

November 2021

GREEN PURCHASE DETERMINANTS BASED ON INTERPRETIVE STRUCTURAL MODELING: CASE OF IRAN'S GREEN MARKETING

Mahmoud Dehghan Nayeri

Industrial Management Department, Tarbiat Modares University Tehran, Iran, mdnayeri@modares.ac.ir

Mohammad Moradi

Business Management Department, Allameh Tabataba'e University, Tehran, Iran, Moradi_m@atu.ac.ir

Follow this and additional works at: <https://scholarhub.ui.ac.id/amj>



Part of the [Marketing Commons](#)

Recommended Citation

Nayeri, Mahmoud Dehghan and Moradi, Mohammad (2021) "GREEN PURCHASE DETERMINANTS BASED ON INTERPRETIVE STRUCTURAL MODELING: CASE OF IRAN'S GREEN MARKETING," *ASEAN Marketing Journal*: Vol. 11 : No. 1 , Article 1.

DOI: 10.21002/amj.v11i1.11479

Available at: <https://scholarhub.ui.ac.id/amj/vol11/iss1/1>

This Research Article is brought to you for free and open access by UI Scholars Hub. It has been accepted for inclusion in ASEAN Marketing Journal by an authorized editor of UI Scholars Hub.

GREEN PURCHASE DETERMINANTS BASED ON INTERPRETIVE STRUCTURAL MODELING: CASE OF IRAN'S GREEN MARKETING

Mahmoud Dehghan Nayeri
Industrial Management Department, Tarbiat Modares University
Tehran, Iran.
Mdnayeri@modares.ac.ir

Mohammad Moradi
Business Management Department, Allameh Tabataba'e University
Tehran, Iran.
Moradi_m@atu.ac.ir

ABSTRACT

Manuscript type: *Research paper*

Research Aims: *This paper aims to clarify the relationship between the green purchase behavior's affecting factors as well as organizing them depending upon their driving and dependence power which ultimately leads to an ISM-based structural model.*

Design/methodology/approach: *Thorough literature review and subsequent discussions with experts, antecedent factors of green purchase behavior are extracted, which are followed by ISM structural modeling.*

Research Findings: *Interpretive structural modeling, justified a five-layer structure in which the role of government, social influence, and reference power are the cornerstones of green purchase behavior in Iran's green market.*

Theoretical Contribution/Originality: *As the general rule of all affecting factors in stimulating green purchase behavior of customers, this is a rare study which investigates and provides insights to clarify the exact role of the factors in the field, including driving, linkage, autonomous and dependent variables.*

Practitioner/Policy Implication: *Scrutinizing the motivators of green purchasing behavior and their interrelationships would help professionals as well as scholars to understand its determinants, which will lead to more insightful decisions. Further, this understanding may be useful in shaping green marketing policies and strategies for Iranian and the other green product firms all around the world.*

Research limitation/Implications: *the limitation of this study was twofold: first, as purchasing green products is not isolated from cultural context, this study has been conducted in a green purchase cultural context which is in developing phase; Second, reaching to academia experts was another limitation of the study as there has been a lack of in-depth study in this field by Iranian academics.*

Keywords: *Green purchase behavior, Determinants, ISM, MICMAC analysis.*

INTRODUCTION

Environmental conservation and environmental consciousness in consumer behavior have been increased due to awareness of the demolition of natural resources which stem from human activities (P. Kumar & Ghodeswar, 2015). In the public's view, the environmental destruction resulting from excessive consumption and usage of natural resources from the consumers is a lateral concern (Mei, Choon Ling, & Kay Hooi, 2012). Citizens, companies and institutions attentions from all around the globe have been attracted by today's environmental problems. International research has illustrated that customers are more worried about environmental shifts than they were in the past and have altered their behaviors. (Hessami & Yousefi, 2013). Consumers of the modern world have started to recognize that their buying behavior is able to generate an enormous influence on the environment (Wahid, Rahbar, & Shyan, 2011). Present people owe to the future for care and cleaning of the environment they have borrowed. Due to the vast contamination in the environment and its hazardous impacts on well-being, consumers are changing to be more cautious in choosing products (Abid Saleem, Ali Khan, & Alam, 2015). A substantial increase in the number of goods marketed as environmentally friendly has been caused by raising concerns for the natural environment at ostensibly all levels of society (Jansson, Marell, & Nordlund, 2010). Over time, consumers' priorities have changed. In today's world, people are more aware of the environmental matters, some may have unfavorable perceptions against environmentally friendly products and there is less tendency to spend more on eco-friendly goods (Nizam, Rajiani, Mansor, & Hoshino, 2014).

However, an increasing quantity of evidence illustrates that consumers are selecting products or refrain to buy others based on their effects on the natural environment. The green section of the population has been targeted by marketers, as the result of the ascending number of green consumers (Siringi, 2012). Green purchase behavior refers to purchasing environ-

mentally friendly products and also referred to as "green products" or "sustainable products." A green product is commonly recognized as a product that is innocuous to environmental factors, namely air, soil, or water and will not negatively influence public's well-being and safety, green products are illustrated by other researchers as products that do not take part in the earth's contamination or exhaustion of natural resources and is recyclable (Almossawi, 2014). The term "green product" is vastly applied in order for clarification of goods that integrate environmental requirements within the initial design process, including raw materials minimization and energy depletion, waste generation, health and safety risk, and ecological decadence (Widodo, Rubiyanti, & Nandary, 2015). There is a worldwide increasing trend in green consumerism and green marketing. Although this trend is perhaps commonplace in Western countries, Asian countries have just started to step in this field. Recently, conservation of the environment has appeared as an underlying subject for societies, governments, in addition to business organization (L. Chen, 2013). According to the enhancement in social and political pressures, green marketing strategies are embraced by plenty of companies and these environmental issues are applied as a source of competitive advantage (Mei et al., 2012). So in the business era being socially responsible through providing environmentally friendly products and services must be a function of any companies who desire to preserve a competitive advantage (Wahid et al., 2011).

