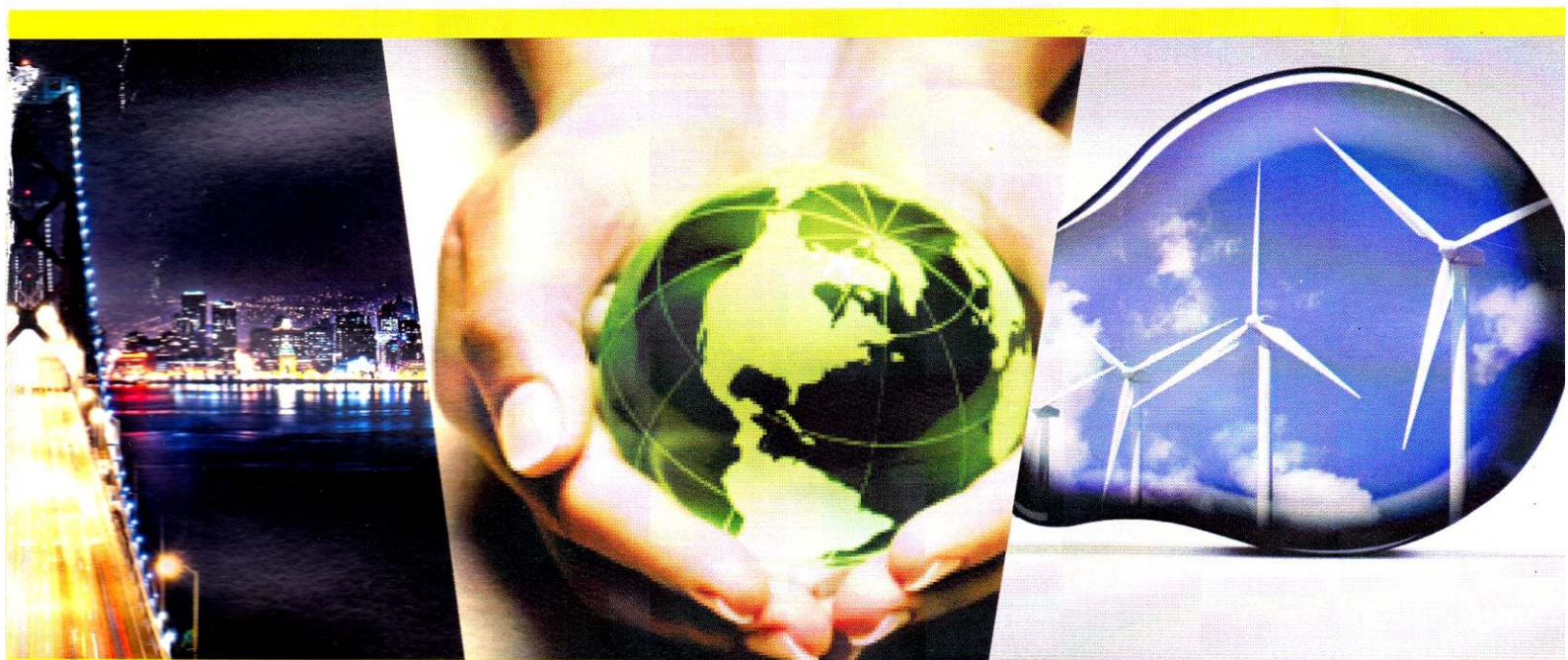




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*"Intellectual Property Right Based on
Green Social Dynamics, Business and Science-Tech"*

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*"Intellectual Property Right Based on Green Social Dynamics,
Business and Science-TechIntellectual Property Right Based on
Green Social Dynamics, Business and Science-Tech"*

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Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

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Abstract. Reverse logistics is part of green supply chain management (GrSCM). In the reverse logistics system, consumers act as suppliers in the point collection. Take back program is one type of collection phase in reverse logistics activities. This program is aimed to take back products that no longer used by the consumers, in order to avoid inappropriate disposal that can harm the environment. Consumers' behavior in returning the product to the take back program will affect the effectiveness of the reverse logistics system. Most researches on consumers' environmental behavior are focused on consumers' behavior in purchasing products not returning used products. This paper gives new insight in research of consumers's environmental behavior, by considering the reverse logistics drivers as factors influencing consumers' intention behavior. Furthermore, this paper proposes a conceptual model of consumers' behavior intention to participate in the take back program, by taking the case of cellphone take back program. This conceptual model is expected to provide contribution both to companies that implement a take back program as well as to researchers in consumers' behavior field.

Keyword: *reverse logistics, consumers' intention, conceptual model, cellphone take back program*

1 Introduction

In recent years, some companies increasingly concern to the environmental sustainability. Several factors have triggered the companies to consider the environmental problem. These factors are: raw material decreasing, environmental regulation, consumers pressure that companies have to produce green product, and management commitment (Srivastava, 2007; Fortes, 2009). Companies' environmental responsibility was consistently increase since 1992 summit at Rio de Janeiro, Brazil (Sarkis, 2006).

