of resilient, low-carbon communities: An examination of barriers to action in three Canadian cities. *Energy Policy*, Vol. 38, No. 12: 7575-7585.
- Burkhardt, M.E., & Brass, D.J. (1990). Changing patterns or patterns of change: the effects of a change in technology on social network structure and power. *Administrative Science Quarterly*, Vol. 35, No. 1: 104-127.
- Burningham K. (1995). Attitudes, accounts and impact assessment. *The Sociological Review*, Vol. 43, No. 1: 100-122.
- Burt, R.S. (1999). The social capital of opinion leaders. *The Annals of the American Academy of Political and Social Science*, Vol. 566, No. 1: 37-54.
- Caird, S., Roy, R., & Herring, H. (2008). Improving the energy performance of UK households: Results from surveys of consumer adoption and use of low-and zero-carbon technologies. *Energy Efficiency*, Vol. 1, No. 2: 149-166.

- Camburn, E., Rowan, B., & Taylor, J.E (2003). Distributed leadership in schools: The case of elementary schools adopting comprehensive school reform models. *Educational Evaluation and Policy Analysis*, Vol. 25, No. 4: 347–373.
- Cameron K.S., & Quinn R.E. (2011). *Diagnosing and changing organizational culture: Based on the competing values framework*, (3rd Ed.). San Francisco, CA: Wiley & Son Inc.
- Corraliza, J.A., & Berenguer, J. (2000). Environmental values, beliefs, and actions: A situational approach. *Environment and Behavior*, Vol. 32, No.6: 832-848.
- Cerutti, A.K., Contu, S., Ardente, F., Donno, D., & Beccaro, G.L. (2016). Carbon footprint in green public procurement: Policy evaluation from a case study in the food sector. *Food Policy*, Vol. 58: 82-93.
- Chan, K.K., & Misra, S. (1990). Characteristics of the opinion leader: A new dimension. *Journal of Advertising*, Vol. 19, No. 3: 53–60.
- Chapstick, S., Lorenzoni, I., Corner, A., & Whitmarsh, L. (2014). Prospects for radical emissions reduction through behavior and lifestyle change. *Carbon Management*, Vol. 5, No. 4: 429-445.
- Chekima, B., Wafa, S.A.W.S.K, Igau, O.A., Chekima, S., & Sondoh Jr, S.L. (2016). Examining green consumerism motivational drivers: does premium price and demographics matter to green purchasing? *Journal of Cleaner Production*, Vol. 112, No. 4: 3436-3450.
- Chen, T.B., & Chai, L.T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management Science and Engineering*, Vol. 4, No. 2: 27-39.
- Chen, K.K. (2014). Assessing the effects of customer innovativeness, environmental value and ecological lifestyles on residential solar power systems install intention. *Energy Policy*, Vol. 67: 951-961.
- Chess, C., & Johnson, B.B. (2007). Information is not enough. In S.C. Moser, & L. Dilling (Eds), *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge, UK: Cambridge University Press.
- Childers, T.L. (1986). Assessment of the psychometric properties of an opinion leadership scale. *Journal of Marketing Research*, Vol. 23, No. 2: 184-188.
- Chinnici, G., D'Amico, M., & Pecorino, B. (2002). A multivariate statistical analysis on the consumers of organic products. *British Food Journal*, Vol. 104, No 3/4/5: 187-199.

- Clarke, J., & Brown, R. (2006). Understanding the factors that influence domestic water consumption within Melbourne. *Australian Journal of Water Resources*, Vol. 10, No. 3: 261-268.
- Clarke, A., Grant, N., & Thornton, J. (2009). *Quantifying the energy and carbon effects of water saving*. London, UK: Elemental Solutions: 1-21.
- Clements, C., & Washbush, J.B. (1999). The two faces of leadership: Considering the dark side of leader-follower dynamics. *Journal of Workplace Learning*, Vol. 11, No. 5: 170-176.
- Coakes, S.J., & Steed, L.G. (2000). *SPSS for Windows: Analysis without anguish (Version 10.0 for Windows)*. New York: John Wiley.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New Jersey: Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, Vol. 112, No. 1: 155-159.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioural sciences (2nd Ed.)*. New York: Wiley.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education (5th Ed.)*. London: Routledge.
- Cohen, L., Manion, L., & Morrison, K. (2013). *Research methods in education*. Oxford, UK: Routledge Publishers.
- Conger J.A. (1999). Charismatic & transformational leadership in organizations: An insider's perspective on these developing streams of research. *The Leadership Quarterly*, Vol. 10, No. 2: 45-169.
- Cooke, R., Dahdah, M., Norman, P., & French, D.P. (2016). How well does the theory of planned behaviour predict alcohol consumption? A systematic review and meta-analysis. *Health Psychology Review*, Vol. 10, No. 2: 148-167.
- Cooper, T. (2000). Product development implications of sustainable consumption. *The Design Journal*, Vol. 3, No. 2: 46-57.
- Copland, M.A., (2003). Leadership of enquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis*, Vol. 25, No. 4: 375-395.
- Costarelli, S. & Colloca, P. (2004). The effects of attitudinal ambivalence on pro-environmental behaviour intentions. *Journal of Environmental Psychology*, Vol. 24, No. 3: 279-288.

- Cottrell, S.P. (2003). Influence of socio-demographics and environmental attitudes on general responsible environmental behaviour among recreational boaters. *Environment and Behaviour*, Vol. 35, No. 3: 347-375.
- Cox, J., Giorgi, S., Sharp, V., Strange, K., Wilson, D.C., & Blakey, N. (2010). Household waste prevention: A review of evidence. *Waste Management & Research*, Vol. 28, No. 3: 193-219.
- Cramer, J.C., Hacketts, B., Craig, P.P., Vine, E., Levine, M., ..., & Kowalczyk, D. (1984). Structural-behavioral determinants of residential energy use: Summer electricity use in Davis. *Energy*, Vol. 9, No. 3: 207-216.
- Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, California: Sage Publications.
- Crum, K.S., & Sherman, W.H. (2008). Facilitating high achievement: High school principals' reflections on their successful leadership practices. *Journal of Educational Administration*, Vol. 46, No. 5: 562-580.
- Daft, R.L. (1982). Bureaucratic versus non-bureaucratic structure, and the process of innovation and change. In S.B. Bacharach. (Ed.). *Research in the Sociology of Organizations*. (Vol. 1). Greenwich, CT, USA: JAI Press.
- Dalrymple, K.E., Shaw, B.R., & Brossard, D. (2013). Following the leader: Using opinion leaders in environmental strategic communication. *Society & Natural Resources*, Vol. 26, No 12.: 1438-1453.
- Damanpour, F., & Gopalakrishnan, S. (1998). Theories of organizational structure and innovation adoption: The role of environmental change. *Journal of Engineering and Technology Management*, Vol. 15, No. 1: 1-24.
- Damanpour, F., & Evan, W.M. (1984). Organizational innovation and performance: the problem of organizational lag. *Administrative Science Quarterly*, Vol 29, No. 3: 392-409.
- Darnton, A. (2004). Driving public behaviours for sustainable lifestyle. Reports and summary to the Department for Environment, Food and Rural Affairs (DEFRA). London. <http://www.sustainable-development.gov.uk/taking-it-on/pdf/desk-research2.pdf>.
- Darnton, A., Verplanken, B., White, P., & Whitmarsh, L. (2011). Habits, routines and sustainable lifestyles: A summary report to the Department for Environment, Food and Rural Affairs (DEFRA). London.
- [http://www.scpknowledge.eu/sites/default/files/knowledge/attachments/HabitsRoutineSustainableLifestyleEVO502FinalSummaryReportNov2011\(2\).pdf](http://www.scpknowledge.eu/sites/default/files/knowledge/attachments/HabitsRoutineSustainableLifestyleEVO502FinalSummaryReportNov2011(2).pdf).

- Davidson, S. (2011). Upscaling social behaviour change programmes: The case of EcoTeams. In L. Whitmarsh, S. O'Neill, I. Lorenzoni. (Eds.). *Engaging the public with climate change* (Chapter 10). UK: Earthscan.
- Davies, J., Foxall, G.R., & Pallister, J. (2002). Beyond the intention-behaviour mythology: An integrated model of recycling. *Marketing Theory*, Vol. 2, No. 1: 29-113.
- Davis, F.D., 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, Vol. 13, No. 3: 319-340.
- Davis, S.J., Caldeira, K., & Clark, W.C. (2010). Consumption-based accounting of CO₂ emissions. *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 107, No. 12: 5687-5692.
- Day, C., Sammons, P., Hopkins, D., Harris, A., Leithwood, K. et al. (2009). The Impact of leadership on pupil outcomes: Final report to Department of Children, Families & Schools (DCFS), National College of School Leadership, Nottingham.
- Dearing, J.W., & Singhal, A. (2006). *Communication of innovations: A journey with Ev Rogers*. Thousand Oaks: Sage.
- DEFRA (2005). Securing the future: The UK government sustainable development strategy. Department for Environment, Food and Rural Affairs, London.
- DEFRA (2006). Climate change: The UK Programme 2006, Department for Environment, Food and Rural Affairs, London.
- DEFRA (2008) A framework for pro-environmental behaviours. London: Department for Environment, Food and Rural Affairs, London.
- Delmas, M.A., Fischlein, M., & Asensio, O.I. (2013). Information strategies and energy conservation behavior: A meta-analysis of experimental studies from 1975 to 2012. *Energy Policy*, Vol. 61: 729-739.
- Deikmann, A., & Preisendorfer, P. (2003). Green and greenback: The behavioral effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, Vol. 15, No. 4: 441-472.
- De Oliver, M. (1999). Attitudes and inaction: A case study of the manifest demographics of urban water conservation. *Environment and Behavior*, Vol. 31, No.3: 372-394.
- Department for Environment, Food and Rural Affairs (2008). A framework for pro-environmental behaviours. London, UK. Available online: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69277/pb13574-behaviours-report-080110.pdf.

- Dettmann, R.L., & Dimitri, C. (2007). Who's buying organic vegetables? Demographic characteristics of US consumers. *Journal of Food Distribution Research*, Vol. 16, No. 1: 49-62.
- De Young, R. (1986). Some psychological aspects of recycling: the structure of conservation satisfactions. *Environment and Behaviour*, Vol. 18, No. 4: 435-449.
- De Young, R. (1996). Some psychological aspects of a reduced consumption lifestyle: The role of intrinsic satisfaction and competence. *Environment and Behavior*, Vol. 28, No. 3: 358-409.
- De Young, R. (2000). New ways to promote pro-environmental behaviour: Expanding and evaluating motives for environmentally responsible behavior. *Journal of Social Issues*, Vol. 56, No. 3: 509-526.
- De Vries, H., Bekkers, V., & Tummers, L. (2016). Innovations in the public sector: A systematic review and future research agenda. *Public Administration*, Vol. 94, No. 1:146-166.
- Dickinson, J.E., & Dickinson, J.A. (2006) Local transport and social representations: Challenging the assumptions for sustainable tourism. *Journal of Sustainable Tourism*, Vol. 14, No. 2:192-208.
- Dietz, T., Gardner, G.T., Gilligan, J., Stern, P.C., & Vandenberg, M.P. (2009). Household actions can provide a behavioral wedge to rapidly reduce US carbon emissions. *Proceedings of National Academy of Sciences*, Vol. 106, No. 44: 18452-18456.
- Diffenbaugh, N.S., & Field, C.B. (2013). Changes in ecologically critical terrestrial climate conditions. *Science*, Vol. 341, No. 6145: 486-492.
- Dolnicar, S., & Grun, B. (2009). Environmentally friendly behavior - can heterogeneity among individuals and contexts/ environments be harvested for improved sustainable management? *Environment and Behavior*, Vol. 41, No. 5: 693-714.
- Dolnicar, S., & Hurlimann, A. (2010). Australians' water conservation behaviours and attitudes. *Australian Journal of Water Resources*, Vol. 14, No. 1: 43-53.
- Donner, A. (1992). Sample size requirements for stratified cluster randomization designs. *Statistics in medicine*, Vol. 11, No. 6: 743-750.
- Dunlap, R.E., Gallup Jr, G.H., & Gallup, A.M. (1993). Of global concern: Results of the health of the planet survey. *Environment: Science and Policy for Sustainable Development*, Vol. 35, No. 9: 7-39.
- Dunlap, R.E., & Mertig, A.G. (1995). Global concern for the environment: Is affluence a prerequisite? *Journal of Social Issues*, Vol. 51, No. 4:121-137.