Accordingly, Iranian markets are altering green products following the industrialized world, concerning the health and environment. studies have also suggested that the affinity of Iranian consumers for green products has increased over the years and hence, they are being seen as potential users of green products (Delafrooz & Moghaddam, 2017).

However, in spite of the increased environmental awareness among green consumers and encouragements made by producers for them to buy green products, further investigation is

required to increase green purchasing among different group of people (Esmailpour & Bahmiary, 2017). Since that, different cultures have different attitudes toward environmental issues and problems, and diverse factors induce consumers to behave greenly, research must be conducted to determine the features of Iranian green consumers, given the culture and specific values of Iranian citizens (Hosseini & Ziaei Bide, 2013). This leads to recent decade Iranian Scholars efforts to promote consumers green purchase behavior by doing research on its nature and boosting strategies (Dehghanan & Bakhshandeh, 2014; Sobhanifard & Balighi, 2018; Vazifehdoust, Taleghani, Esmailpour, & Nazari, 2013).

Hence, understanding green purchase behavior determinants and their structure can help companies to re-design their marketing mix and strategies, in seek of environment health, cleanliness, and protection while emphasizing on profitability and flourishing their world-class industry. Determining green purchase motivators could be a valuable source, which informs marketing strategies and tactics of companies operating especially in the green product business. Despite various studies in recognizing factors influence green purchase behavior, relationships between the influencing factors and their effects on each other have been neglected. It means no comprehensive model of these relations is accessible. Identifying and classifying the motivators of green purchase behavior that have either strong dependence or strong driving power or both strong dependence and strong driving power would help managers and business owners to make better decisions in green marketing. Therefore, the objective the present paper is to clarify, structure the relationship between the green purchase affecting factors, as well as classifying them according to their driving and dependence power, which ultimately leads to ISM determinants model. ISM could be defined as a method that can be applied to a system, for example, a network or a society to better comprehension of both direct and indirect relationships between the system's components. ISM is a well-established methodology

for recognizing the relationship between system element defining messy problems or issues (Sage, 1977).

LITERATURE REVIEW

Research on green marketing and green purchase behavior has recently become a subject of study. The review of 80 papers published from 2011 to 2017 on green purchase behavior revealed that most of the studies were conducted during the last three years (Liobikienė & Bernatienė, 2017). Prior research on green purchase intention and behavior led to different related models, which has developed as an illustration of researchers' particular perspectives including various dimensions and results. In the following some the most important and popular GPB models are discussed, especially the ones which support the present study.

Sinnappan and Rahman (2011) provided a model, which aimed to define green purchasing behavior in Malaysia. Their study, which entitled "antecedents of green purchasing behavior among Malaysian consumers", considers demographic factors as mediators in addition to independent variables. Eight antecedents of green purchasing behavior, namely: social influence, environmental attitude, environmental concern, Perceived seriousness of environmental problems, Perceived customer effectiveness, perceived environmental responsibility, concern for self-image in environmental protection and the government's role, have been developed and tested. Based on their study results as shown in figure 1, environmental attitude emerged as the most important predictor of green purchasing behavior.

Moreover, Lin and Huang (2012) offered a model to explore consumer consumption values and choice behavior regarding green products, utilizing the theory of consumption value, with the purpose of figuring out what are the significant affecting factors on the customers' choice. The theory explains behavior as influenced by functional, social, emotional, conditional, and epistemic values. This study also investigates