Green Supply Chain Management (GrSCM) is one of the companies' commitment in business management which is in line with the concept of environmental sustainability. Srivastava (2007) stated that the scope of GrSCM ranges from reactive monitoring of the general environment management programmes to more proactive practices implemented through various Rs (Reduce, Reuse, Rework, Refurbish, Reclaim, Recycle, Remanufacture, Reverse logistics, etc.).

From the above statement, note that reverse logistics (RL) is a part of GrSCM practices. There are two main reasons drive RL activities, namely: (1) regulation pressure, and (2) economic reasons (Quesada, 2003; de Brito, 2003; Akdogan, 2012; Pinna & Carrus, 2012; Bouzon et al, 2013). While de Brito (2003) and Akdogan (2012) add one more reason, that is corporate citizenship. Pinna &

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

Carrus (2012) and Bouzon et al (2013) give one more another reason that is consumers' requirements/concerns.

In a RL system, take back program is a company's program to take the products back which are no longer used by consumers. This program is implemented to prevent inappropriate product disposal to the environment. Take back program is usually applied to some products such as drugs, pharmacy, electronic or certain household products.

One of the companies which develop take back program is cellphone company. It is applied because cellphone contains hazardous materials for the environment or human's life if there is insufficient disposal (Realff et al, 2004; Schwarzer et al, 2005; Joseph, 2007; Chartterjee & Kumar, 2009; Chi et al, 2011) such as lead, cadmium, mercury, chrome hexavalent and flame retardant materials.

Consumers act as suppliers in take back program. Consumers' behavior in participating in take back program will influence take back program's effectiveness and entire RL system.

Researches in consumers' environmental behavior are mostly focused on consumers' behavior in purchasing product not returning the used product. Whereas, by understanding consumers' behavior in returning the products through take back program will make company runs the program effectively based on the characters of end user.

In the case of cellphone take back program, there are some factors which influence consumers to participate in the program. This paper gives new insight in research of consumers's environmental behavior, by considering the RL drivers as factors influencing consumers' intention. We consider consumers' requirements/concerns as internal factor from the consumers, while government driver and economic reason as external factors. Therefore, this paper proposes a conceptual model of consumers' intention to participate in cellphone take back program. This conceptual model is expected to give contribution either for cellphone company committing take back program or as one of literatures on consumer behavioral research.

2 Literature Review of Consumers' Environmental Behavior

Most researches focus on consumers' behavior in purchasing not in returning products. Those studies show the consumers's attitude, intention and behavior in purchasing green product, organic food or general pro-environment behavior. Meanwhile, researches of consumers' behavior related to used or EOL (end of life) products focus on recycling, reduce, reuse, and post consumption disposal.

The researches on consumers' behavior in purchasing general green product were done such as by Leonidou et al (2010), Sinnappan & Rahman (2011), Gadenne et al (2011), and Wahid et al (2011). Example include green electronic product (Qader & Zainuddin, 2010; Qader & Zainuddin, 2011(a); Qader & Zainuddin, 2011(b)), residence housing energy saving investment (Wenshun et al, 2011), environmental conscious purchasing (Arslan et al, 2012), green energy brand (Hartmann & Apaolaza-Ibanez, 2012), green electric program (Clark et al, 2003), green product consumption (Hartmann & Apaolaza-Ibanez, 2008), and general

green product with special consumers: undergraduate students (Irawan & Darmayanti, 2010), postgraduate students (Kumar, 2012), member of NGO (Mei et al, 2012).

Meanwhile, the consumers behavioral studies in purchasing organic food were done by Wall (1995), Lea & Worsley (2008), Alibabic et al (2011), Voon et al (2011), Alibabic et al (2012), Pino et al (2012), Avitia et al (2012), and Zhu et al (2013). While Gatersleben et al (2002), Cleveland et al (2005), Leonidou et al (2010), and Miao & Wei (2013) committed study on consumers' general pro-environment behavior.

The studies on consumers' behavior related to used or EOL products focus on recycling were done such as by Wall (1995), Bratt (1999), Chen & Tung (2010), and Miao & Wei (2013), reduce and reuse activity (Miao & Wei, 2013), and post consumption disposal (van Birgelen et al, 2009).

Best of our knowledge, there is no specific study of consumers' behavior in take back program. Therefore, the further study about that problem is still needed. By understanding the consumers' behavior in take back program will help company to run take back program which is suitable for the characters of end user.

3 Conceptual Model Development

The consumers' behavior in take back program will influence the performance of RL. Hazen et al (2012) stated that one of key components of RL disposition decision is consumers' behavior. Consumers' behavior is defined as an action taken by a consumer which affects company's RL activity. These behaviors are such as the request to reuse, recycle or remanufacture, and the consumers' willingness to return either used or unused product to supplies chain.

Behavior intention is an expectation where someone wants to do a certain action or behavior. A consumer who intends to do certain behavior cannot be considered as behaving. In Sommer (2011), it is stated that the intention represents the motivation of an individual's conscious plan to exert effort to perform the behavior. While Ajzen (2002, p. 107) stated that intention could be understood as an immediate antecedent to behavior.