- Dunlap, R.E., Van Liere, K.D., Mertig, A.G., & Jones, R.E. (2000). New trends in measuring environmental attitude: Measuring endorsement of the New Ecological Paradigm: A revised NEP scale. *Journal of Social Issues*, Vol. 56, No. 3: 425-442.
- Economic Planning Unit (2015). The Eleventh Malaysia Plan: Chapter 6: Pursuing green growth for sustainability and resilience.
- Edgerton, E., McKechnie, J., & Dunleavy, K. (2009). Behavioural determinants of household participation in a home composting scheme. *Environment and Behaviour*, Vol. 41, No. 2: 151-169.
- Eilam O, & Suleiman R (2004) Cooperative, pure, and selfish trusting: Their distinctive effects on the reaction of trust recipients. *European Journal of Social Psychology*, Vol. 34, No. 6: 729-738.
- Ellen, P.S., Wiener, J.L., & Cobb-Walgren, C. (1991). The role of perceived consumer effectiveness in motivating environmentally conscious behaviors. *Journal of Public Policy & Marketing*, Vol. 10, No. 2: 102-117.
- Ellingsgaard, H.V. (2013). Adding to complexity: How a revived use of psychological theory can benefit attempts to stimulate change in patterns of personal travel. Proceedings from the Annual Transport Conference. Roskilde University, Denmark.
- Elmore, R.F. (2000). *Building a new structure for school leadership*. Washington: Albert Shanker Institute.
- Ertz, M., Karakas, F., & Sarigollu, E. (2016). Exploring pro-environmental behaviors of consumers: An analysis of contextual factors, attitude, and behaviors. *Journal of Business Research*, Vol. 69, No.10: 3971-3980.
- Evans, M.G. (1985). A Monte Carlo study of the effects of correlated method variance in moderated multiple regression analysis. *Organizational Behavior and Human Decision Processes*, Vol. 36, No. 3: 305-323.
- Evans, D., & Abrahamse, W. (2009). Beyond rhetoric: The possibilities of and for 'sustainable lifestyles'. *Environmental Politics*, Vol. 18, No. 4: 486-502.
- Eyre, N., Flanagan, B., & Double, K. (2011). Engaging people in saving energy on a large scale: Lessons from the programmes of the Energy Saving Trust in the UK, In L. Whitmarsh, S. O'Neill, & I. Lorenzoni. (Eds.), *Engaging the public with climate change: Behaviour change and communication*. UK: Earthscan.
- Eze, U.C., & Yew, S.P. (2016). Investigating the moderating roles of age and ethnicity in mobile commerce. In J. Prescott. (Ed.) *Handbook of Research on Race, Gender, and the Fight for Equality*. (p. 90-112). Hershey, USA: IGI Global.

- Feick, L.F., & Price, L.L. (1987). The market maven: A diffuser of market information. *Journal of Marketing*, Vol. 51, No. 1: 83-97.
- Feinberg, M.E., Greenberg, M.T., Osgood, D.W., Anderson, A., & Babinski, L. (2002). The effects of training community leaders in prevention science: Communities that care in Pennsylvania. *Evaluation and Program Planning*, Vol. 25: 245-259.
- Felonneau, M.L., & Becker, M. (2008). Pro-environmental attitudes and behaviour: Revealing perceived social desirability. *Revue internationale de psychologie sociale*, Vol. 21, No. 4: 25-53.
- Feola, G., & Nunes, R. (2014). Success and failure of grassroots innovations for addressing climate change: The case of transition movement. *Global Environmental Change*, Vol. 24: 232-250.
- Field, A. (2005). *Discovering statistics using SPSS*. London: Sage.
- Fielding, K.S., van Kasteren, Y., Louis, W., McKenna, B., Russell, S., & Spinks, A. (2016). Using individual householder survey responses to predict household environmental outcomes: The cases of recycling and water conservation. *Resources, Conservation and Recycling*, Vol. 106: 90-97.
- Fietkau, H.J., & Kessel, H. (1981). *Umweltlernep: Veraenderungsmoeglichkeiten des umweltbewasst-seins, modell-erfahrungen* [Environmental learning opportunities for change of environmental awareness. Models and experiences].
- Finger, M. (1994). From knowledge to action? Exploring the relationships between environmental experiences, learning, and behaviour. *Journal of Social Issues*, Vol. 50, No. 3: 141-160.
- Finn, M., Walton, M., & Elliot-White, M. (2000). *Tourism and leisure research methods: Data collection, analysis, and interpretation*. New York, USA: Longman Publishing Group.
- Fischer, C. (2008). Feedback on household electricity consumption: A tool for saving energy? *Energy Efficiency*, Vol. 1, No. 1:79-104.
- Fitzgerald, L., Ferlie, E., McGivern, G., & Buchanan, D. (2013). Distributed leadership patterns and service improvement: Evidence and argument from English healthcare. *The Leadership Quarterly*, Vol. 24, No. 1: 227-239.
- Flynn, L.R., Goldsmith, R.E., & Eastman, J.K. (1996). Opinion leaders and opinion seekers: Two new measurement scales. *Journal of the Academy of Marketing Science*, Vol. 24, No. 2: 137-147.
- Fraenkel, J.R., & Wallen, N.E. (2000). *How to design and evaluate research in education (4th ed.)*. New York: McGraw-Hill.

- Frambach, R.T., & Schillewaert, N. (2002). Organizational innovation adoption: A multi-level framework of determinants and opportunities for future research. *Journal of Business Research*, Vol. 55, No. 2: 163-176.
- Frambach, R.T., Agarwal, M.K., & Nijssen E.J. (2002). Beyond the adoption/non-adoption dichotomy: The impact of innovation characteristics on potential adopters' transition through adoption process stages. *Research Memorandum*.
- Frederiks, E.R., Stenner, K., & Hobman, E.V. (2015). Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour. *Renewable and Sustainable Energy Reviews*, Vol 41: 1385-1394.
- Froehlich, J., Findlater, L., & Landay, J. (2010). The design of eco-feedback technology. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1999-2008). ACM.
- Frost, J. (2017). *How to interpret the constant (y intercept) in regression analysis*. <http://statisticsbyjim.com/regression/interpret-constant-y-intercept-regression/>
- Fujii, S. (2006). Environmental concern, attitude toward frugality, and ease of behaviour as determinants of pro-environmental behaviour intentions. *Journal of Environmental Psychology*, Vol. 26, No. 4: 262–268.
- Fullerton, D., & Kinnaman, T.C. (2002). *The economics of household garbage and recycling behavior*. Cheltenham, UK: Edward Elgar Publishing.
- Furtner, M.R., Baldegger, U., & Rauthmann, J.F. (2013). Leading yourself and leading others: Linking self-leadership to transformational, transactional, and laissez-faire leadership. *European Journal of Work and Organizational Psychology*, Vol. 22, No.4: 436-449.
- Gall, M.D, Borg, W.R., & Gall, J.P. (1996). *Educational research: An introduction (6th Ed.)*. White Plains, NY: Longman Publishing.
- Gao, Y.L., Mattila, A.S., & Lee, S. (2016). A meta-analysis of behavioral intentions for environment-friendly initiatives in hospitality research. *International Journal of Hospitality Management*, Vol. 54: 107-115.
- Gardner, H.J., & Martin, M.A. (2007). Analyzing ordinal scales in studies of virtual environments: Likert or lump it! *Presence: Teleoperators and Virtual Environments*, Vol. 16, No. 4: 439-446.
- Garling, T., Fujii, S., Garling, A., & Jakobsson, C. (2003). Moderating effects of social value orientation on determinants of proenvironmental behavior intention. *Journal of Environmental Psychology*, Vol. 23, No. 1: 1-9.

- Gastil, J. (1994). A definition and illustration of democratic leadership. *Human Relations*, Vol. 47, No. 8: 953-975.
- Gatersleben, B., Steg, L., & Vlek, C. (2002). Measurements and determinants of environmentally significant consumer behaviour. *Environment and Behavior*, Vol. 34, No. 3: 335-362.
- Gatignon, H., & Robertson, T.S. (1985). A propositional inventory for new diffusion research. *Journal of Consumer Research*, Vol. 11, No. 4: 849-867.
- Gay, L.R., & Airasian, P. (2000). *Educational research: Competencies for analysis and application (6th ed.)*. Englewood, New Jersey: Prentice-Hall.
- Geelen, D., Reinders, A., & Keyson, D. (2013). Empowering the end-user in smart grids: Recommendations for the design of products and services. *Energy Policy*, Vol. 61: 151-161.
- Geller, E.S. (1989). Applied behavior analysis and social marketing: An integration to preserve the environment. *Journal of Social Issues*, Vol. 45, No. 1: 17-36.
- Geller, E.S. (2002). The challenge of increasing pro-environmental behaviour. In R.B. Bechtel, & A. Churchman (Eds.), *Handbook of environmental psychology*. New York: John Wiley.
- Gilg, A., Barr, S., & Ford, N. (2005). Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures*, Vol. 37, No/ 6: 481-504.
- Gilley, B. (2012). Authoritarian environmentalism and China's response to climate change. *Environmental Politics*, Vol.21, No.2: 287-307.
- Gillissen, M., & Opschoor, H. (1994). Energy conservation and investment behaviour: An empirical analysis of influential factors and attitudes. *Research Memorandum*, Vol. 31: 1-26.
- Glor, E.D., & Ewart, G.A. (2016). What happens to innovations and their organizations? Piloting an approach. *The Innovation Journal: The Public Sector Innovation Journal*, Vol. 21, No. 3: 1-25.
- Goldenberg, J., Han, S., Lehmann, D.R., & Hong, J.W. (2009). The role of hubs in the adoption process. *Journal of Marketing*, Vol. 73, No. 2: 1-13.
- Goldsmith, E.B., & Goldsmith, R.E. (2011). Social influence and sustainability in households. *International Journal of Consumer Studies*, Vol. 35, No. 2: 117-121.
- Gonzalez-Torre, P.L., Adenso-Diaz, B., & Ruis-Torres, A. (2003). Some comparative factors regarding recycling collection systems in regions of the USA and Europe. *Journal of Environmental Management*, Vol. 62, No. 2: 129-138.

- Gonzalez-Torre, P.L., & Adenso-Diaz, B. (2005). Influence of distance on the motivation of frequency of household recycling. *Waste Management*, Vol. 25, No. 1: 15-23.
- Goodall, C. (2007). *How to live a low-carbon life*. London, UK: Earthscan.
- Gordon, R.L. (1975). *Interviewing: Strategy, techniques and tactics*. Illinois, USA: Dorsey Press.
- Graetz, F. (2000). Strategic change leadership. *Management Decision*, Vol. 38, No. 8: 550-562.
- Grant, C., & Singh H. (2009). Passing the buck: This is not teacher leadership. *Perspective in Education*, Vol. 27, No. 3: 289-301.
- Granzin, K.L., & Olsen, J.E. (1991). Characterizing participants in activities protecting the environment: a focus on donating, recycling, and conservation behaviors. *Journal of Public Policy & Marketing*, Vol. 10, No. 2: 1-27.
- Green, R.E., Cornell, S.J., Scharlemann, J.P.W., & Balmford, A. (2005). Farming and the fate of wild nature. *Science*, Vol. 307, No. 5709: 550-555.
- Gregory, G.D., & Leo, M.D. (2003). Repeated behavior and environmental psychology: The role of personal involvement and habit formation in explaining water consumption. *Journal of Applied Social Psychology*, Vol. 33, No. 6: 1261-1296.
- Gronn, P. (1999). Substituting for leadership: The neglected role of the leadership couple. *The Leadership Quarterly*, Vol. 10, No. 1: 41-62.
- Gronn, P. (2000). Distributed properties: a new architecture for leadership. *Educational Management and Administration*, Vol. 28, No. 3: 317-338.
- Gronn, P. (2002). Distributed leadership as a unit of analysis. *The Leadership Quarterly*, Vol. 13, No. 4: 423-451.
- Gronn, P., & Hamilton A. (2004). A bit more life in the leadership: Co-principalship as distributed leadership practice. *Leadership and Policy in Schools*, Vol. 3, No. 1:3-35.
- Gronn, P. (2008). The future of distributed leadership. *Journal of Educational Administration*, Vol. 46, No. 2: 141-158.
- Guagnano, G.A., Stern, P.C., & Dietz, T. (1995). Influences on attitude-behavior relationships: A natural experiment with curbside recycling. *Environment and Behavior*, Vol. 27, No. 5: 699-718.
- Guba, E.G. (1990). The alternative paradigm dialog. In E.G. Guba (Ed.), *The paradigm dialog*. Newbury Park, CA: Sage Publications.