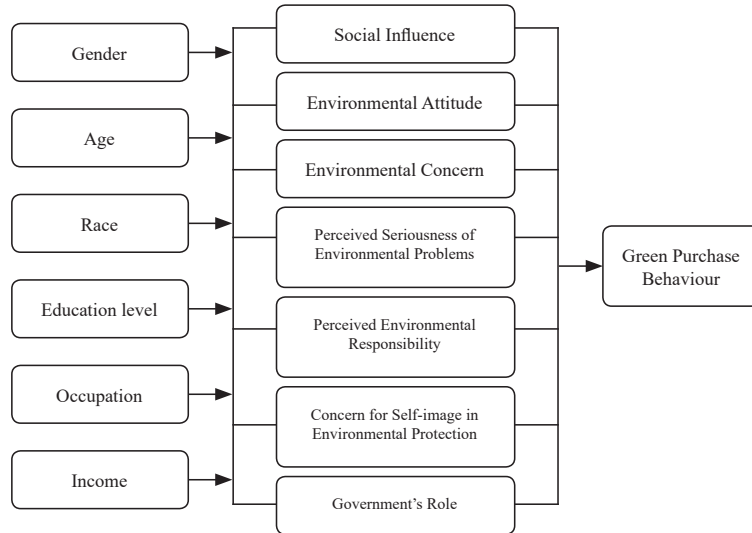


Figure 1. Sinnappan and Abd Rahman (2011) model

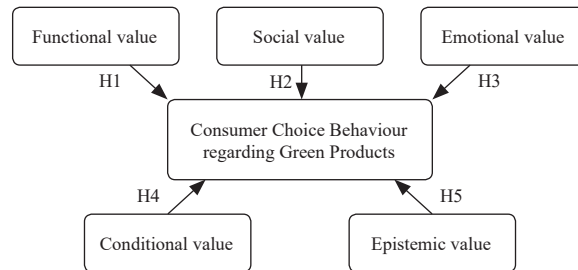


Figure 2. Lin and Huang (2012) model

whether there are considerable differences in consumption values and choice behavior among customers with varied perspectives on environmental concern. As results indicate, consumers with greater environmental concern, advocate green products more and show greater readiness to select them. The mentioned model is depicted in figure 2.

Kaufmann, Panni, and Orphanidou (2012), in a study aiming at assessing the consumers’ green purchasing behavior factors, proposed a framework based on researched secondary data, through the integration of existing incoherent frameworks proposed by previous researchers. Their proposed framework is meticulous and multifaceted encompassing various factors affecting green purchase behavior. Demographic variables are mediators of the framework and independent variables include environmental knowledge, environmental concerns, effective-

ness perceived by consumer, environmental awareness, environmental concern and attitude, altruism, trust about green product safety and quality, values collectivism and justice on the method of business.

Vazifehdoust et al. (2013) proposed an integrated model that synthesizes the theory of reasoned action (TRA) and two classes of variables, personal and marketing, to examine the attitudinal and behavioral decision factors to purchase green products. Personal variables, including environmental knowledge, environmental concern and perceived innovation characteristics and marketing factors that influence on attitude towards green products, encompass quality, green advertising, and green labeling. They clarified that positive attitude toward green products augments the intention of consumers to purchase green products.

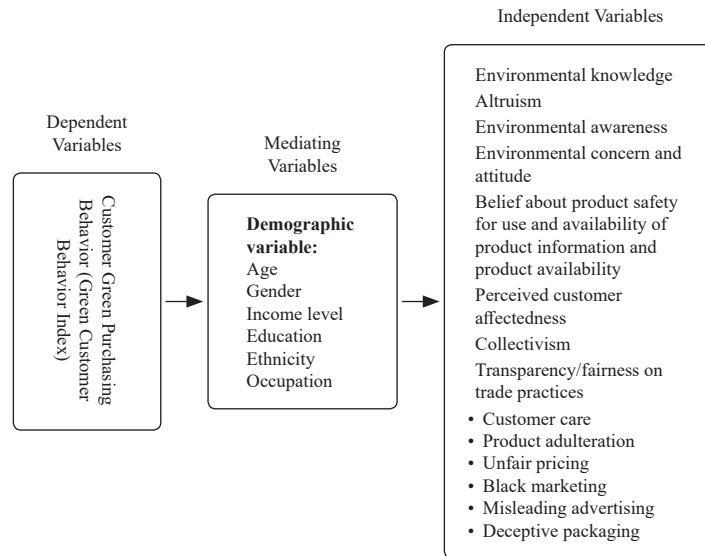


Figure 3. Kaufmann et al (2012) model

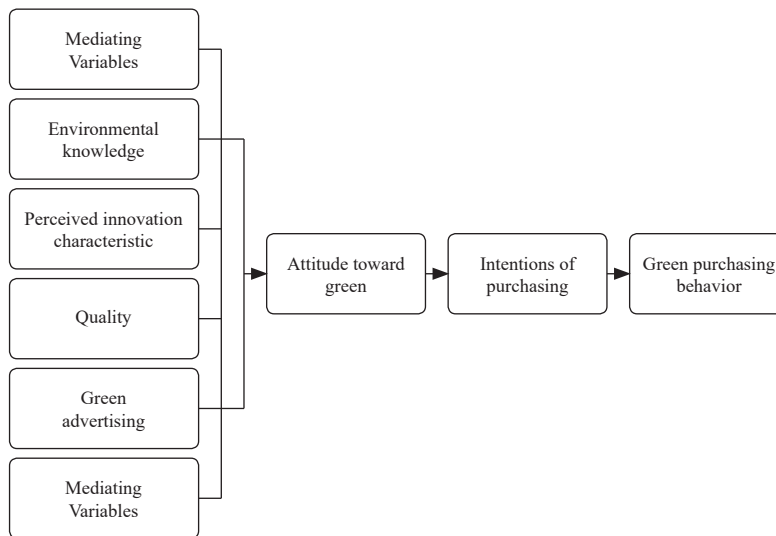


Figure 4. Vazifehdoust et al (2013) framework

Abid Saleem et al. (2015), in a paper entitled: “Antecedents of Green Purchase Intentions Evidence from Customers of Electronics Products from Multan District” developed a framework to examine the effect of green trust, green satisfaction, green corporate image and product image on green purchase intentions. Based on the findings they concluded that green trust, green satisfaction, and green corporate image appeared as significant predictors of green purchase intentions however green product image failed to receive significant support.

N. Suki (2013) proposed a model to investigate the influence of consumers’ environmen-

tal concerns, awareness of green products and price and brand image on their purchasing decision of green products. He found that consumers’ awareness of brand image and price are relatively the most influencing factors on green products purchasing decision. This study also offers that to elevate consumer familiarization with products and their knowledge of green products, marketers should emphasize on providing lucid information about green products and eco-labels. Findings debated that people with some concern for the environment and the brand image would have a stronger preference in purchasing a green product.