The following section will highlight the detail overview of the factors that influence customers' intention to participate in cellphone take back program, based on RL drivers.

3.1 Environmental Attitude

Consumer attitudes is a lasting, general evaluation of people (including oneself), objects or issues (Solomon et al, 2006). An attitude is lasting because it tends to endure over time. It is general because it applies to more than a momentary event. While, Ajzen (2006) defined attitude toward a behavior is as a person's overall evaluation of performing the behavior in question. In other way, Pinkens (2005) said that attitudes help us define how we see situations, as well as define how we behave toward the situation or object.

When attitude is associated to environment, Banerjee & McKeage (1994) and Schlegelmilch et al (1996) stated that consumers who adopt an eco-friendly

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

attitude believe that the ecological situation on the planet is deteriorating and, therefore, it is necessary to take drastic measures toward protecting the environment.

Many writers have defined environmental attitude, though using different sentences but they contain the same meaning. As Schultz et al (2004) who stated that environmental attitudes refers to the collection of beliefs, affect, and behavioral intentions a person holds regarding environmentally related activities or issues. Lee (2008) defined environmental attitude as the individuals' value judgment of environmental protection which taps on the individuals' cognitive assessment of the value of the environmental protection. Rashid (2009) defined environmental attitude as "a learned predisposition to respond consistently favorable or unfavorable manner with respect to the environment". While Milfont & Duckitt (2010) stated that environmental attitude is defined as a psychological tendency expressed by evaluating the natural environment with some degree of favor or disfavor.

It is known that, attitude is one of intention determinants in behaving. There were a lot of researches described the relation between environmental attitude with behaving intention such as Hwang et al (2000); Tamas et al (2005); Mosler et al (2008); Rashid (2009); Qader & Zainuddin (2010); Cordano et al (2010); Kumar (2012); Ativia et al (2012); dan Mei et al (2012). Therefore, it could be said that consumers' environmental attitude will influence the intention to participating in cellphone take back program.

3.2 Environmental Value

The values owned or believed by someone will influence someone's attitude to something. Those values will guide someone so that show positive or negative attitude which depends on value internalized in him/her.

Environmental value in Qi-Yan & Yan-Li (2011) is said as one of steps in environmental literacy. It is explained that by learning the knowledge about the environment, people internalize it as their environmental values and attitudes, and then use them to guide their actions.

Environmental value problems have been studied widely and there are many different terms which are: (1) environmental worldviews, (2) ecological values, (3) environmental concern, (4) environmental beliefs, (5) general environmental attitudes, (6) global environmental attitude, or only (7) environmental attitudes (Boeve-de Pauw & Van Petegem, 2013).

In this paper, it used environmental value term to describe environmental values which are understood by consumers which will influence them in having environmental attitude.

3.3 Deontology

From theoretical side, Powers (2005) mentioned that deontology refers to a general category of ethical or moral theories that define right action in terms of duties and moral rules. Deontologists focus on the rightness of an act and not on what results from the act. Therefore, according to Leonidou et al (2010), deontology can be used as one of paramaters to describe the consumers'

background, especially ethics-related background. According to Chan et al (2008) deontology is ethos approach which focuses on whether intention and/or consequence of an action is right or wrong.

Therefore when deontology approach is associated to environmental ethics, García-Rosell & Moisander (2008) mentioned that these rules and duties are based on the intrinsic value of the environment. It is taken that the environment has a moral right to respectful treatment, and this generates a moral duty to humans to protect it. In other words, we have a *prima facie* duty not to harm it.

From the explanation above, it can be said that deontology can influence consumers's environmental attitude.

3.4 Law obedience

Someone's obedience to law, regulation or other rules will prevent him/her to act opposing the law. In Gaski (1999), law obedience is defined as the extent to which an individual respects the laws of his/her country. While, in Leonidou et al (2010), law obedience is described as a part of ethic factors besides deontology.

Likewise when law obedience is associated to environmental law, Gaski (1999) mentioned that law obedient person is expected to respect environmental laws, is willing to make personal sacrifices to preserve the environment, and positively influences his/her relatives and friends to become environmentally-friendly. Further, Leonidou et al (2010) mentioned that a law obedient person will avoid to be gathered with others who do not respect to the environment, likewise avoid organization which does not fulfill environment standard in production process, business policy and final product.

So that, it can be said that law obedience has positive influence to consumers' environmental attitude.

3.5 Self efficacy

Mostly, the definition of self efficacy is given by Bandura (1977) that self efficacy refers to a person's belief in his/her capability to perform a task. Bandura (1982) also mentioned that perceived self efficacy is concerned with judgement of how well one can execute courses of action required to deal with prospective situations.

While Wood & Bandura (1989) expanded this definition by adding that self-efficacy "refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet situational demands". Therefore, Bandura (1993) stated that efficacy beliefs influence how people feel, think, motivate themselves, and behave.