- Guilford, J.P. (1956). *Fundamental statistics in psychology and education*. New York, USA: McGraw Hill.
- Gulmez, M., Karaca, S., & Kitapci, O. (2010). The effects of outdoor advertisements on consumers: A case study. *Studies in Business and Economics*, Vol. 5, No. 2: 1-19.
- Gunter, H. M. (2005). *Leading teachers*. London, UK: Continuum.
- Gupta, P., Dutta, M. (2015). Trends in per capita household expenditure and its implications on carbon emissions in developed versus developing countries. *International Journal of Management and Social Sciences*, Vol. 4, No. 2:81-92.
- Guy, S. (2006). Designing urban knowledge: Competing perspectives on energy and buildings. *Environment and Planning C: Government and Policy*, Vol. 24, No. 5: 645-659.
- Guy, S., & Shove, E., (2000). *A sociology of energy, buildings and the environment: Constructing knowledge, designing practice*. London: Routledge.
- Hackett, M.J., & Gray, N.F. (2009). Carbon dioxide emission savings potential of household water use reduction in the UK. *Journal of Sustainable Development*, Vol. 2, No. 1: 36-43.
- Hairudin, M.A., & Yangaiya S.A. (2015). Investigating the influence of distributed leadership on school effectiveness: A mediating role of teachers' commitment. *Journal of Educational and Social Research*, Vol. 5, No.1: 163-174.
- Hallinger, P., & Heck, R.H. (2009). Distributed leadership in schools: Does system policy make a difference? In A. Harris (Ed.), *Distributed Leadership*, Studies in Educational Leadership Vol 7: 101-117.
- Hamamoto, M. (2013). Energy-saving behaviour and marginal abatement cost for household CO₂ emissions. *Energy Policy*, Vol. 63: 809-813.
- Haq, G., Whitelegg, J., Cinderby, S., & Owen, A. (2008). The use of personalised social marketing to foster voluntary behavioural change for sustainable travel and lifestyles. *Local Environment: The International Journal of Justice and Sustainability*, Vol. 13, No. 7: 549-569.
- Hargreaves, A. (1994). *Changing teachers, changing times teachers' work and culture in the Postmodern Age*. London: Cassell.
- Hargreaves, A. (2007). Sustainable leadership and development in education: Creating the future, conserving the past. *European Journal of Education*, Vol. 42, No. 2: 223-233.

- Hargreaves, A., & Fink, D. (2008). Distributed leadership: democracy or delivery? *Journal of Educational Administration*, Vol. 46, No. 2: 229-240.
- Hargreaves, T. (2011). Practising behaviour change: Applying social practice theory to pro-environmental behaviour change. *Journal of Consumer Culture*, Vol. 11, No. 1: 79-99.
- Harland, P., Staats, H., & Wilke, H.A.M. (1999). Explaining proenvironmental intention and behavior by personal norms and the theory of planned behaviour. *Journal of Applied Social Psychology*, Vol. 29, No. 12: 2505-2528.
- Haron, S.A., Paim, L., & Yahaya, N. (2005). Towards sustainable consumption: an examination of environmental knowledge among Malaysians. *International Journal of Consumer Studies*, Vol. 29, No. 5: 426-436.
- Harper, G.C., & Makatouni, A. (2002). Consumer perception of organic food production and farm animal welfare. *British Food Journal*, Vol. 104, No. 3/4/5: 287-299.
- Harris, A. (2004). Distributed leadership and school improvement leading or misleading? *Educational Management Administration & Leadership*, Vol. 32, No.1: 11-24.
- Harris, A., & Muijs, D. (2005). *Improving schools through teacher leadership*. London: Open University Press.
- Harris, A. (2005a). Leading or misleading? Distributed leadership and school improvement. *Journal of Curriculum Studies*, Vol. 37, No. 3: 255-265.
- Harris, A. (2008a). *Distributed school leadership: Developing tomorrow's leaders*. London, UK: Routledge.
- Harris, A. (2008b). Distributed leadership: According to the evidence. *Journal of Educational Administration*, Vol. 46, No. 2: 172-188.
- Harris, A. (2009a) Distributed leadership: What we know? In A. Harris (Ed.), *Distributed Leadership: Studies in Educational Leadership*, Netherlands: Springer.
- Harris, A. (2009b). *Distributed leadership: Different perspectives*. Amsterdam: Springer.
- Harris, A. (2011a). System improvement through collective capacity building. *Journal of Educational Administration*, Vol. 49, No. 6: 624-636.
- Harris, A. (2011b). Distributed leadership: current evidence and future directions. *Journal of Management Development*, Vol. 30, No. 10: 20-32.

- Harris, A. (2012). Distributed leadership: Implication for the role of the principal. *Journal of Management Development*, Vol. 33, No. 1: 7-17.
- Harris, A. (2013a). Distributed leadership: Friend or foe? *Educational Management Administration & Leadership*, Vol. 41, No. 5: 545-554.
- Harris, A. (2013b). *Distributed leadership matters: Perspectives, practicalities, and potential*. Thousand Oaks: Corwin Press.
- Harris, A., & Chapman, C. (2002). Leadership in schools facing challenging circumstances. *Management in Education*, Vol. 16, No. 1: 10-13.
- Harris, A., Day, C., Hadfield, M., Hopkins, D., Hargreaves A., & Chapman, C. (2005b). *Effective leadership for school improvement*. New York: Routledge Falmer.
- Harris, A., Leithwood, K.E., Day, C.E., Sammons, P.E., & Hopkins, D.E. (2007). Distributed leadership and organizational change: Reviewing the evidence. *Journal of Education Change*, Vol. 8, No. 4: 337-347.
- Hartley, J., & Allison, M. (2000). The modernization and improvement of government and public services: The role of leadership in the modernization and improvement of public services. *Public Money & Management*, Vol. 20, No. 2: 35-40.
- Hartwig, F., & Dearing, B.E. (1979). *Exploratory data analysis*. London: Sage Publications.
- Hassan, A., Noordin T.A., & Sulaiman, S. (2010). The status on the level of environmental awareness in the concept of sustainable development amongst secondary school students. *Procedia - Social and Behavioral Sciences*, Vol. 2, No. 2: 1276-1280.
- Hatcher, L. (2003). *Step-by-step basic statistics using SAS: Student guide*. Cary, USA: SAS Institute.
- Hawken, P. (2010). Declaration of sustainability. In K. David (Ed.), *Environmental Ethics - the big questions*. London: Wiley-Blackwell.
- Hawthorne, M., & Alabaster, T. (1999). Citizen 2000: Development of a model of environmental citizenship. *Global Environmental Change*, Vol. 9, No. 1: 25-43.
- Heath, Y., & Gifford, R. (2002). Extending the theory of planned behaviour: Predicting the use of public transportation. *Journal of Applied Social Psychology*, Vol. 32, No. 10: 2154- 2189.

- Heck, R.H., & Hallinger, P. (2009). Assessing the contribution of distributed leadership to school improvement and growth in math achievement. *American Educational Research Journal*, Vol. 46, No. 3: 659-689.
- He, H.A., Greenberg, S., & Huang, E.M. (2010). One size does not fit all: Applying the transtheoretical model to energy feedback technology design. In *Proceedings of the SIGCHI Conference of Human Factors in Computing Systems*, ACM: 927-936.
- Heiskanen, E., Johnson, M., Robinson, S., Vadovics, E., & Saastamoinen, M. (2010). Low-carbon communities as a context for individual behavioural change. *Energy Policy*, Vol. 38, No. 12: 7586-7595.
- Henrich, J. (2001). Cultural transmission and the diffusion of innovations: Adoption dynamics indicate that biased cultural transmission is the predominate force in behavioral change. *American Anthropologist*, Vol. 103, No. 4: 992-1013.
- Hickman, R., Givoni, M., Bonilla, D., & Banister, D. (Eds.) (2015). *International Handbook on transport and development*. Cheltenham, UK: Edward Elgar Publishing.
- Higgs, A.L., & McMillan, V.M. (2006). Teaching through modeling: Four schools' experiences in sustainability education. *The Journal of Environmental Education*, Vol. 38, No. 1: 39-53.
- Himmelman, A.T. (1996). On the theory and practice of transformational collaboration: From social service to social justice. In C. Huxham (Ed), *Creating collaborative advantage*. Thousand Oaks, CA: Sage Publications Inc.
- Hines, J.M., Hungerford, H.R., & Tomera, A.N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education*, Vol. 18, No. 2: 1-8.
- Hobson, K. (2003). Thinking habits into action: the role of knowledge and process in questioning household consumption practices. *Local environment*, Vol. 8, No. 1: 95-112.
- Hodson, M., & Marvin, S. (2009). Cities mediating technological transitions: Understanding visions, intermediation and consequences. *Technology Analysis and Strategic Management*, Vol. 21, No. 4: 515-534.
- Homan, M.S. (2008). *Promoting community change: Making it happen in the real world*. Belmont, California: Thomson Brooks/Cole.
- Hopper, J.R., & Nielsen, J.M. (1991). Recycling as altruistic behaviour normative and behavioural strategies to expand participation in a community recycling program. *Environment and Behavior*, Vol. 23, No 2: 195-220.

- Hori, S., Kondo, K., Nogata, D., & Ben, H. (2013). The determinants of household energy-saving behavior: Survey and comparison in five major Asian cities. *Energy Policy*, Vol. 52: 354-362.
- Howell, R. (2013). It's not (just) "the environment, stupid!" Values, motivations, and routes to engagement of people adopting lower-carbon lifestyles. *Global Environmental Change*, Vol. 23, No. 1: 281-290.
- Hulpia, H., Devos, G., & Keer, H.V. (2011). The relation between school leadership from a distributed perspective and teachers' organizational commitment: Examining the source of the leadership function. *Educational Administration Quarterly*, Vol. 47, No. 5: 728-771.
- Hunecke, M., Haustein, S., Bohler, S., & Grischkat, S. (2010). An attitude based target group approach to reduce the ecological impact of daily mobility behaviour. *Environment and Behavior*, Vol. 42, No. 1: 3-43.
- Hungerford, H.R., & Volk, T.L. (1990). Changing learner behavior through environmental education. *The Journal of Environmental Education*, Vol. 21, No. 3: 8-21.
- Im, S., Bayus, B.L., & Mason, C.H. (2003). An empirical study of innate consumer innovativeness, personal characteristics, and new-product adoption behavior. *Journal of the Academy of Marketing Science*, Vol. 31, No. 1: 61-73.
- Inglehart, R. (1995). Public support for environmental protection. The impact of objective problems and subjective values in 43 societies. *Political Science and Politics*, Vol. 28, No. 1: 57-71.
- Intergovernmental Panel on Climate Change (2013). Summary for Policymakers. In: Climate change 2013: The physical science basis. Contribution of working group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex & P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- International Energy Agency (2015). CO₂ emissions from fuel combustion highlights. IEA Statistics (2015 edition). Available online at: <http://www.iea.org/publications>
- Israel, G.D. (1992). Determining sample size. University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS.
- Ivy-Yap, L.L., & Bekhet, H.A. (2015). Examining the feedback response of residential electricity consumption towards changes in its determinants: Evidence from Malaysia. *International Journal of Energy Economics and Policy*, Vol. 5, No. 3: 772-781.