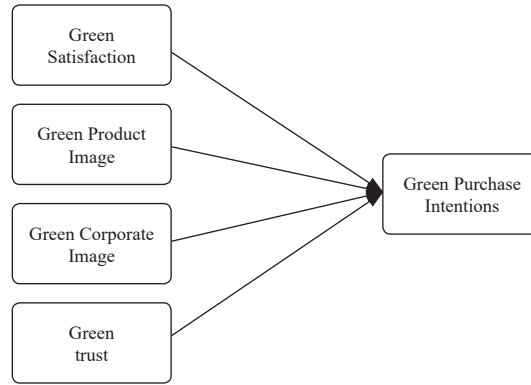


Figure 5. Saleem et al (2015) framework

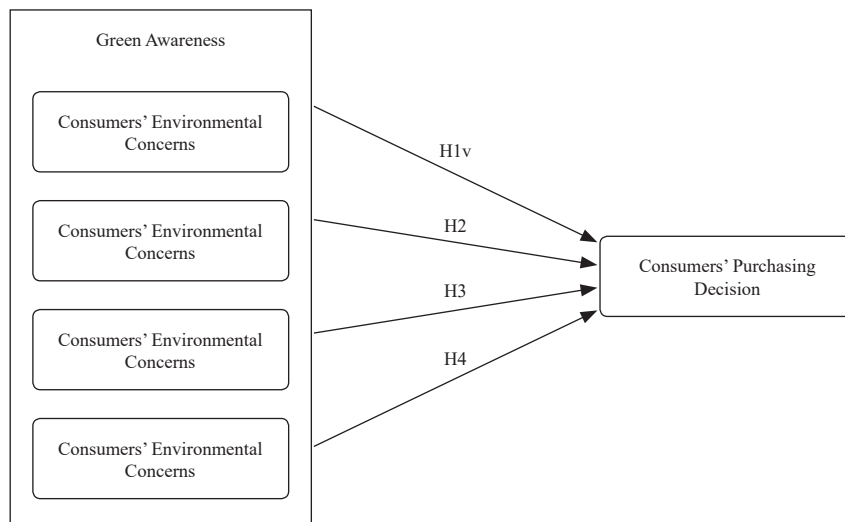


Figure 6. Suki (2013) model

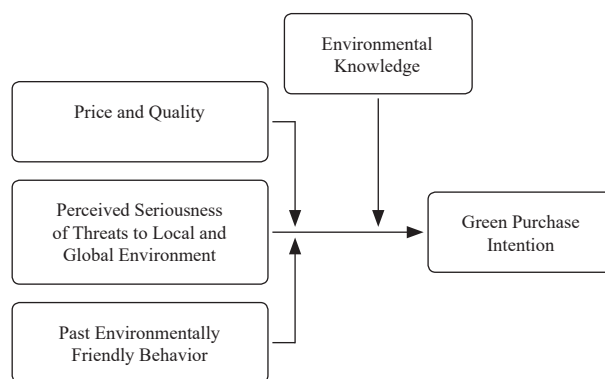


Figure 7. Khan and Zia-ud-Din (2010) framework

Muhammad Riaz Khan and Zia-Ud-Din (2010) investigated the determinants of green purchase behaviors in Islamic countries such as Pakistan and Jordan. They also aimed to test the moderating effect of environmental knowledge on green purchase intentions within Islamic mar-

kets. Their findings include factors such as price, quality, perceived seriousness of threats to local and global environment, environmentally friendly behaviors as independent variables and also environmental knowledge as a moderating factor, which is depicted in figure 7.

Kianpour, Anvari, Jusoh, and Othman (2014) conducted a study with the purpose of addressing the main motivators of customers' green purchase. They debated the motivating role of the promotional tools, reference group, laws and regulations, consumer's concern, perceived effectiveness and knowledge of green products purchasing. Moreover, Esmaeilpour and Bahmiary (2017) approved that the environmental attitude of customers has a significant and positive impact on caring for green products and environmental concerns while they have a significant and positive impact on green purchasing decision. Accordingly, Yadav & Pathak (2017) employs Theory of Planned Behavior (TPB) to scrutinize the green purchase behavior of Indian customers. They concluded attitude and subjective norms that refer to social influence as well as perceived value significantly affect green purchase behavior of customers (Yadav & Pathak, 2017). Another study (Chaudhary & Bisai, 2018) extends the issue within Indian community, which result in Except for the direct association between subjective norm (SN) and purchase intention (PI), the study provided support for the TPB framework.

In addition, (Maichum, Parichatnon, & Peng, 2017) debated that environmental consciousness; environmental knowledge and environmental attitude have significant positive influences on purchase intention towards green products. Another study in Indonesia found that the effect of religiosity, environmental knowledge, and attitude toward green purchase behavior are significant in that they explain 67.6% of GPB variation. It also deduced that religiosity and environmental knowledge have a meaningful positive impact on environmental attitudes. Therefore, it concluded that the two variables affect green purchase behavior through environmental attitudes (Kartini, Rufaidah, & Fani, 2017).

A recent study in China found out that although it is significant, the relationship between green trust and green purchase intention is positively moderated by perceived price. Compared with low perceived price, green trust has a greater

effect on green purchase intention in the case of high-perceived price. However, the relationship between perceived consumer effectiveness and green purchase intention is not moderated by perceived price (Wang, Ma, & Bai, 2019).