While Ghasembohlani & Hashim (2013) emphasized that self efficacy is a motivational construct based on self perception of competence rather than actual level of competence. Actions and behaviors are better predicted by beliefs rather than actual accomplishments

By using those concepts, it means that someone who has high self efficacy will perceive him/herself to be able to have high competence when he/she is faced by certain situation. If self efficacy is associated to competence related to

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

environment, someone with high self efficacy will be able to give kind environmental behavior. So that self efficacy will give positive influence to consumers' environmental attitude.

3.6 Government Driver

Government driver in this paper is like government initiative factor which is used in research of Mei et al (2012) or government role in Sinnappan & Rahman (2011), or government policies/subsidies in Gadenne et al (2011), or government's direction in Yee & Hooi (2011). Referring to Mei et al (2012), governments should initiate and promote sustainable events to the community to bring about sustainability awareness to the people.

In this case, the government policy which supports cellphone take back program, it is expected to be able to encourage society to be ready to participate in cellphone take back program. By doing so, government driver will give positive influence to the consumers' intention to participate in cellphone take back program.

3.7 Perceived Environmental Legislation

One of the ways to protect the environment from any kinds of destruction is by implementing regulation of living environment. Like what is stated by McManus (2009) in Ribeiro & Kruglianskas (2013), to minimize environmental impacts and restore environmental quality, governments all over the world have been imposing responsibilities and limitations on the behaviors of individuals, corporations, and other entities, which we will refer to as "environmental regulation". Germani (2004) stated that laws and regulations play an increasingly significant role in the determination of particular environmental issues and the development of the appropriate policies.

A good environmental regulation is addressed to protect the environment and it should also be done efficiently. Lange & Gouldson (2010) emphasized that environmental regulation should not only protect the environment effectively but also be applied efficiently, equitably, and thus, in ways that are politically, economically and socially acceptable

As what mentioned in Kalantari et al (2007) that environmental legislation is an important factor which influence environmental behavior. Therefore, related to this paper, it is expected that by the understanding of environmental regulation will indirectly be able to influence consumers' intention to participate in cellphone take back program. In this case, government driver is mediating variable between perceived environmental regulation and used cellphone return intention.

3.8 Economic driver

In cellphone take back program, for environmental preservation, economical incentive can actually be used as one of attractions for consumers to participate in the program. Like what is mentioned in Babcock (2009) that the goal of giving someone an economic incentive to engage in good environmental behaviour. In

fact, economic incentives may be more effective than education, other forms of persuasion, or feedback in changing behaviour. Moreover, Shogren (2012) mentioned that monetary incentives may ‘crowd out’ some people’s willingness to protect the environment.

In this case, economical insentive as economic driver is got by consumer when selling his/her cellphone which has no longer used in second hand market. Meanwhile, when consumer returns his/her used cellphone through official take back program from cellphone producer, consumer does not get direct economic insentive.

In this case, economic driver which is considered comes from outside take back system or can be said coming from second hand market. Based on the studies of Chatterjee & Kumar (2009), Chi et al (2011) and Li et al (2011), this condition evolves in area or country which neither implement take back regulation nor have e-waste recycling regulation.

Thus, it can be said that economic driver (from second hand market) will inhibit consumers to participate in official cellphone take back program. It means that consumers will choose to sell their used cellphone, so they get the economical benefit directly.

4 Conceptual Model dan Hypotheses

Based on literature review of conceptual model development, therefore the conceptual model of consumers’ intention to participate in cellphone take back program can be seen in Figure 1.

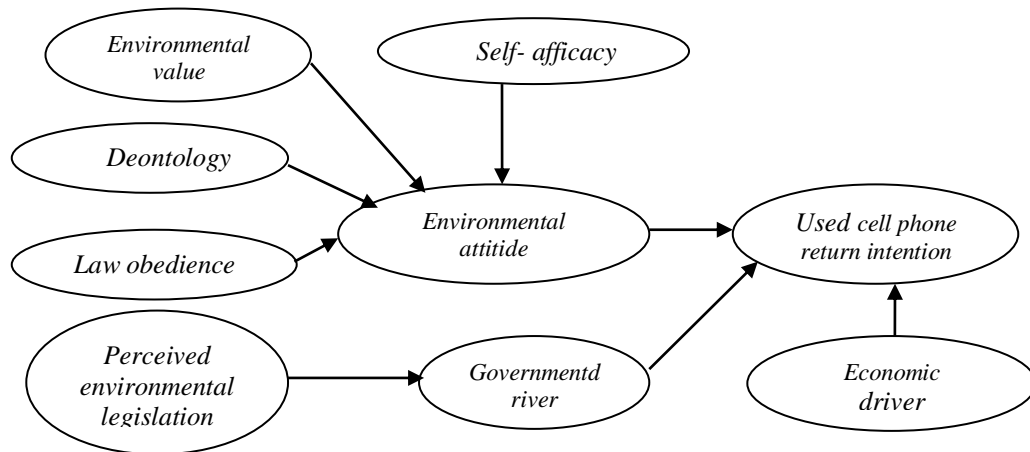


Figure 1. Conceptual Model of Consumers’ Intention to Participate in Used Cellphone Take Back Program

Furthermore, the proposed hypopheses as follow:

H1: Environmental attitude gives positive influence to used cellphone return intention

H2: Government driver gives positive influence to used cellphone return intention.