- Izuagbe, R., Hamzat, S.A., & Joseph, E.I. (2016). Electronic Information Resources (EIR) adoption in private university libraries: The moderating effect of productivity and relative advantage on perceived usefulness. *Journal of Information Science Theory and Practice*, Vol. 4, No. 1: 30-48.
- Jaccard, J., Wan, C.K., & Turrisi, R. (1990). The detection and interpretation of interaction effects between continuous variables in multiple regression. *Multivariate Behavioral Research*, Vol. 25, No. 4: 467-478.
- Jackson, E.M., & Johnson, R.E. (2012). When opposites do (and do not) attract: Interplay of leader and follower self-identities and its consequences for leader-member exchange. *The Leadership Quarterly*, Vol. 23, No. 3: 488-501.
- Jackson, T. (2005a). Motivating sustainable consumption: A review of models of consumer behaviours and behaviour change. A report to the *Sustainable Development Research Network*, Policy Studies Institute, London.
- Jackson, T. (2005b). Live better by consuming less? Is there a “double dividend” in sustainable consumption? *Journal of Industrial Ecology*, Vol. 9, No. 1-2: 19-36.
- Jackson, T. (2009). Beyond the growth economy. *Journal of Industrial Ecology*, Vol. 13, No. 4: 487-490.
- Jackson, T., & Michaelis, L. (2003). *Policies for Sustainable Consumption*. Oxford, UK: Sustainable Development Commission.
- Jamieson, S. (2004). Likert scales: How to (ab)use them. *Medical Education*, Vol. 38, No. 12: 1217-1218.
- Janssen, M.A., & Jager, W. (2002). Stimulating diffusion of green products: Co-evolution between firms and consumer. *Journal of Evolutionary Economics*, Vol. 12, No. 3: 283-306.
- Jenkins, R.R., Martinez, S.A., Palmer, K., & Podolsky, M.J. (2003). The determinants of household recycling: A material-specific analysis of recycling program features and unit pricing. *Journal of Environmental Economics and Management*, Vol. 45, No. 2: 294-318.
- Jick, T.D. (1979). Mixing qualitative and quantitative: Triangulation in action. *Administrative Science Quarterly*, Vol. 24, No. 4: 602-611.
- Johnsson-Latham, G. (2007). *A study on gender equality as a prerequisite for sustainable development*. Report to the Environment Advisory Council, Sweden.
- Johnson-Brown, J., & Reingen, P.H. (1987). Social ties and word-of-mouth referral behavior. *Journal of Consumer Research*, Vol.14, No.3: 350-362.

- Kaiser, F.G., & Keller, C. (2001). Disclosing situational constraints to ecological behavior: A confirmatory application of the mixed Rasch model. *European Journal of Psychological Assessment*, Vol. 17, No. 3: 212-221.
- Kaiser, F.G., Wolfing, S., & Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of environmental psychology*, Vol. 19, No. 1: 1-19.
- Kallgren, C.A., & Wood, W. (1986). Access to attitude-relevant information in memory as a determinant of attitude-behavior consistency. *Journal of Experimental Social Psychology*, Vol. 22, No. 4: 328-338.
- Kang, N.N., Cho, S.H., & Kim, J.T. (2012). The energy-saving effects of apartment residents' awareness and behavior. *Energy and Buildings*, Vol. 46: 112-122.
- Kaplan, A.W. (1999). From passive to active about solar electricity: innovation decision process and photovoltaic interest generation. *Technovation*, Vol. 19, No. 8: 467-481.
- Kaplan, S. (2000). New ways to promote proenvironmental behaviour: Human nature and environmentally responsible behavior. *Journal of Social Issues*, Vol. 56, No. 3: 491-508.
- Kaplan, S., & Kaplan, R. (1982). *Cognition and environment: Functioning in an uncertain world*. New York: Praeger.
- Karahanna, E., & Straub, D.W. (1999). Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly*, Vol. 23, No. 2: 183-214.
- Karvonen, A. (2013). Towards systemic domestic retrofit: A social practices approach. *Building Research and Information*, Vol. 41, No. 5: 563-574.
- Kaufmann, H.R., Panni, M.F.A.K., & Orphanidou, Y. (2012) Factors affecting consumers' green purchasing behavior: An integrated conceptual framework. *Amfiteatru Economic*, Vol 14, No 31: 50-69.
- Kelly, J.A., St Lawrence, J.S., Diaz, Y.E., Stevenson, L.Y., Hauth, A.C., Brasfield, T.L., & Andrew, M.E. (1991). HIV risk behavior reduction following intervention with key opinion leaders of population: an experimental analysis. *American Journal of Public Health*, Vol. 81, No. 2: 168-171.
- Kerkhof, A.C, Nonhebel, S., & Moll, H.C. (2009). Relating the environmental impact of consumption to household expenditures: An input-output analysis. *Ecological Economics*, Vol. 68, No. 4: 1160-1170.
- Kets de Vries, M.F.R. (1999). High-performance teams: Lessons from the pygmies. *Organizational Dynamics*, Vol. 27, No. 3: 66-77.

- Khorasanizadeh, H., Parkkinen, J., Parthiban, R., & Moore, J.D. (2015). Energy and economic benefits of LED adoption in Malaysia. *Renewable and Sustainable Energy Reviews*, Vol. 49: 629-637.
- Kidder, L.H., & Fine, M. (1987). Qualitative and quantitative methods: When stories converge. *New Direction for Evaluation*, Vol. 1987, No. 35: 57-75.
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *British Medical Journal*, Vol. 311, No. 7000: 299-302.
- Klein, E. (1990). The selling of green. *D & B Reports*, Vol. 38, No. 5: 30-35.
- Klein, S.J.W, & Coffey, S. (2016). Building a sustainable energy future, one community at a time. *Renewable. and Sustainable Energy Reviews*, Vol. 60: 867-880.
- Kohles, J.C., Bligh M.C., & Carsten M.K. (2013). The vision integration process: Applying Rogers' diffusion of innovations theory to leader-follower communications. *Leadership*, Vol. 9, No. 4: 466-485.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, Vol. 8, No. 3: 239-260.
- Kollock, P. (1998). Social dilemmas: The anatomy of cooperation. *Annual Review of Sociology*, Vol. 24, No. 1: 183-214.
- Koos, S. (2011). Varieties of environmental labelling, market structures, and sustainable consumption across Europe: A comparative analysis of organizational and market supply determinants of environmental-labelled goods. *Journal of Consumer Policy*, Vol. 34, No. 1: 127-151.
- Kotchen, M.J., & Reiling, S.D. (2000). Environmental attitudes, motivations, and contingent valuation of nonuse values: A case study involving endangered species. *Ecological Economics*, Vol. 32, No. 1: 93-107.
- Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, Vol. 30: 607-610.
- Kreuger, R.A. (1988). *Focus groups: A practical guide for applied research*. (1st Ed.). London: Sage.
- Kreuter, M.W., & Skinner, C.S. (2000). Tailoring: What's in a name? *Health Education Research*, Vol. 15, No.1: 1-4.
- Krosnick, J.A., Holbrook, A.L., & Visser, P.S. (2000). The impact of the fall 1997 debate about global warming on American public opinion. *Public Understanding of Science*, Vol. 9, No. 3: 239-260.

- Kutner, M., Greenberg, E., Jin, Y., & Paulsen, C. (2006). The health literacy of America's adults: Results from the 2003 national assessment of adult literacy. *National Center for Education Statistics*.
- Labay, D.G., & Kinnear, T.C. (1981). Exploring the consumer decision process in the adoption of solar energy systems. *Journal of Consumer Research*, Vol. 8, No. 3: 271-278.
- Lam, S. (1999). Predicting intentions to conserve water from the theory of planned behaviour, perceived moral obligation and perceived water right. *Journal of Applied Social Psychology*, Vol. 29, No. 5, 1058-1071.
- Lane, B., & Potter, S. (2007). The adoption of cleaner vehicles in the UK: Exploring the consumer attitude-action gap. *Journal of Cleaner Production*, Vol. 15, No. 11-12: 1085-1092.
- Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friend products. *Journal of Consumer Marketing*, Vol. 18, No. 6: 503-520.
- Lassar, W.M., Manolis, C., & Lassar, S.S. (2005). The relationship between consumer innovativeness, personal characteristics, and online banking adoption. *International Journal of Bank Marketing*, Vol. 23, No. 2: 176-199.
- Ledwith, M., & Springett, J. (2010). *Participatory practice: Community-based action for transformative change*. Bristol, UK: The Policy Press.
- Lee, J.A., & Holden, S.J.S. (1999). Understanding the determinants of environmentally conscious behaviour. *Psychology and Marketing*, Vol. 16, No. 5: 373-392.
- Leithwood, K., Seashore-Louis, K., Anderson, S., & Walstrom, K. (2004). *How leadership influences student learning: A review of research for the Learning for Leadership Project*. New York: Wallace Foundation.
- Leithwood, K., Mascall, B., Strauss, T., Sacks, R., Memon, N., & Yashkina, A. (2007). Distributing leadership to make schools smarter: Taking ego out of the system. *Leadership and Policy in Schools*, Vol. 6, No. 1: 37-67.
- Leithwood, K., & Mascall, B. (2008a). Collective leadership effects on student achievement. *Educational Administration Quarterly*, Vol. 44, No. 4: 529-561.
- Leithwood, K., Harris, A., & Hopkins, D. (2008b). Seven strong claims about successful school leadership. *School Leadership and Management*, Vol. 28, No. 1: 27-42.
- Leithwood, K., Mascall, B., & Strauss T. (Eds). (2009a). *Distributed leadership according to the evidence*. New York: Routledge.

- Leithwood, K., Mascall, B., Strauss, T., Sacks R., Memon, N., et al. (2009b). Distributing leadership to make schools smarter: Taking ego out of the system. In K. Leithwood, B. Mascall, T. Strauss (Eds.), *Distributed leadership according to the evidence*. New York: Routledge.
- Lenzen, M., Wood, R., & Wiedmann, T. (2010). Uncertainty analysis for multi-region input–output models: A case study of the UK’S carbon footprint. *Economic Systems Research*, Vol. 22, No. 1: 43-63.
- Leonidou, L.C., Leonidou, C.N., & Kvasova, O. (2010). Antecedents and outcomes of consumer environmentally friendly attitudes and behaviour. *Journal of Marketing Management*, Vol. 26, No. 13-14: 1319-1344.
- Lewis, S.C., & Karoly, D.J. (2013). Anthropogenic contributions to Australia’s record summer temperatures of 2013. *Geophysical Research Letters*, Vol. 40, No. 14: 3705-3709.
- Linnenlueke M.K., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of World Business*, Vol 45, No 4: 357-366.
- Liu, W., Oosterveer, P., & Spaargaren, G. (2015). Promoting sustainable consumption in China: a conceptual framework and research review. *Journal of Cleaner Production*: 1-9.
- Liu, Y. (2016). *How leadership is distributed and how it is associated with teaching quality? A cross-country study with the TALIS 2013*. Ph.D. Thesis, Michigan State University, MI, USA.
- Lokhorst, A.M., Van Dijk, J., Staats, H., Van Dijk, E., & De Snoo, G. (2010). Using tailored information and public commitment to improve the environmental quality of farm lands: an example from the Netherlands. *Human Ecology*, Vol. 38, No.1: 113-122.
- Lomas, J., Enkin, M., Anderson, G.M., Hannah, W.J., Vayda, E., & Singer, J. (1991). Opinion leaders vs audit and feedback to implement practice guidelines: delivery after previous cesarean section. *Jama*, Vol. 265, No. 17: 2202-2207.
- Lorek, S., & Spangenberg, J.H. (2001). Indicator for environmentally sustainable household consumption. *International Journal of Sustainable Development*, Vol. 4, No. 1:101-120.
- Lorenzoni, I., & Langford, I. (2002). Dealing with climate change: The role of institutions in the eyes of the public. *PIK Report*. Potsdam Institute of Climate Impact Research: 342-351.
- Lozano, R. (2006). Incorporation and institutionalization of sustainable development into the universities: Breaking through barriers to change. *Journal of Cleaner Production*, Vol. 14, No. 9: 787-796.