Ultimately, among all above-mentioned determinants, which reviewed through the accessible literature, 13 most frequent factors extracted and listed in Table 1, according to experts.

RESEARCH METHOD

This section is an effort to clarify the development process of the theoretical model. The main purpose of research methodology is help to implement empirical research by offering the research design (Bag & Anand, 2014). This study employs a literature review, expert interviews, and ISM consequently but interactively to reach its objectives. Green purchase affecting factors gathered through a deep literature review, while the most frequent ones extracted according to 14 experts opinions and securitized through ISM methodology. The experts selected by purposive method, which called criterion sampling. Accordingly, any selected expert should meet three main criteria as follows: more 10 ten years of experience, holding at least a Master's degree in marketing and cooperating with green marketing plans for the last five years. The experts were selected through a snowball-sampling framework, which ultimately matured by 14 experts according to their referrals. It means there was no other expert according to their referees. Findings imported in a MICMAC analysis for more insight. Research steps, as well as findings, are clarified in details in the following section.

Interpretive Structural Modeling (ISM)

ISM helps researchers to explain a problem by identifying the existent interaction between variables (N. Kumar, 2013). A collection of elements which are directly and indirectly related to each other are structured into a systematic model, this is why ISM is clarified as an interactive learning process (Jayant & Azhar, 2014).

Table 1 . Affecting Factors on Consumers' Green Purchasing Behavior and Intention

F	Definition	Application
Environmental awareness	Environmental awareness is defined as "knowing the impact of human behavior on the environment". Environmental awareness has both a cognitive, knowledge-based component and an affective, perception based component (Kollmuss & Agyeman, 2002).	R. Y. Chan (2001), R. Y. Chan and Lau (2000), Van Hai and Mai (2012), Kaufmann et al. (2012), Boztepe (2012), Maichum et al. (2017), Kartini et al. (2017).
Environmental attitude	Environmental attitude refers to the individuals' value judgment and it taps the individuals' cognitive assessment of the value of environmental protection (Lee, 2008).	Widodo et al. (2015), Nizam et al. (2014), Almosawi (2014), Lu, Ab Majid, Harun, and Othman (2014), Azizan and Suki (2013), L. Chen (2013), Ling (2013), Mei et al. (2012), Sinnappan and Rahman (2011), Beckford, Jacobs, Williams, and Nahdee (2010), Mostafa (2009), Lee (2008), Cornelissen, Pandelaere, Warlop, and Dewitte (2008), Smith, Haugtvedt, and Petty (1994), Berger and Corbin (1992), Esmailpour and Bahmiary (2017), Yadav and Pathak (2017), Maichum et al. (2017), Kartini et al. (2017).
Environmental concern	Environmental concern is a strong attitude towards preserving the environment (T.-S. Chan, 1996).	Kordshouli, Ebrahimi, and Bouzanjani (2015), Nizam et al. (2014), Junior et al. (2014), Lasuin and Ching (2014), Karatu and Mat (2013), Rehman and Dost (2013), Kim and Choi (2005), Lee (2008), Mostafa (2009), Cheah (2009). Grunert (1993). Hines, Hungerford, and Tomera (1987), T.-S. Chan (1996), Mainieri, Barnett, Valdero, Unipan, and Oskamp (1997), Schlossberg (1992), Ottman (1993), Kerr (1990), Donation and Kate (1992), Esmailpour and Bahmiary (2017), Maichum et al. (2017).
Government's role	It refers to government's holistic approach for sustainability, known as the phrase "AFFIRM" which stands for Awareness, Faculty, Finance, Infrastructure, Research, development and commercialization and Marketing (Nizam et al., 2014).	Nizam et al. (2014), Lu et al. (2014), Lee (2008), Sinnappan and Rahman (2011).
Social influence	It refers to the process of changing in an individual's thoughts, feelings, attitudes, or behaviors that results from interaction with another individual or a group (Ramayah, Lee, & Mohamad, 2010).	Sharaf, Isa, and Al-Qasa (2015), Rehman and Dost (2013), Ling (2013), Wahid et al. (2011), Lu et al. (2014) L. Chen (2013), Irawan and Darmayanti (2012), Nizam et al. (2014) Lasuin and Ching (2014), Cheah (2009), Awan and Raza (2010), Lee (2008), Sinnappan and Rahman (2011), Sobhanifard and Balighi (2018), Yadav and Pathak (2017).
Functional value	Functional value is allied to the "perceived utility acquired from an alternative's capacity for functional, utilitarian or physical performance and was thought to be generated by a product's salient attributes" (Sheth, Newman, & Gross, 1991)	Lin and Huang (2012), Mohd Suki and Mohd Suki (2015). Yadav and Pathak (2017), Wang et al. (2019).
Green satisfaction	Green satisfaction is a congenial stage of utilization-relayed accomplishment to convince a consumer's atmospheric green needs, wants and sustainable expectation (Y.-S. Chen, 2010)	Abid Saleem et al. (2015).
Green trust	Green trust is imagined to be "a willingness to depend on a product, service, or brand based on the belief or expectation resulting from its credibility, benevolence, and ability about its environmental performance" (Y.-S. Chen, 2010).	Abid Saleem et al. (2015). Rahardjo (2015), Saeedi Kleshami and Shabgoo Monsef (2015), Karatu and Mat (2015), Karatu and Mat (2014), Liang and Chaipoopirutana (2014), Rizwan et al. (2013), Karatu and Mat (2013), Y.-S. Chen and Chang (2012), Wang et al. (2019).
Green advertising	Green advertising refers to the organizational demonstration of environmental sensitivity through various strategies such as using marketing tools in this line (Vazifehdoust et al., 2013).	Kong, Harun, Sulong, and Lily (2014), Vazifehdoust et al. (2013), Li-Ming and Wai (2013), Martinez Flores (2012).
Green labeling	An eco-label is a voluntary claim that a product has less impact on the environment with either production or consumption of that product (Gan, Wee, Ozanne, & Kao, 2008).	Sharaf et al. (2015), Vazifehdoust et al. (2013), Kong et al. (2014), Delafrooz, Taleghani, and Nouri (2014), Mei et al. (2012), Siringi (2012).
Quality	Quality is product features matched with 8 dimensions namely, performance, features, conformance, reliability, durability, serviceability, aesthetics, and customer-perceived quality (Jakpar, Goh, Johari, & Myint, 2012).	Niknezhad and Ebrahimi (2015), Vazifehdoust et al. (2013), Muhammad Riaz Khan and Zia-Ud-Din (2010).
Price	For buyers and sellers, price is a tool to make informed economic decisions they need to know details such as quantity, units, location, and schedule (Cox, Considine, & Principal, 2009).	Boztepe (2012), Huang, Yang, and Wang (2014), Muhammad Riaz Khan and Zia-Ud-Din (2010).
Reference group	A reference group is a group that you behave like and you behave like them (Cohen, 1962).	Kianpour et al. (2014).