H3: Economic driver gives negative influence to used cellphone return intention

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

H4: Environmental value gives positive influence to environmental attitude.

H5: Deontology gives positive influence to environmental attitude.

H6: Law obedience gives positive influence to environmental attitude.

H7: Self efficacy gives positive influence to environmental attitude.

H8: Perceived environmental regulation gives positive influence to government driver.

5 Practical Implication

The company which implements take back program needs to understand how far consumers want to involve in the program. The driver and barrier factors influence consumers in returning the product through take back program needs to be understood clearly. This proposed conceptual model offers framework which describes factors which influence consumer to participate in take back program. Thus, this conceptual model can be used as beginning reference to plan take back program which is suitable with end user's character. Like what has been mentioned by Flygansvaer et al (2008) that end user's character influences the type of RL system. Hanafi et al (2008) also stated that the population's characters in one area are difference with the population's characters in another area, so that it needs EOL product collecting strategy which is customized to realize the suitable RL system.

Although taking the case of cellphone take back program, but this conceptual model can be applied to other companies which implement take back program. Therefore, the proposed conceptual model can provide both a theoretical and managerial contribution in understanding consumers' intention to participate in take back program. Moreover, to implement this conceptual model in real cases, it needs empirical data.

6 Conclusions and Further Recommendations

The research of consumers' behavior in returning used or EOL products is still lack. This paper offers conceptual model to understand the factors influencing consumers to return their used or EOL cellphone to the take back program. This conceptual model gives new insight in description of internal or external factors which influence consumers' intention to participate in cellphone take back program, based on RL driver. This conceptual model can be used as the reference for either companies which implement take back program or the researchers of consumers' behavior field.

To apply this conceptual model in real case, it needs the empirical data of factors which are considered in model, demography data, and the data about consumers' access to the media which promote take back program. In the future, the empirical research is needed to know the relation between the considered factors, the most influencing factor to the consumers' intention, and whether there is a difference of consumers' intention based on the difference of demography background and access toward the media. Therefore, the cellphone companies which implement take back program will get the comprehensive description about

the end user's characters as the basis to implement the take back program which is suitable with the consumers.

7 References

- Ajzen, I., 2002, Residual Effects of Past on Later Behavior: Habituation and Reasoned Action Perspectives, *Personality and Social Psychology Review*, 6(2), pp. 107-122
- Ajzen, I., 2006, *Constructing a TpB Questionnaire: Conceptual and Methodological Considerations*, unpublished
- Akdoğan, MŞ., & Coşkun, A., 2012, Drivers of RLActivities: An Empirical Investigation, *Procedia - Social and Behavioral Sciences*, 58, pp. 1640 – 1649
- Alibabic, V., Jokiüb, S., Mujiüc, I., Rudiüc, D., Bajramoviüa, M., & Jukiüd, H., 2011, Attitudes, behaviors, and perception of consumers' from northwestern Bosnia and Herzegovina toward food products on the market, *Procedia Social and Behavioral Sciences*, 15, pp. 2932–2937
- Alibabic, V., Mujićb, I., Rudićb, D., Bajramovića, M., Jokićc, S., Šertović, E., & Ružnić, A., 2012, Labeling of food products on the B&H market and consumer behavior towards nutrition and health information of the product, *Procedia - Social and Behavioral Sciences*, 46, pp. 973 – 979
- Arslan, T., Yilmaz, V., & Aksoy, H. K., 2012, Value Structures Behind Pro environmental Behavior, *Int. J. Environmental Res.*, 6(1), pp. 323-334
- Avitia, J., Costa-Font, M., & Gil, JM., 2012, Structural equation modelling of consumer acceptance of organic food in Spain, *Centre for Agro-Food Economy and Development (CREDA-UPC-IRTA)*, Universitat Politècnica de Catalunya CREDA, pp. 1-36
- Babcock, HM., 2009, *Responsible Environmental Behavior, Energy Conservation, and Compact Fluorescent Bulbs: You Can Lead a Horse to Water, But Can You Make It Drink?*, Georgetown University Law Center, USA
- Bandura, A., 1977, Self-efficacy: Toward a unifying theory of behavioral change, *Psychology review*, 84(2), pp. 191–215
- Bandura, A., 1982, Self-efficacy mechanism in human agency, *American Psychologist*, 37(2), pp. 122-147.
- Bandura, A., 1993, Perceived Self-Efficacy in Cognitive Development and Functioning, *Educational Psychologist*, 28(2), pp. 117-148
- Banerjee, B., & McKeage, K., 1994, How green is my value: Exploring the relationship between environmentalism and materialism, *Advances in Consumer Research*, 21, pp. 47-52, In Allen, C.T., & John, D.R. (Eds), Association for Consumer Research.
- Boeve-de Pauw, J., & Van Petegem, P., 2013, A Cross-Cultural Study of Environmental Values and Their Effect on the Environmental Behavior of Children, *Environment and Behavior*, 45(5), pp. 551-583, Sage Publications