- Lu, J., Yao, J.E., & Yu, C.S. (2005). Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. *Journal of Strategic Information Systems*, Vol. 14, No. 3: 245-268.
- Lucas, K., Brooks, M., Darnton, A., & Jones, J.E. (2008). Promoting pro-environmental behaviour; Existing evidence and policy implications. *Environmental Science & Policy*, Vol. 11, No. 5: 456-466.
- Lunsford, D.A., & Burnett, M.S. (1992). Marketing product innovations to the elderly: understanding the barriers to adoption. *Journal of Consumer Marketing*, Vol. 9, No. 4: 53-63.
- Lutzenhiser, L. (1992). A cultural model of household energy consumption. *Energy*, Vol. 17, No. 1:47-60.
- Lutzenhiser, L., & Hackett, B. (1993). Social stratification and environmental degradation: understanding household CO₂ Production. *Social Problems*, Vol. 40, No. 1:50-73.
- MacBeath, J. (2005). Leadership as distributed: A matter of practice. *School Leadership and Management*, Vol. 25, No. 4: 349-366.
- Magnani, R., Sabin, K., Saidel, T., & Heckathorn, D. (2005). Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS*, Vol. 19, No. 2: 67-72.
- Maio, G. (2011). Don't mind the gap between values and action. Common Cause Briefing. Available online at: www.valuesandframes.org.
- Malaysia Energy Commission (2016). Statistical database available at <http://meih.st.gov.my>.
- Maller C.J., & Horne, R.E. (2011). Living lightly: How does climate change feature in residential home improvements and what are the implications for policy? *Urban Policy and Research*, Vol. 29, No. 1: 59-72.
- Manzo, L.C., & Perkins, D.D. (2006). Finding common ground: The importance of place attachment to community participation and planning. *Journal of Planning Literature*, Vol. 20, No. 4: 335-350.
- Marchionini, G., & Moran, B. (2012). *Informational professionals 2050: Educational Possibilities and Pathways*, University of North Carolina.
- Markantoni, M. (2016). Low carbon governance: Mobilizing community energy through top-down support? *Environmental Policy and Governance*, Vol. 26, No. 3: 155-169.
- Martin J. (2002). *Organizational culture: Mapping the terrain*. Thousand Oaks: Sage Publications, Inc.

- Martin, M., Williams, I.D., & Clark, M. (2006). Social, cultural and structural influences on household waste recycling: A case study. *Resources, Conservation and Recycling*, Vol. 48, No. 4: 357-395.
- Martinez-Espineira, R., Garcia-Valinas, M.A., & Nauges, C. (2014). Households' pro-environmental habits and investments in water and energy consumption: Determinants and relationships. *Journal of Environmental Management*, Vol. 133: 174-183.
- Martinez, K.E., Schor, J.B., Abrahamse, W., Alkon, A.H., Axsen, J., et al. (2015). Consumption and climate change. In R.E. Dunlap, & R.J. Brulle (Eds.). *Climate change and society: Social perspectives*. (p. 93-126). New York, USA: Oxford University Press.
- Mascall, B., Leithwood, K., Straus, T., & Sacks, R. (2008). The relationship between distributed leadership and teachers' optimism. *Journal of Educational Administration*, Vol. 46, No. 2: 217-228.
- Maser, C. (Ed.) (1996). *Resolving environmental conflict: Towards sustainable community development*. Defray Beach, Florida: St Lucie Press.
- Massey, A.P., Montoya-Weiss, M.M., & Brown, S.A. (2001). Reaping the benefits of innovative IT: The long and winding road. *IEEE Transactions on Engineering Management*, Vol. 48, No. 3: 348-357.
- Mat Said, A., Ahmadun, F.R., Paim, L., & Masud, J. (2003). Environmental concerns, knowledge and practices gap among Malaysian teachers. *International Journal of Sustainability in Higher Education*, Vol. 4, No. 4: 305-313.
- Mayrowetz, D. (2008). Making sense of distributed leadership: Exploring the multiple usages of the concept in the field. *Educational Administration Quarterly*, Vol. 44, No. 3: 424-442.
- Mayrowetz, D., Murphy, J. Seashore Louis, K., & Smylie, M.A. (2007). Distributed leadership as work redesign: Retrofitting the job characteristics model, *Leadership and Policy in Schools*, Vol. 6: No. 1: 69-101.
- Mazur, A., & Rosa, E. (1974). Energy and life-style: Cross-national comparison of energy consumption and quality of life indicators. *Science*, Vol. 186, No. 4164: 607-610.
- Mazur, A. (2011). Does increasing energy or electricity consumption improve quality of life in industrial nations? *Energy Policy*, Vol. 39, No. 5: 2568-2572.
- McCarty, J.A., & Shrum, L.J. (1994). The recycling of solid wastes: Personal values, value orientations, and attitudes about recycling as antecedents of recycling behavior. *Journal of Business Research*, Vol. 30, No. 1: 53-62.

- McCarty, J.A., & Shrum, L.J. (2001). The influence of individualism, collectivism, and locus control on environmental beliefs and behaviour. *Journal of Public Policy and Marketing*, Vol. 20, No. 1: 93-104.
- McClelland, G.H., & Judd, C.M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*, Vol. 114, No. 2: 376-390.
- McEachan, R.R.C., Conner, M., Taylor, N.J., & Lawton, R.J. (2011). Prospective prediction of health-related behaviours with the theory of planned behaviour: A meta-analysis. *Health Psychology Review*, Vol. 5, No.2: 97-144.
- McKenzie-Mohr, D., & Smith, W. (1999). *Fostering sustainable behavior: An introduction to community-based social marketing*. Gabriola Island, B.C., Canada: New Society Publishers.
- McKenzie-Mohr, D., Nemiroff, L.S., Beers, L., & Desmarais, S. (1995). Determinants of responsible environmental behaviour. *Journal of Social Issues*, Vol. 51, No. 4: 139-156.
- Mehra, A., Smith, B., Dixon, A., & Robertson, B. (2006). Distributed leadership in teams: The network of leadership perceptions and team performance. *The Leadership Quarterly*, Vol. 17, No. 3: 232-245.
- Meneses, G.D., & Palacio, A.B. (2005). Recycling behaviour: A multidimensional approach. *Environment and Behavior*, Vol. 37: 837-860.
- Merriam, S.B. (1998). *Qualitative research and case study: Applications in education*. San Francisco: CA: Jossey-Bass.
- Messick, D.M., & Brewer, M.B. (1983). Solving social dilemmas: A review. In L. Wheeler, & P. Shaver (Eds.). *Review of Personality and Social Psychology*, Vol. 4. Beverly Hills, CA: Sage.
- Middlemiss, M., & Parrish, B.D. (2010). Building capacity for low-carbon communities: The role of grassroots initiatives. *Energy Policy*, Vol. 38, No. 12: 7559-7566.
- Midgley, D.F., & Dowling, G.R. (1978). Innovativeness: The concept and its measurement. *Journal of Consumer Research*, Vol. 4, No. 4: 229-242.
- Midgley, F.D., & Dowling, G.R. (1993). A longitudinal study of product form innovation: The interaction between predispositions and social messages. *Journal of Consumer Research*, Vol. 19, No. 4: 611-625.
- Miehe, R., Scheumann, R., Jones, C.M., Kammen, D.M., & Finkbeiner, M. (2016). Regional carbon footprints of households: a German case study. *Environment, Development and Sustainability*, Vol.18, No.2: 577-591.

- Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: A sourcebook of new methods*. Thousand Oaks, CA: Sage.
- Ministry of Urban Wellbeing, Housing and Local Government (2016). Only 15pc of waste is recycled in Malaysia. News reported online: <https://themalaymailonline.wordpress.com/2016/02/04/minister-only-15pc-of-malaysians-recycle/>
- Minx, J. C., Wiedmann, T., Wood, R., Peters, G. P., Lenzen, M., Owen, A., ..., & Ackerman, F. (2009). Input–output analysis and carbon footprinting: An overview of applications. *Economic Systems Research*, Vol.21, No.3: 187-216.
- Mohamed, A.S., & Savenije, H.H.G. (2000). Water demand management: Positive incentives, negative incentives or quota regulation? *Physics and Chemistry of the Earth, Part B: Hydrology, Oceans and Atmosphere*, Vol. 25, No. 3: 251-258.
- Moloney, S., Horne, R.E., & Fien, J. (2010). Transitioning to low carbon communities-from behaviour change to systemic change: Lessons from Australia. *Energy Policy*, Vol. 38, No. 12: 7614-7623.
- Mondejar-Jimenez, J., Cordente-Rodriguez, M., Meseguer-Santamaria, M.L., & Gazquez-Abad, J.C. (2011). Environmental behavior and water saving in Spanish housing. *International Journal of Environment and Resources*, Vol. 5, No. 1: 1-10.
- Moser, S.C. (2010). Communicating climate change: History, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change*, Vol. 1, No. 1: 31-53.
- Murray, J. (2010). Likert data: What to use, parametric or non-parametric? *International Journal of Business and Social Science*, Vol. 4, No. 11: 258-264.
- Myers, T.A. (2011). Goodbye, listwise deletion: Presenting hot deck imputation as an easy and effective tool for handling missing data. *Communication Methods and Measures*, Vol. 5, No. 4: 297-310.
- National Solid Waste Management Department (2016). Separation at source. Available online: <http://www.kpkt.gov.my/separationatsource/>
- Nishio, C., & Takeuchi, T. (2005). Factors of household recycling and waste reduction behavior. *AP-Asia Pacific Advances in Consumer Research*, Vol. 6: 46-51.
- Noppers, E.H., Keizer, K., Bolderdijk, J.W., & Steg, L. (2014). The adoption of sustainable innovations: Driven by symbolic and environmental motives. *Global Environmental Change*, Vol. 25: 52-62.

- Norman, G. (2010). Likert scales, levels of measurement and the “laws”. *Advance in Health Science Education*, Vol. 15, No. 5: 625-632.
- Nunnally, J. (1978). *Psychometric methods*. New York: McGraw Hill.
- O'Connor, R.E., Bord, R.J., & Fisher, A. (1999). Risk perceptions, general environmental beliefs, and willingness to address climate change. *Risk Analysis*, Vol. 19, No. 3: 461-471.
- Ogle, J.F., Hyllegard, K.H., & Dunbar, B.H. (2004). Predicting patronage behaviors in a sustainable retail environment: Adding retail characteristics and consumer lifestyle orientation to the belief-attitude-behavior intention model. *Environment and Behavior*, Vol. 36, No. 5: 717-741.
- Olivier, J.G.J., Janssens-Maenhaut, G., Muntaen, M., & Peters, J.H.A.W. (2015). Trends in global CO2 emissions; 2015 Report, The Hague: PBL Netherlands Environmental Assessment Agency; Ispra: European Commission, Joint Research Centre.
- Olli, E., Grendstad, G., & Wollebaek, D. (2001) Correlates of environmental behaviors: bringing back social context. *Environment and Behavior*, Vol. 33, No. 2: 181-208.
- Omran, A., Mahmood, A., Abdul Aziz, H., & Robinson, G.M. (2009) Investigating households' attitude toward recycling of solid waste in Malaysia: A case study. *International Journal of Environment & Resources*, Vol. 3, No. 2: 275-288.
- Opotow, S., & Weiss, L. (2000). Denial and the process of moral exclusion in environmental conflict. *Journal of Social Issues*, Vol. 56, No. 3: 475-490.
- Organisation for Economic Co-operation and Development (OECD). 2008. Gender and sustainable development: Maximising the economic, social and environmental role of women. *OECD*. Paris. Available at www.oecd.org.
- Oskamp, S., Harrington, M. J., Edwards, T.C., Sherwood, D.L., Okuda, S.M., & Swanson, D.C. (1991). Factors influencing household recycling behavior. *Environment and Behaviour*, Vol. 23, No. 4: 494-519.
- Ostlund, L.E. (1974). Perceived innovation attributes as predictors of innovativeness. *Journal of Consumer Research*, Vol. 1, No. 2: 23-29.
- Othman, M.N. (2000). Kesedaran terhadap alam sekitar: Kajian perbandingan di antara pengguna Melayu dan Cina di Bandar. *Malaysian Journal of Consumer and Family Economics*, Vol. 3: 42-50.
- Ottman, J.A. (1998). *Green marketing: Opportunities for innovation*. Chicago, IL: NTC, McGraw-Hill.