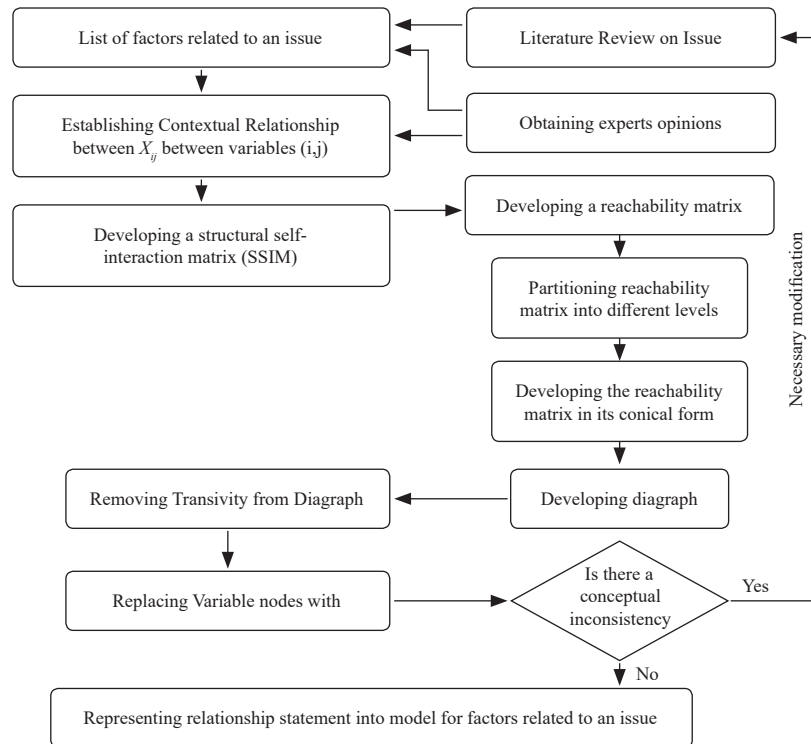


Figure 8. Flow diagram for ISM adapted from (Attri et al., 2013)

To draw a map of indicated links exist among diverse elements of an intricate decision situation ISM could be utilized (Grzybowska, Awasthi, & Hussain, 2014). Providing essential inputs for developing policy is one of the effective use of ISM in most of the intricate human systems. ISM is a process which could be utilized in order to convert obscure, negligibly defined and complicated mental models of systems into visible and well-defined simpler models (Srivastava, Swami, & Banwet, 2014).

Porter et al. (1980) stated that through ISM, -specific relation between every two elements in a set could be demonstrated graphically in a matrix form. Figure 8 depicts various steps involved in the ISM technique (Attri, Dev, & Sharma, 2013).

RESULT AND DISCUSSION

Structural Self-Interaction Matrix (SSIM):

Structural self-interaction matrix (SSIM) shows how the pairwise relations are existent among system's elements (Bag & Anand, 2014) as the

first step in ISM. In this study, expert opinions gathered through interviews in order to reach the pairwise comparisons of factors. To figure out the contextual relationship among the factors, It's essential to consult with experts, this is an unavoidable phase in order to develop the contextual relationship between the variables (Attri et al., 2013). Therefore 10 experts from academia and 4 experts from industry took part in identifying the contextual relationship among the affecting factors on green purchase behavior. It means the experts scrutinized any pairwise relation within the factors as a focus group and finally, they reach a consensus on relations. the direction of the relations among the elements (i and j) could be shown through the following four symbols which finally lead to SSIM development (Bag & Anand, 2014):

V: i leads to j but j does not lead to i.

A: i does not lead to j but j leads to i.

X: i leads to j and j leads to i.

O: i and j are unrelated to each other.