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

- Bouzon, M. B., Scarduelli, L. V., Arruda, B. L., Godke, A. L. M., & Rodriguez, C. M. T., 2013, RLDivers: Perspectives In A RLService Provider In Southern Brazil, *Integrating Cleaner Production Into Sustainability Strategies*, 4th International Workshop: Advances in Cleaner Production, São Paulo Brazil, May 22nd to 24th
- Bratt, C., 1999, The Impact Of Norms And Assumed Consequences On Recycling Behavior, *Environment And Behavior*, 31(5), pp. 630-656, SAGE Publications
- Chan, RYK., Wong, YH., & Leung, TKP., 2008, Applying Ethical Concepts to the Study of "Green" Consumer Behavior: An Analysis of Chinese Consumers' Intentions to Bring Their Own Shopping Bags, *Journal of Business Ethics*, 79(4), pp. 469-481
- Chatterjee, S., & Kumar, K., 2009, Effective electronic waste management and recycling process involving formal and non-formal sectors, *International Journal of Physical Sciences*, 4(13), pp. 893-905
- Chen, MF. & Tung, PJ., 2010, The Moderating Effect of Perceived Lack of Facilities on Consumers' Recycling Intentions, *Environment and Behavior*, 42(6), pp. 824 –844, SAGE Publications
- Chi, X., Porte, M.S.,Wang, MYL., & Reuter, M.A., 2011, Informal electronic waste recycling: A sector review with special focus on China, *Waste Management*, 31, pp. 731–742
- Cho, YN., Thyroff, A., Rapert, MI., Park, SY., & Lee, HJ., 2012, To be or not to be green: Exploring individualism and collectivism as antecedents of environmental behavior, *Journal of Business Research*, Article in Press
- Clark, CF., Kotchen, MJ., & Moore, MR., 2003, Internal and external influences on pro-environmental behavior: Participation in a green electricity program, *Journal of Environmental Psychology*, 23, pp. 237–246
- Cleveland, M., Kalamas, M., & Laroche, M., 2005, Shades of green: linking environmental locus of control and pro-environmental behaviors, *Journal of Consumer Marketing*, 22(4), pp. 198 – 212
- Cordano, M., Welcomer, S., Scherer, R., Pradenas, L., & Parada, V., 2010, Understanding Cultural Differences in the Antecedents of Pro-Environmental Behavior: A Comparative Analysis of Business Students in the United States and Chile, *The Journal Of Environmental Education*, 41(4), pp. 224–238
- de Brito, MP., 2003, *Managing Rlor Reversing Logistics Management?* ERIM PhD Series Research in Management, 35, ISBN 90-5892-058-6, Erasmus Research Institute of Management (ERIM), Erasmus University Rotterdam
- Flygansvaer, B.M., Gadde, L.E., & Haugland, S.A., 2008, Coordinated Action In Reverse Distribution Systems, *International Journal Of Physical Distribution & Logistics Management*, 38 (1), pp. 5-20
- Fortes, J., 2009, Green Supply Chain Management: A Literature Review, *Otago Management Graduate Review*, 7, pp. 51-62

- Gadenne, D., Sharma, B., Kerr, D., & Smith, T., 2011, The influence of consumers' environmental beliefs and attitudes on energy saving behaviours, *Energy Policy*, 39, pp.7684–7694
- García-Rosell, J.C., & Moisaner, J., 2008, Ethical Dimensions of Sustainable Marketing: A Consumer Policy Perspective, *European Advances in Consumer Research*, Vol. 8, pp. 210-215
- Gaski, J.F., 1999, Does marketing ethics really have anything to say? – A critical inventory of the literature, *Journal of Business Ethics*, 18, pp. 315-334.
- Gatersleben, B., Steg, L., & Vlek, C., 2002, Measurement and Determinants of Environmentally Significant Consumer Behavior, *Environment and Behavior*, 34(3), pp. 335-362, SAGE Publications
- Germani, A.R., 2004, Environmental Law and Economics in U.S. and E.U.: A Common Ground?, discussion paper 45, Centre for Financial and Management Studies, SOAS, University of London, Thornhaugh Street, London
- Ghasemboland, F., & Hashim, F.B., Teachers' self-efficacy beliefs and their English language proficiency: A study of nonnative EFL teachers in selected language centers, *Procedia - Social and Behavioral Sciences*, 103, pp. 890– 899
- Hanafi, J., Kara, S., & Kaebernick, H., 2008, RLStrategies For End-Of-Life Products, *The International Journal Of Logistics Management*, 19 (3), pp. 367-388
- Hartmann, P., & Apaolaza-Ibáñez, V., 2008, Virtual Nature Experiences as Emotional Benefits in Green Product Consumption: The Moderating Role of Environmental Attitudes, *Environment and Behavior*, 40(6), pp. 818-842, Sage Publications
- Hartmann, P., & Apaolaza-Ibáñez, V., 2012, Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern, *Journal of Business Research*, 65, pp. 1254–1263
- Hazen, B.T., Hall, D.J., & Hanna, J.B., 2012, RLdisposition decision-making Developing a decision framework via content analysis, *International Journal of Physical Distribution & Logistics Management*, 42 (3), pp. 244-274
- Hwang, Y.H., Kim, S.I., & Jeng, J.M., 2000, Examining the Causal Relationship among Selected Antecedents of Responsible Environmental Behavior, *The Journal of Environmental Education*, 31(4), pp. 19-25
- Irawan, R., & Darmayanti, D., 2012, The Influence Factors of Green Purchasing Behavior: A Study of University Students in Jakarta, School of Marketing, Bina Nusantara University- International, Jakarta, Indonesia
- Joseph, K., 2007, Electronic Waste Management in India-Issues and Strategies, *Proceedings Sardinia*, 11th International Waste Management and Landfill Symposium by CISA, Environmental Sanitary Engineering Centre, 1-5 October, S. Margherita di Pula, Italy
- Kalantari, K., Fami, H.S., Asadi, A., & Mohammadi, H.M., 2007, Investigating Factors Affecting Environmental Behavior of Urban Residents: A Case