- Owens, S. (2000). Engaging the public: Information and deliberation in environmental policy. *Environment and Planning A*, Vol. 34, No. 7: 1141-1148.
- Ozaki, R. (2011) Adopting sustainable innovation: What makes consumers sign up to green electricity? *Business Strategy and the Environment*, Vol. 20, No.1: 1-17.
- Panni, M.F.A.K. (2006). *The effect of consumerism towards customer attitudinal behavior in food industry in Malaysia*. M.Phil. Thesis. Multimedia University. Malaysia.
- Parfitt, J., Barthel, M., & Macnaughton, S. (2010). Food waste within food supply chains: quantification and potential for change to 2050. *Philosophical Transactions of the Royal Society B*, Vol. 365, No. 1554: 3065-3081.
- Park, C.S. (2013). Does Twitter motivate involvement in politics? Tweeting, opinion leadership, and political engagement. *Computers in Human Behavior*, Vol. 29, No.4: 1641-1648.
- Patchen, M. (2010). What shapes public reactions to climate change? Overview of research and policy implications. *Analyses of Social Issues and Public Policy*, Vol. 10, No. 1: 47-68.
- Peattie, K. (1995). *Environmental marketing management*. London: Pitman.
- Peers, I. (1996). *Statistical analysis for education and psychology researchers*. Bristol, PA: Falmer Press.
- Perrin, D., & Barton, J. (2001). Issues associated with transforming household attitudes and opinions into materials recovery: A review of two kerbside recycling schemes. *Resources, Conservation and Recycling*, Vol. 33, No. 1: 61-74.
- Peters, M., Fudge, S., & Sinclair, P. (2010). Mobilising community action towards a low-carbon future: Opportunities and challenges for local government in the UK. *Energy Policy*, Vol. 38, No. 12: 7596-7603.
- Petty, M.M., Beadles, N.A., Lowery, C.M., Chapman, D.F., & Connell, D.W. (1995). Relationships between organizational culture and organizational performance. *Psychological Reports*, Vol. 76, No. 2: 483-492.
- Pickett-Baker, J., & Ozaki, R. (2008). Pro-environmental products: Marketing influence on consumer purchase decision. *Journal of Consumer Marketing*, Vol. 25, No. 5: 281-293.
- Pittock, A.B. (2005). *Climate change: Turning up the heat*. CSIRO Publishing: Collingwood, Australia.

- Pittock, A.B. (2009). *Climate change: The science, impacts and solutions*. CSIRO Publishing: Collingwood, Australia.
- Poortinga, W., Steg, L., & Vlek, C. (2004). Values, environmental concern, and environmental behavior a study into household energy use. *Environment and Behavior*, Vol. 36, No. 1: 70-93.
- Portugal, E., & Yukl, G. (1994). Perspectives on environmental leadership. *Leadership Quarterly*, Vol. 5, No. 3: 271-276.
- Prasanna, R., & Huggins, T.J. (2016). Factors affecting the acceptance of information systems supporting emergency operations centres. *Computers in Human Behavior*, Vol. 57: 168-181.
- Preece, J., Rogers, Y., & Sharp, H. (2002). *Interaction design. Beyond human-computer interaction*. Somerset, New Jersey: John Wiley and Sons.
- Prochaska, J.O., & DiClemente, C.C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, Vol. 51, No. 3: 390-395.
- Puhan, M.A., Gordon, D.B., Guyatt, H., Heels-Ansdell, D., & Schunemann, H.J. (2005). Internal consistency reliability is a poor predictor of responsiveness. *Health and Quality of Life Outcomes*, Vol. 3, No. 33: 1-8.
- Purdy, J. (2010). The politics of nature: Climate change, environmental law, and democracy. *The Yale Law Journal*, Vol. 119, No. 6: 1122-1209.
- PPj (2012). Putrajaya Green City 2025: Baseline and Preliminary Study. Revised Edition (2012). Available online: [http://www.ppj.gov.my/cpnavigation/general/Putrajaya_Green_City_2025_Baseline_and_Preliminary_Study_\(November_2012\).pdf](http://www.ppj.gov.my/cpnavigation/general/Putrajaya_Green_City_2025_Baseline_and_Preliminary_Study_(November_2012).pdf)
- PPj (2013). Annual Report 2013.
- PPj (2014). Annual Report 2014.
- PPj (2014). Milestones towards PGC2025: Putrajaya Green City Initiatives. Paper presented at COP20 Japan Pavilion, NIES Event "Low Carbon City Design by AIM". COP20, Lima, Peru.
- Rabinovich, A., Morton, T., Postmes, T., & Verplanken, B., (2012). Collective self and individual choice: The effects of inter-group comparative context on environmental values and behaviour. *British Journal of Social Psychology*, Vol. 51, No. 4: 551-569.

- Raj, S., Sharma, V.L., Singh, A., & Goel, S. (2014). Evaluating quantity and quality of outdoor advertising media for health information in a northern city of India. *International Journal of Recent Scientific Research*, Vol. 5, No. 12: 2337-2341.
- Ramayah, T., Wai, J.C.L., & Osman, M. (2010). Green product purchase intention: Some insights from a developing country. *Resources, Conservation and Recycling*, Vol. 54, No. 12: 1419-1427.
- Ramayah, T., Wai, J.C.L., & Lim, S. (2012). Sustaining the environment through recycling: An empirical study. *Journal of Environmental Management*, Vol. 102: 141-147.
- Redclift, M., & Benton, T. (Eds.) (1994). *Social theory and the global environment*. London: Routledge.
- Remmen, A., & Lorentzen, B. (2000). Employee participation and cleaner technology: learning processes in environmental teams. *Journal of Cleaner Production*, Vol 8, No 5: 365-373.
- Rennie, D.L. (1999). A matter of hermeneutics and the sociology of knowledge. In M. Kopala, A. Suzuki (Eds.), *Using qualitative methods in psychology* (pp. 3-14). Thousand Oaks, CA: Sage Publications.
- Rheingold, H. (2005). From the screen to the streets. In J. Lebowsky, M. Ratcliffe (Eds.), *Extreme Democracy*. Online at: <http://www.extremedemocracy.com>.
- Rich, A. Brandes, K., Mullan, B.A., & Hagger, M.S. (2015). Theory of planned behavior and adherence in chronic illness: A meta-analysis. *Journal of Behavioral Medicine*, Vol. 38, No. 4: 673-688.
- Riffe, D., Lacy, S., & Fico, F. G. (2005). *Analyzing media messages: Using quantitative content analysis in research*. Mahwah-New Jersey: Lawrence Erlbaum Associates.
- Riggs, N.R., Feinberg, M.E., & Greenberg, M.T. (2002). Community sector and gender differences in the perception of community-based prevention. *Journal of Community Psychology*, Vol. 30, No. 6: 709-721.
- Robinson, V.M.J. (2008a). Forging the links between distributed leadership and educational outcomes. *Journal of Educational Administration*, Vol. 46, No. 2: 241-256.
- Robinson, V.M.J., Lloyd, C.A., & Rowe K.J. (2008b). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, Vol. 44, No. 5: 635-674.

- Robinson, R., & Smith, C. (2002). Psychosocial and demographic variables associated with consumer intention to purchase sustainably produced foods as defined by the Midwest Food Alliance. *Journal of Nutrition Education and Behavior*, Vol. 34, No. 6: 316-325.
- Rogers, E.M. (1983). *Diffusion of innovations (3th Ed.)*. New York: Free Press.
- Rogers, E.M. (1995). *Diffusion of innovations (4th Ed.)*. New York: Free Press.
- Rogers, E.M. (2002). Diffusion of preventive innovations. *Addictive Behaviors*, Vol 27:989-993.
- Rogers, E.M. (2003). *Diffusion of innovations (5th Ed.)*. New York: Free Press.
- Rogers, E.M. (2004). A prospective and retrospective look at the Diffusion Model. *Journal of Health Communication: International Perspectives*, Vol. 9: 13-19.
- Rohracher, H. (2001). Managing the technological transition to sustainable construction of buildings: A socio-technical perspective. *Technology Analysis & Strategic Management*, Vol. 13, No. 1: 137-150.
- Roos, E., & Karlsson, H. (2013). Effect of eating seasonal on the carbon footprint of Swedish vegetable consumption. *Journal of Cleaner Production*, Vol. 59: 63-72.
- Rose, P., & Kim, J. (2011). Self-monitoring, opinion leadership and opinion seeking: A socio-motivational approach. *Current Psychology*, Vol.30, No.3: 203-214.
- Rosen, C.S. (2000). Is the sequencing of change processes by stage consistent across health problems? A meta-analysis. *Health Psychology*, Vol. 19, No. 6: 593-604.
- Rothman, A.J., & Salovey, P. (2007). The reciprocal relation between principles and practice. In A. Kruglanski, E.T. Higgins (Eds.), *Social psychology: Handbook of basic principle (2nd Ed.)*. New York: Guilford Press.
- Rowe, W.G., Canella Jr., A.A., Rankin, D., & Gorman, D. (2005). Leader succession and organizational performance: Integrating the common-sense, ritual scapegoating and vicious circle succession theories. *The Leadership Quarterly*, Vol. 16, No. 6: 197-219.
- Roy, J., & Pal, S. (2009). Lifestyles and climate change: link awaiting activation. *Current Opinion in Environmental Sustainability*, Vol. 1, No. 2: 192-200.
- Roy, R., Caird, S., & Potter, S. (2007). People centred eco-design: Consumer adoption and use of low and zero carbon products and systems. In J. Murphy (Ed.), *Governing Technologies for Sustainability*. London, UK: Earthscan.

- Ryan, A.B. (2006). Post-positivist approaches to research. In *Researching and Writing your thesis: A guide for Postgraduate Students*, (p. 12-26). Maynooth University, Ireland: Maynooth Adult and Community Education.
- Sadalla, E.K., & Krull, J.L. (1995). Self-presentational barriers to resource conservation. *Environment and Behavior*, Vol. 27, No. 3: 328–353.
- Safaai, N.S.M., Noor, Z.Z., Hashim, H., Ujang, Z., & Talib, J. (2011). Projection of CO₂ emissions in Malaysia. *Environmental Progress & Sustainable Energy*, Vol. 30, No. 4: 658-665.
- Salant, P., & Dillman, I., Don, A. (1994). *How to conduct your own survey*. New York: Wiley.
- Salonen, A.O., & Ahlberg, M. (2013) Obstacles to sustainable living in the Helsinki Metropolitan Area. *Sustainable Cities and Society*, Vol. 8: 48-55.
- Samdahl, D.M., & Robertson, R. (1989). Social determinants of environmental concern: Specification and test of the model. *Environment and Behavior*, Vol. 21, No. 1: 57-81.
- Sammons, P., Qing, G., Day, C., & Ko, J. (2011). Exploring the impact of school leadership on pupil outcomes: Results from a study of academically improved and effective schools in England. *International Journal of Educational Management*, Vol. 25, No. 1: 83-101.
- Sanquist, T.F, Orr, H., Shui, B., & Bittner, A.C. (2012). Lifestyle factors in U.S. residential electricity consumption. *Energy Policy*, Vol. 42: 354-364.
- Saphores, J-D.M., Ogunseitan, O.A., & Shapiro, A.A (2012). Willingness to engage in a pro-environmental behavior: An analysis of e-waste recycling based on a national survey of U.S. households. *Resources, Conservation and Recycling*, Vol. 60: 49-63.
- Sarathy, P.S., & Patro, S.K. (2013). The role of opinion leaders in high-involvement purchases: An empirical investigation. *South Asian Journal of Management*, Vol. 20, No.2: 127-145.
- Sarros, J.C., & Santora, J.C. (2001). The transformational-transactional leadership model in practice. *Leadership & Organization Development Journal*, Vol. 22, No.8: 383-394.
- Satoshi, N., Takahiro, T., Satoru, O., Kazuhiko, T., & Nisikawa, U. (2014). Exploring factors affecting farmers' implementation of wildlife-friendly farming on Sado Island, Japan. *Journal of Resources and Ecology*, Vol. 5, No. 4: 370-380.