Table 2 demonstrates the developed SSIM of the studied case using the symbols V, A, X, and O. as shown, symbol 'V' has been placed in

Table 2. Structural Self-Interaction Matrix

Code	Influencing factors on GPB	Factor number												
		13	12	11	10	9	8	7	6	5	4	3	2	1
1	Environmental awareness	A	O	O	A	A	V	V	O	A	A	X	V	
2	Environmental attitude	A	O	V	A	A	V	V	V	A	A	A		
3	Environmental concern	A	O	V	X	A	V	V	V	A	O			
4	Government's role	X	V	V	V	V	O	O	V	O				
5	Social influence	X	O	O	O	O	V	O	V					
6	Functional value	O	A	A	A	A	O	A						
7	Green satisfaction	A	X	A	A	A	V							
8	Green trust	A	X	A	A	A								
9	Green advertising	A	V	V	O									
10	Green labeling	O	V	A										
11	Quality	O	V											
12	Price	O												
13	Reference group													

Table 3. Initial Reachability Matrix

Code	Influencing factors on GPB	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Environmental awareness	1	1	1	0	0	0	1	1	0	0	0	0	0
2	Environmental attitude	0	1	0	0	0	1	1	1	0	0	1	0	0
3	Environmental concern	1	1	1	0	0	1	1	1	0	1	1	0	0
4	Government's role	1	1	0	1	0	1	0	0	1	1	1	1	1
5	Social influence	1	1	1	0	1	1	0	1	0	0	0	0	1
6	Functional value	0	0	0	0	0	1	0	0	0	0	0	0	0
7	Green satisfaction	0	0	0	0	0	1	1	1	0	0	0	1	0
8	Green trust	0	0	0	0	0	0	0	1	0	0	0	1	0
9	Green advertising	1	1	1	0	0	1	1	1	1	0	1	1	0
10	Green labeling	1	1	1	0	0	1	1	1	0	1	0	1	0
11	Quality	0	0	0	0	0	1	1	1	0	1	1	1	0
12	Price	0	0	0	0	0	1	1	1	0	0	0	1	0
13	Reference group	1	1	1	1	1	0	1	1	1	0	0	0	1

Table 4. Final reachability matrix

Code	Influencing factors on GPB	1	2	3	4	5	6	7	8	9	10	11	12	13	Driving Power
1	Environmental awareness	1	1	1	0	0	1	1	1	0	1	1	1	0	9
2	Environmental attitude	1	1	1	0	0	1	1	1	0	1	1	1	0	9
3	Environmental concern	1	1	1	0	0	1	1	1	0	1	1	1	0	9
4	Government's role	1	1	1	1	1	1	1	1	1	1	1	1	1	13
5	Social influence	1	1	1	1	1	1	1	1	1	1	1	1	1	13
6	Functional value	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7	Green satisfaction	0	0	0	0	0	1	1	1	0	0	0	1	0	4
8	Green trust	0	0	0	0	0	1	1	1	0	0	0	1	0	4
9	Green advertising	1	1	1	0	0	1	1	1	1	1	1	1	0	10
10	Green labeling	1	1	1	0	0	1	1	1	0	1	1	1	0	9
11	Quality	1	1	1	0	0	1	1	1	0	1	1	1	0	9
12	Price	0	0	0	0	0	1	1	1	0	0	0	1	0	4
13	Reference group	1	1	1	1	1	1	1	1	1	1	1	1	1	13
	Dependence power	9	9	9	3	3	13	12	12	4	9	9	12	3	

the cell (1, 7) because variable 1 leads to variable 7. $((N) * (N-1)/2)$ is the number of required pairwise comparison in order to develop SSIM,

where N is the number of variables (Luthra, Kumar, Kumar, & Haleem, 2011).

Table 5. Summary Of Factors Partitioning (Iteration 1-5)

I.	Factors	Reachability	Antecedent	Intersection	level
1	Functional value(6)	6	1,2,3,4,5,6,7,8,9,10,11,12,13	6	I
	Green satisfaction(7)	7,8,12	1,2,3,4,5,7,8,9,10,11,12,13	7,8,12	II
2	Green trust(8)	7,8,12	1,2,3,4,5,7,8,9,10,11,12,13	7,8,12	II
	Price(12)	7,8,12	1,2,3,4,5,7,8,9,10,11,12,13	7,8,12	II
	Environmental awareness(1)	1,2,3,10,11	1,2,3,4,5,9,10,11,13	1,2,3,10,11	III
	Environmental attitude(2)	1,2,3,10,11	1,2,3,4,5,9,10,11,13	1,2,3,10,11	III
3	Environmental concern(3)	1,2,3,10,11	1,2,3,4,5,9,10,11,13	1,2,3,10,11	III
	Green labeling(10)	1,2,3,10,11	1,2,3,4,5,9,10,11,13	1,2,3,10,11	III
	Quality(11)	1,2,3,10,11	1,2,3,4,5,9,10,11,13	1,2,3,10,11	III
4	Green advertising(9)	9	4,5,9,13	9	IV
	Government’s role(4)	4,5,13	4,5,13	4,5,13	V
5	Social influence(5)	4,5,13	4,5,13	4,5,13	V
	Reference group(13)	4,5,13	4,5,13	4,5,13	V