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back
Program

- Study in Tehran City- Iran, *American Journal of Environmental Sciences*, 3 (2), pp. 67-74.
- Kumar, B., 2012, A Theory of Planned Behaviour Approach to Understand the Purchasing Behaviour for Environmentally Sustainable Products, *Research and Publication*, Indian Institute of Management Ahmedabad, pp. 1-43
- Lange, B., & Gouldson, A., 2010, Trust-based environmental regulation, *Science of the Total Environment*, 408, pp. 5235–5243
- Lea, E., & Worsley, A., 2008, Australian consumers' food-related environmental beliefs and behaviours, *Appetite*, 50, pp. 207–214
- Lee, K., 2008, Opportunities for green marketing: Young consumers, *Marketing Intelligent and Planning*, 26(6), pp. 573-586.
- Leonidou, LC., Leonidou, CN., & Kvasova, O., 2010, Antecedents and outcomes of consumer environmentally-friendly attitudes and behaviour, *Journal of Marketing Management (Special Issue of the Academy of Marketing Conference) Submitted 21-7-2010; Revised 04-09-2010*
- Li., B., Du, H.Z., Ding, H.J., & Shi, M.Y., 2011, E-Waste Recycling and Related Social Issues in China, *Energy Procedia*, 5, pp. 2527–2531
- Mei, OJ., Ling, KC., & Piew, TH., 2012, The Antecedents of Green Purchase Intention among Malaysian Consumers, *Asian Social Science*, 8 (13), pp. 248-263
- Miao, L., & Wei, W., 2013, Consumers' pro-environmental behavior and the underlying motivations: comparison between household and hotel settings, *International Journal of Hospitality Management*, 32, pp. 102–112
- Milfont, T. L., & Duckitt, J., 2010, The environmental attitudes inventory: A valid and reliable measure to assess the structure of environmental attitudes, *Journal of Environmental Psychology*, 30, 80–94.
- Mosler, HJ., Tamas, A., Tobias, R., Rodríguez, TC., & Miranda, OG., 2008, Deriving Interventions on the Basis of Factors Influencing Behavioral Intentions for Waste Recycling, Composting, and Reuse in Cuba , *Environment and Behavior*, 40(4), pp.522-544, Sage Publications
- Pickens, J., 2005, Attitudes and Perceptions (Chapter 3, p.44), *Organizational Behavior in Health Care*, Borkowski, N., Jones and Bartlett Publishers, Sudbury, Massachusetts, USA
- Pinna, R. & Carrus, PP., 2012, RLand the Role of Fourth Party Logistics Provider, *Pathways to Supply Chain Excellence*, Dr. Ales Groznik (Ed.), ISBN: 978-953-51-0367-7, InTech
- Pino, G., Peluso, Am., & Guido, G., 2012, Determinants of Regular and Occasional Consumers' Intentions to Buy Organic Food, *The Journal of Consumer Affairs*, 46(1), pp. 157–169
- Powers, TM., 2005, The Encyclopedia of Science, Technology, and Ethics, Mitcham, C. (ed), Vol.2 D-K, p.496, Gale Group Publishing, USA
- Qader, IKA., & Zainuddin, Y., 2010, Intention to Purchase Green Electronic Products: The Consequences of Perceived Government Legislation, Media Exposure and Safety & Health Concern and the Role of Attitude