- Schahn, J., & Holzer, E. (1990). Studies of individual environmental concern: The role of knowledge, gender, and background variables. *Environment and Behavior*, Vol. 22, No. 6: 767-786.
- Schelly, C., Cross, J.E., Franzen, W.S., Hall, P., & Reeve, S. (2011). Reducing energy consumption and creating a conservation culture in organizations: A case study of one public school district. *Environment and Behavior*, Vol. 43, No. 3: 316-343.
- Schenk, M., & Dobler, T. (2002). Towards a theory of campaigns: The role of opinion leaders. In H-D. Klingemann, & A. Rommele (Eds.), *Public information campaigns & opinion research: A handbook for the student & practitioner*. London: Sage.
- Schreiner, C., Henriksen, E.K., & Kirkeby Hansen, P.J. (2005). Climate education: Empowering today's youth to meet tomorrow's challenges. *Studies in Science Education*, Vol. 41, No. 1: 3-49.
- Schewe, R.L., & Stuart, D. (2016). Why don't they just change? Contract farming, informational influence, and barriers to agricultural climate change mitigation. *Rural Sociology*: 1-37
- Schipper, L., Bartlett, S., Hawk, D., & Vine, E. (1989). Linking lifestyle and energy use: A matter of time? *Annual Review of Energy*, Vol 14: 273-320.
- Schroeder, H., Burch, S., & Rayner, S. (2013). Novel multisector networks and entrepreneurship in urban climate governance. *Environment and Planning C: Government and Policy*, Vol. 31, No. 5: 761-768.
- Schultz, P.W., Messina, A., Tronu, G., Limas, E.F., Gupta, R., & Estrada, M. (2016). Personalized normative feedback and the moderating role of personal norms: A field experiment to reduce residential water consumption. *Environment and Behavior*, Vol. 48, No. 5: 686-710.
- Schultz, P.W., & Oskamp, S. (1996). Effort as a moderator of the attitude-behavior relationship: General environmental concern and recycling. *Social Psychology Quarterly*, Vol. 59, No. 4: 375-383.
- Schultz, P.W., & Zelezny, L. (1999). Values as predictors of environmental attitudes: Evidence for consistency across 14 countries. *Journal of Environmental Psychology*, Vol. 19, No. 3: 255-265.
- Schwartz, S. (1973). Normative explanation of helping behaviour: A critique, proposal, and empirical test. *Journal of Experimental Social Psychology*, Vol. 9: 349-363.
- Schwartz, S.H. (1977). Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 10). New York: Academic Press.

- Schwinghammer, S.A. (2013). This was all very interesting, but how can we use it? A practitioner's guide to sustainable behaviour. In H.C.M., van Trijp (Ed.), *Encouraging sustainable behaviour: Psychology and the environment*. New York: Psychology Press.
- Scribner, J.P., Sawyer, R.K., Watson, S.T., & Myers, V.L. (2007). Teacher teams and distributed leadership: A study of group discourse and collaboration. *Educational Administration Quarterly*, Vol. 43, No. 1: 67-100.
- Serrat, O. (2009). Distributing leadership. *Knowledge Solutions*, Vol 64: 1-8.
- Seyfang, G. (2007a). Cultivating carrots and community: Local organic food and sustainable consumption. *Environmental Values*, Vol. 16, No. 1: 105-123.
- Seyfang, G., & Smith, A. (2007b). Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental Politics*, Vol. 16, No. 4: 584-603.
- Sheeran, P. (2002). Intention-behavior relations: A conceptual and empirical review. *European Review of Social Psychology*, Vol.12, No.1: 1-36.
- Sheeran, P., Gollwitzer, P.M., & Bargh, J.A. (2013). Nonconscious processes and health. *Health Psychology*, Vol 32, No 5: 460-473.
- Shihabi, O.Z.A. (2012). External advertisements: Billboard advertisements and its impact on sugar-free consumers in Abdoun area. *International Journal of Scientific and Engineering Research*, Vol. 3, No. 6: 1-7.
- Shoham, A., & Ruvio, A. (2008). Opinion leaders and followers: A replication and extension. *Psychology and Marketing*, Vol. 25, No. 3: 280-297.
- Shove, E. (2003). Converging conventions of comfort, cleanliness and convenience. *Journal of Consumer Policy*, Vol. 26, No. 4: 395-418.
- Shove, E. (2010). Beyond the ABC: climate change policy and theories of social change. *Environment and Planning*, Vol. 42, No. 6: 1273-1285.
- Simkins, T. (2005). Leadership in education: 'What works' or 'What makes sense'? *Educational Management Administration & Leadership*, Vol. 33, No. 1: 9-26.
- Singh, S. (2014). *The impact of distributed leadership practices on the functioning of primary schools in Johannesburg South, South Africa*. Masters Thesis, University of South Africa, South Africa.
- Sinnappan, P., & Rahman, A.A. (2011). Antecedents of green purchasing behaviour among Malaysian consumers. *International Business Management*, Vol. 5, No. 3: 120-139.

- Skea, J., & Nishioka, S. (2008). Policies and practices for a low-carbon society. *Climate Policy*, Vol. 8, Sup. 1: S5-16.
- Skogstad, A., Einarsen, S., Torsheim, T., Aasland, M. S., & Hetland, H. (2007). The destructiveness of laissez-faire leadership behavior. *Journal of Occupational Health Psychology*, Vol. 12, No. 1: 80-92.
- Skogstad, A., Hetland, J., Glaso, L., & Einarsen, S. (2014). Is avoidant leadership a root cause of subordinate stress? Longitudinal relationships between laissez-faire leadership and role ambiguity. *Work & Stress*, Vol 28, No. 4: 323-341.
- Sniehotta, F., Pesseau, J., & Araujo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, Vol. 8, No. 1: 1-7.
- Sommer, M., & Kratena, K. (2017). The carbon footprint of European households and income distribution. *Ecological Economics*, Vol. 136: 62-72.
- Soumerai, S.B., McLaughlin, T.J., Gurwitz, J.H., Guadagnoli, E., Hauptman, P.J., Borbas, C., ..., & Asinger, R. (1998). Effect of local medical opinion leaders on quality of care for acute myocardial infarction: a randomized controlled trial. *Jama*, Vol. 279, No. 17: 1358-1363.
- Sovacool, B., & Hirsh, R. (2009). Beyond batteries: An examination of the benefits and barriers to plug-in hybrid electric vehicles (PHEVs) and a vehicle-to-grid (V2G) transition. *Energy Policy*, Vol. 37, No. 3:1095-1103.
- Spangenberg, J.H., & Lorek, S. (2002). Environmentally sustainable household consumption: from aggregate environmental pressures to priority fields of action. *Ecological Economics*, Vol. 43: 127-140.
- Spaargaren, G., & Van Vliet, B. (2000). Lifestyles, consumption and the environment: The ecological modernization of domestic consumption. *Environmental Politics*, Vol. 9, No.1: 50-76.
- Speirs, D., & Tucker, P. (2001). A profile of recyclers making special trips to recycle. *Journal of Environmental Management*, Vol 62, No 2: 201-220.
- Spillane, J. (2005). Distributed leadership. *The Educational Forum*, Vol 69: 143-150.
- Spillane, J. (2006). *Distributed leadership*. San Francisco, CA: Jossey-Bass.
- Spillane, J., Halverson, R., & Diamond, J. (2001). Investigating school leadership practice: A distributed perspective. *Educational Researcher*, Vol. 30, No. 3: 23-28.
- Spillane, J.P., Halverson, R., & Diamond J.B. (2004). Towards a theory of leadership practice: A distributed perspective. *Journal of Curriculum Studies*, Vol. 36, No. 1: 3-34.

- Spillane, J.P., & Diamond, J.B. (Eds.) (2007). *Distributed leadership in practice*. New York: Teachers College Press.
- Spillane, J.P., Camburn, E.M., & Pareja, A.S. (2007). Taking a distributed perspective to the school principal's work day. *Leadership and Policy in Schools*, Vol. 6, No. 1: 103-125.
- Spillane, J.P., Camburn, E.M., Pustejovsky, J., Stitzel Pareja, A., & Lewis, G. (2008). Taking a distributed perspective: Epistemological and methodological tradeoffs in operationalizing the leader-plus aspect. *Journal of Educational Administration*, Vol. 46, No. 2: 189-213.
- Staats, H, Harland, P., & Wilke, H.A. (2011). Effecting durable change: A team approach to improve environmental behaviour in the household. *Environment and Behavior*, Vol. 36, No. 3: 341-367.
- Starik, M., & Rands G. (1995). Weaving an integrated web: Multilevel ecologically sustainable organizations. *Academy of Management Review*, Vol. 20, No. 4: 908-935.
- Stern, P.C., Dietz, T., Abel, T.D., Guagnano, G.A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review*, Vol. 6, No. 2: 81-97.
- Stern, P.C. (1992). Psychological dimensions of global environmental change. *Annual Review of Psychology*, Vol. 43, No. 1: 269-302.
- Stern, P.C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, Vol. 56, No. 3: 407-424.
- Sterner, T, & Bartelings, H. (1999). Household waste management in a Swedish municipality: Determinants of waste disposal, recycling and composting. *Environmental and Resource Economics*, Vol. 13, No. 4: 473-491.
- Strange, K. (2009). International review of household waste prevention policies and practices. Module L3, Defra Waste and Resources Evidence Programme, London, UK: Department for Environment, Food and Rural Affairs.
- Straughan, R.D., & Roberts, J.A. (1999). Environmental segmentation alternatives: A look at green consumer behaviour in the new millennium. *Journal of Consumer Marketing*, Vol. 16, No. 6: 558-575.
- Sudman, S., & Bradburn, N.M. (1982). *Asking questions: A practical guide to questionnaire design*. San Francisco, California: Jossey-Bass Publishers.
- Sullivan, R., Gouldson, A., & Webber, P. (2013). Funding low carbon cities: local perspectives on opportunities and risks. *Climate Policy*, Vol. 13, No. 4: 514-529.

- Sultan, F., & Winer, R.S. (1993). Time preferences for products and attributes and the adoption of technology-driven consumer durable innovations. *Journal of Economic Psychology*, Vol. 14, No. 4: 587-613.
- Sultana, P., & Abeyasekera, S. (2007). Effectiveness of participatory planning for community management of fisheries in Bangladesh. *Journal of Environmental Management*, Vol. 86, No. 1: 201-213.
- Sutton, S. (2000). A critical review of transtheoretical model applied to smoking cessation. In P., Norman (Ed.), *Understanding and changing health behaviour: From health beliefs to self-regulation*. Amsterdam, Netherland: Harwood.
- Swim, J., Clayton, S., Doherty, T., Gifford, R., Howard, G., Reser, J., ..., & Weber, E. (2009). Psychology and global climate change: Addressing a multi-faceted phenomenon and set of challenges. A report by the American Psychological Association's Task Force on the interface between psychology and global climate change. *American Psychological Association*, Washington.
- Tabacahnick, B., & Fidell, L. (1989). *Using multivariate statistics*. Northedge: Harper-Collins.
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics (5th ed.)*. Needham Height, MA: Allyn & Bacon.
- Taylor, D.C., & Taylor, C.E. (Eds.). (2016). *Just and lasting change: When communities own their futures*. Baltimore, Maryland: John Hopkins University Press.
- Tan, T.H. (2013). Determinants of intention to inhabit eco-friendly homes in Malaysia. *Journal of Green Building*, Vol. 8, No. 4: 146-163.
- Tanner, C. (1999). Constraints of environmental behaviour. *Journal of Environmental Psychology*, Vol. 19, No. 2: 145-157.
- Tanner, C., & Kast, S.W. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology and Marketing*, Vol. 20, No. 10: 883-902.
- Tashakkori, A., & Tedlie, C. (1998). Mixed methodology: Combining qualitative and quantitative approaches. In L. Bickman, D.J. Rog (Eds.). *Applied Social Sciences Research Methods Series (Vol 46)*. Thousand Oaks, CA: Sage.
- Tellis, G.J., Yin, E., & Bell, S. (2009). Global consumer innovativeness: Cross-country differences and demographic commonalities. *Journal of International Marketing*, Vol. 17, No. 2: 1-22.