- as Mediator, *International Journal of Innovation, Management and Technology*, 1(4), pp. 432-440
- Qader, IKA., & Zainuddin, Y., 2011(a), The Impact of Media Exposure on Intention to Purchase Green Electronic Products amongst Lecturers, *International Journal of Business and Management*, 6(3), pp. 240-248
- Qader, IKA., & Zainuddin, Y., 2011(b), The Influence Of Media Exposure, Safety And Health Concerns, And Self-Efficacy On Environmental Attitudes Towards Electronic Green Products, *Asian Academy of Management Journal*, 16 (2), pp. 167–186
- Qi-yan, W., & Yan-li, L., 2011, Research on Status and Influence Factors of Citizen's Environmental Behaviors in Beijing, *Energy Procedia*, 5, pp. 2103–2107
- Quesada, IF., 2003, *The Concept Of Reverse Logistics. A Review Of Literature*, Annual Conference for Nordic Researchers in Logistics, NOFOMA'03, Oulu, Finlandia
- Rashid, N.R.N.A., 2009, Awareness of eco-label in Malaysia's green marketing initiative, *International Journal of Business and Management*, 4(8), pp.132-141.
- Realff, MJ., Raymond, M., & Ammons, JC., 2004, E-waste: an opportunity, *Materials today*, January, ISSN: 1369 7021
- Ribeiro, FM., & Kruglianskas, I., 2013, Improving environmental permitting through performance-based regulation: a case study of Sao Paulo State, Brazil, *Journal of Cleaner Production*, 46, pp. 15-26
- Sarkis, J (Ed), 2006, Greening the Supply Chain, *Springer-Verlag*, London
- Schlegelmilch, B.B., Bohlen, G.M., & Diamantopoulos, A, 1996, The link between green purchasing decisions and measures of environmental consciousness, *European Journal of Marketing*, 30, pp. 35-55.
- Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A. M., 2004, Implicit connections with nature, *Journal of Environmental Psychology*, 24, 31–42.
- Schwarzer, S., De Bono, A., Giuliani, G., Kluser, S., & Peduzzi, P., 2005, *E-waste, the hidden side of IT equipment's manufacturing and use*, GRID Europe, UNEP
- Shogren, J. (2012), Behavioural Economics and Environmental Incentives, *OECD Environment Working Papers*, No. 49, OECD Publishing. <http://dx.doi.org/10.1787/5k8zwbhqs1xn-en>
- Sinnappan, P., & Rahman, AA., 2011, Antecedents of Green Purchasing Behavior among Malaysian Consumers, *International Business Management*, 5(3), pp. 129-139
- Solomon, M., Bamossy, G., Askegaard, S., & Hogg, M., 2006, *Consumer behavior: A European perspective*, (3rd Edition), p. 138, Essex: Pearson Education Limited, UK
- Sommer, L., 2011, The Theory Of Planned Behaviour And The Impact Of Past Behaviour, *International Business & Economics Research Journal*, 10(1), pp. 91-110

Conceptual Model of Consumers' Intention to Participate in Cellphone Take Back Program

- Srivastava, SK, 2007, Green Supply Chain Management: A state-of-the-art Literature Review, *International Journal of Management Reviews*, 9(1), pp. 53-80
- Tamas, A., Mosler, HJ., Tobias, R., Rodríguez, TC., & Miranda, OG., 2005, Factors Determining The Intentions To Reuse, Separate And Compost Household Waste In The City Of Santiago De Cuba, *Waste-The Social Context*, 11-14 Mei 2005, Edmonton, Alberta, Canada
- van Birgelen, M., Semeijn, J., & Keicher. M., 2009, Packaging and Proenvironmental Consumption Behavior: Investigating Purchase and Disposal Decisions for Beverages, *Environment and Behavior*, 41(1), pp. 125-146, SAGE Publications
- Voon, JP., Nguib, KS., & Agrawalc, A., 2011, Determinants of Willingness to Purchase Organic Food: An Exploratory Study Using Structural Equation Modeling, *The Journal of Consumer Affairs*, 4 (2), pp. 157-169
- Wahid, NA., Rahbar, E., & Shyan, TS, 2011, Factors influencing the Green Purchase Behavior of Penang Environmental Volunteers, *International Business Management*, 5(1), pp. 38-49
- Wall, G., 1995, Barriers to Individual Environmental Action: The Influence of Attitudes and Social Experiences, *Canadin Review of Sociology and Anthropology*, 32(40), pp. 465-490
- Wenshun, W., Xiaohua, L., & Hualong, L., 2011, Empirical Research of the Environmental Responsibility Affected on the Urban Residential Housing Energy Saving Investment Behavior, *Energy Procedia*, 5, pp. 991-997
- Wood, R., & Bandura, A., 1989, Impact of Conceptions of Ability on Self-Regulatory Mechanisms and Complex Decision Making, *Journal of Personality and Social Psychology*, 56(3), pp. 407-415
- Yee, ASL., & Hooi, KK., 2011, Consumer Decision-Making Behavior Critical Factors: An Exploratory Study, *Proceeding International Conference On Management (ICM)*, pp. 363-373
- Zhu, Q., et al, 2013, Green food consumption intention, behaviors and influencing factors among Chinese consumers, *Food Quality and Preference*, 28, pp. 279-286