- Tenaga Nasional Berhad (2016a). RM20 Government Subsidy. Available at: <http://www.tnb.com.my>.
- Tenaga Nasional Berhad (2016b). SAVE Rebate Program. Available at: <http://www.tnb.com.my>.
- Tenaga Nasional Berhad (2016c). Pricing and Tariff. Available at: <http://www.tnb.com.my>.
- Tertoolen, R., van Kreveld, D., & Verstraten, B. (1998). Psychological resistance against attempts to reduce private car use. *Transportation Research A*, Vol. 32, No. 3: 171-181.
- Tessmer, M (1990). Environmental analysis: A neglected stage of instructional design. *Educational Technology Research and Development*, Vol. 38, No. 1: 55-64.
- Thatcher, J.B., & Perrewe, P.L. (2002). An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *MIS Quarterly*, Vol. 26, No. 4: 381-396.
- Thøgersen, J. (2003). Monetary incentives and recycling: Behavioural and psychological reactions to a performance-dependent garbage fee. *Journal of Consumer Policy*, Vol. 26, No. 2: 197-228.
- Thøgersen, J. (2005). How may consumer policy empower consumers for sustainable lifestyles? *Journal of Consumer Policy*, Vol. 28, No. 2: 143-177.
- Thøgersen, J., Olander, F (2006). To what degree are environmentally beneficial choices reflective of a general conservation stance? *Environment and Behavior*, Vol. 38, No. 4: 550-569.
- Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing*, Vol. 44, No. 11/12: 1787-1810.
- Thompson, S.C., & Stoutemyer, K. (1991). Water use as a commons dilemma: The effects of education that focuses on long-term consequences and individual action. *Environment and Behavior*, Vol. 23, No.3: 314-333.
- Tian, X., Geng, Y., Dong, H., Dong, L., Fujita, T., Wang, Y., ..., & Sun, L. (2016). Regional household carbon footprint in China: A case of Liaoning Province. *Journal of Cleaner Production*, Vol.114: 401-411.
- Tilikidou, I., & Delistavrou, A. (2008). Types and influential factors of consumers' non-purchasing ecological behaviors. *Business Strategy and the Environment*, Vol. 17, No. 1: 61-76.
- Timperley, H.S. (2005): Distributed leadership: Developing theory from practice. *Journal of Curriculum Studies*, Vol. 37, No. 4: 395-420.

- Tolbert, C.J., Mossberger, K., & McNeal, R. (2008). Institutions, policy innovation, and e-government in the American states. *Public Administration Review*, Vol. 68, No. 3: 549-563.
- Townsend, A. (2015). Leading school networks hybrid leadership in action. *Educational Management Administration Leadership*, Vol. 43, No. 5: 719-737.
- Tudor, T., Barr, S., & Gilg, A. (2007a). Strategies for improving recycling behaviour within the Cornwall National Health Service (NHS) in the UK. *Waste Management & Research*, Vol. 25, No. 6: 510-516.
- Tudor, T., Barr, S., & Gilg, A. (2007b). A tale of two locational settings: Is there a link between pro-environmental behaviour at work and at home? *Local Environment: The International Journal of Justice and Sustainability*, Vol. 12, No 4: 409-421.
- Tveden-Nyborg, S., Misfeldt, M., & Boelt, B. (2013). Diffusing scientific knowledge to innovative experts. *Journal of Science Communication*, Vol. 12, No. 1: 1-23.
- United Nation Environment Programme (UNEP) and United Nation Educational, Scientific and Cultural Organization (UNESCO) (2001). Is the future yours? Research project on youth and sustainable consumption. *UNEP/UNESCO*, Paris.
- Unsworth, K.L., Dmitrieva, A., & Adriasola, E. (2013). Changing behaviour: Increasing the effectiveness of workplace interventions in creating pro-environmental behaviour change. *Journal of Organizational Behavior*, Vol. 34, No. 2: 211-229.
- Urban, F., & Nordensvard, J. (2013). *Low carbon development: Key issues*. (Vol. 1). New York: Routledge.
- Valente, T.W., & Davis, R.L. (1999). Accelerating the diffusion of innovations using opinion leaders. *The Annals of the American Academy*, Vol. 566, No. 1: 55-67.
- Valente, T.W., Hoffman, B.R., Ritt-Olson, A., Lichtman, K., & Johnson, C.A. (2003). Effects of a social-network method for group assignment strategies on peer-led tobacco prevention programs in schools. *American Journal of Public Health*, Vol. 93, No. 11: 1837-1843.
- Vandenbergh, M.P., Barkenbus, J., & Gilligan, J. (2008). Individual carbon emissions: The low-hanging fruit. *UCLA Law Review*, Vol. 55: 1701-1758.

- Van der Linden, S. Maibach, E., & Leiserowitz, A. (2015). Improving public engagement with climate change five “best practice” insights from psychological science. *Perspectives on Psychological Science*, Vol. 10, No. 6: 758-763.
- Van Lange, P.A., & Joireman, J.A. (2008). How we can promote behavior that serves all of us in the future. *Social Issues and Policy Review*, Vol. 2, No.1: 127-157.
- Van Zomeren, M., Postmes, T., & Spears, R. (2008). Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychological Bulletin*, Vol. 134, No. 4: 503-535.
- Venkatraman, M.P. (1989). Opinion leaders, adopters, and communication adopters: A role analysis. *Psychology & Marketing*, Vol. 6, No. 1: 51-68.
- Venkatraman, M.P. (1991). The impact of innovativeness and innovation type on adoption. *Journal of Retailing*, Vol. 67, No. 1: 51-67.
- Venkatesh, V., & Davis, F.D. (2000a). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, Vol. 46, No. 2: 186-204.
- Venkatesh, V., & Morris, M.G. (2000b). Why don't men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. *Management Information Systems Quarterly*, Vol. 24, No. 1: 115-139.
- Venkatesh, V., Morris, M.G., Davis, G.B., & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, Vol. 27, No. 3: 425-478.
- Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *Management Information Systems Quarterly*, Vol. 36, No. 1: 157-178.
- Vernette, E. (2004). Targeting women's clothing fashion opinion leaders in media planning: An application for magazines. *Journal of Advertising Research*, Vol. 44, No.1: 90-107.
- Vining, J., & Ebreo, A. (1990). What makes a recycler? A comparison of recyclers and non-recyclers. *Environment and Behavior*, Vol. 22, No. 1: 55-73.
- Vining, J., & Ebreo, A. (1992). Predicting recycling behavior from global and specific environmental attitudes and changes in recycling opportunities. *Journal of Applied Social Psychology*, Vol. 22, No. 20: 1580-1607.

- Von Borgstede, C., Andersson, M., & Johnsson, F. (2013). Public attitudes to climate change and carbon mitigation: Implications for energy-associated behaviours. *Energy Policy*, Vol. 57: 182-193.
- Waite, R. (2013). *Household waste recycling*. London, UK: Routledge.
- Walker, G. (2011). The role for community in governance. *Wiley Interdisciplinary Reviews: Climate Change*, Vol. 2, No. 5: 777-782.
- Wahat, N. W. A., Nasir, R., & Omar, F. (2008). Shaping the right fit perceptions of academe newcomers. *European Journal of Social Sciences*, Vol. 6, No. 2: 188-199.
- Wahlstrom, K.L., & Louis, K.S. (2008). How teachers experience principal leadership: The roles of professional community, trust, efficacy, and shared responsibility. *Educational Administration Quarterly*, Vol. 44, No. 4: 458-495.
- Welsch, H., & Kuhling, J. (2009). Determinants of pro-environmental consumption: The role of reference groups and routine behavior. *Ecological Economics*, Vol. 69, No. 1: 166-176.
- Wenger, E. (1998). Communities of Practice. Learning as a social system. *Systems Thinker*. Available online: <http://www.co-i-l.com/coil/knowledge-garden/cop/lss.shtml>.
- Wengraf, T. (2001). *Qualitative research interviewing: Biographic narrative and semi-structured methods*. London: Sage Publications.
- Werner, P. (2004). Reasoned action and planned behaviour. In S.J. Peterson and T.S. Bredow (Eds.), *Middle Range Theories: Application to Nursing Research*. Philadelphia, USA: Lippincott, Williams and Wilkins.
- West, R. (2005). Time for a change: Putting the transtheoretical (stages of change) model to rest. *Addiction*, Vol. 100, No. 8: 1036-1039.
- Wethington, E., & McDarby, M.L. (2016). Interview methods (structured, semistructured, unstructured). *The Encyclopedia of Adulthood and Aging*: 1-5.
- Whitelegg, J., & Haq, G. (2003). *The global transport problem: Same issues but a different place*. London: Earthscan.
- Whitmarsh, L. (2011). Scepticism and uncertainty about climate change: Dimensions, determinants and change over time. *Global Environmental Change*, Vol. 21, No. 2: 690-700.

- Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of Environmental Psychology*, Vol. 30, No. 3: 305-314.
- Whitmarsh L., O'Neill, S., Seyfang, G., & Lorenzoni, I. (2009). Carbon capability: What does it mean, how prevalent is it, and how can we promote it? Tyndall Working Paper, No. 132. www.tyndall.ac.uk.
- Whittington Davis, M. (2009). *Distributed leadership and school performance*. Ph.D. Thesis. George Washington University, Washington DC.
- Wilhite, H., Shove, E., Lutzenhiser, L., & Kempton, W. (2000). The legacy of twenty years of energy demand management: We know more about individual behavior but next to nothing about demand. In E., Jochem, J., Sathaye, D., Bouille (Eds), *Society, Behaviour and Climate Change Mitigation*, London: Kluwer Academic Publishers.
- Wilson, G.T., & Schlam, T.R. (2004). The transtheoretical model and motivational interviewing in the treatment of eating and weight disorders. *Clinical Psychology Review*, Vol. 24, No. 3: 361-378.
- Winter, S., & Neubaum, G. (2016). Examining characteristics of opinion leaders in social media: A motivational approach. *Social Media+ Society*, Vol. 2, No. 3.
- Wong L.P. (2008). Focus group discussion: A tool for health and medical research. *Singapore Medical Journal*, Vol. 49, No. 3: 256-261.
- Wong, T.K.Y., & Wan, S.P. (2008). Environmental awareness and behaviour in Hong Kong: A decade of development. In *TASPPA Partnership with the International Conference on Sustainable Development*. <http://web.thu.edu.tw/g96540022/www/taspaa/essay/pdf>
- Woods, P.A., Bennett, N., Harvey, J.A., & Wise, C. (2004). Variabilities and dualities in distributed leadership: Findings from a systematic literature review. *Educational Management Administration and Leadership*, Vol. 32: 439-455.
- Wood, S.L., & Moreau, C.P. (2006). From fear to loathing? How emotion influences the evaluation and early use of innovations. *Journal of Marketing*, Vol. 70, No 3: 44-57.
- Yoshikawa, N., Fujiwara, N., Nagata, J., & Amano, K. (2016). Greenhouse gases reduction potential; through consumer's behavioural changes in terms of food-related product selection. *Applied Energy*, Vol. 162: 1564-1570.
- Yiridoe, E.K., Bonti-Ankomah, S., & Martin, R.C. (2005). Comparison of consumer perceptions and preference toward organic versus conventionally produced

foods: a review and update of the literature. *Renewable Agriculture and Food Systems*, Vol. 20, No. 4: 193–205.

Yiridoe, S.B., & Bonti-Ankomah, E.K. (2006). Organic and conventional food: A literature review of the economics of consumer perceptions and preferences. *Organic Agriculture Centre of Canada*, Vol. 59: 1-40.

Yu, C.H. (2003). Misconceived relationships between logical positivism and quantitative research. *Research Method Forum [On-line]*, Vol. 2, No. 2004: 1-39.

Yukl, G. (2008). How leaders influence organizational effectiveness. *The Leadership Quarterly*, Vol 19, No 6: 708-722.

Zacarias-Farah, A., & Geyer-Allély, E. (2003). Household consumption patterns in OECD countries: Trends and figures. *Journal of Cleaner Production*, Vol. 11, No. 8: 819-827.

Zaltman, G., Duncan, R., & Holbek, J. (1973). *Innovations and organizations*. New York: Wiley.

Zaman, B., & Sedera, D. (2016). Green information technology as administrative innovation-organizational factors for successful implementation: Literature Review. *Australasian Conference on Information Systems*. Queensland University of Technology, Adelaide, Australia.

Zammuto, R.F. (2005). *Does who you ask matter? Hierarchical subcultures and organizational culture assessments*. The Business School, University of Colorado, USA.

Zikmund, W.G. (2003). Research methods. Available online: <http://pioneer.chula.ac.th/~ppongsa/2900600/LMRM02.pdf>