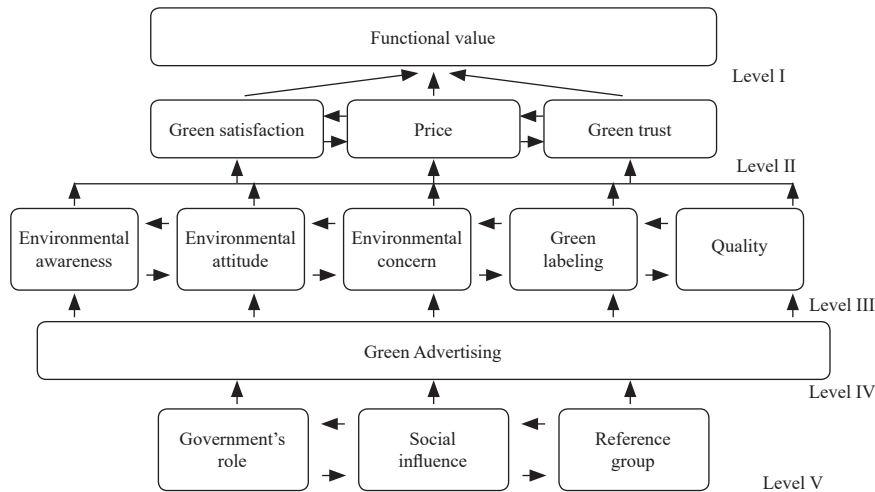


Figure 9. ISM Based Model of affecting factors on green purchasing behavior

Reachability Matrix

The Initial Reachability Matrix, which is a binary matrix, could be created through converting SSIM by the following rules and replacing V, A, X, O by 1 or 0 (N. Kumar, 2013):

- If (i, j) value in the SSIM is V, (i, j) value in the reachability matrix will be 1 and (j, i) Value will be 0.
- If (i, j) value in the SSIM is A, (i, j) value in the reachability matrix will be 0 and (j, i) Value will be 1.
- If (i, j) value in the SSIM is X, (i, j) value in the reachability matrix will be 1 and (j, i) Value will also be 1.
- If (i, j) value in the SSIM is O, (i, j) value in the reachability matrix will be 0 and (j, i) value will also be 0.

Then table 3 presents Initial Reachability Matrix, which is prepared according to the above-mentioned rules.

Adding transitivity is needed to develop the final reachability matrix, which is shown in table 4, moreover, the driving and dependence power of each factor can be calculated through summing the rows and columns respectively.

Level partitions

The final reachability matrix is the source of extracting the reachability set and antecedent sets of each factor. In addition to the specific factor itself, the other factors that might be influenced by this specific factor, are the elements of the reachability set. Also to compose an antecedent

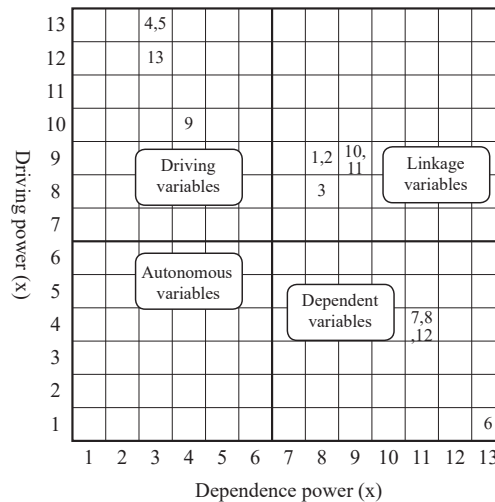


Figure 10. Factors clusters, affecting green purchasing behavior and intention

set, the specific factor itself besides the other factors that are influencing on this factor, are required. Hence, levels of different factor could be determined by finding the intersection point of the sets mentioned above.

Formation of ISM-based Model

The structural model is the product of the final reachability matrix and level partitions by means of vertices or nodes and lines of the edges. If there is a relationship between the variable j and i, this relation is observable through an arrow which points to from i to j, this is called graph or digraph (Bag & Anand, 2014). Figure 9 illustrates that ‘government’s role, social influence and reference group’ have been very significant variables among factors influencing customer green purchasing behavior since they appear at the base of the ISM hierarchy. Functional value has been identified as the top-level variable in the model.

MICMAC Analysis

The MICMAC analysis is aimed at analyzing the drive power and dependence power of affecting factors. Multiplication properties of matrices constitute the basis for the MICMAC principle. Recognition of driving key variables of a system in different categories is possible through MICMAC analysis. The factors have

been classified into four categories according to their driving and dependence power, i.e. autonomous factors, linkage factors, dependent and independent factors (Attri et al., 2013). The driver power-dependence diagram has been developed as figure 10.

As it is clear Green advertising (9), Government role (2), Social influence (5) and Reference group (13) are the driving factors of GPB according to MICMAC analysis. The ISM casual model also supports this, while they are the cornerstone of the model at level IV and Level V. In addition, linkage factors including Environmental awareness (1), Attitude (2), Concern (3), Green labeling and Quality (11) are classified at level III of the ISM model. They act as linkage between the bottom and the upper levels of the model. Furthermore, findings clustered factors 7,8,12 and 6 as dependent factors, which play the dependent role in the ISM casual model as well. It means that for planning to GPB according to ISM findings the Government role and Social influence, as well as Reference groups and green advertising, are the most influential and basic strategies. They should be tackled at first while if they accompanied with Environmental awareness, Attitude, Concern in line with the products Quality and Green labeling strategies will result in satisfaction, Trust and the Perceived functional value by the customers. It will surely lead to a successful marketing

program and a significantly more healthy and cleaner world.

CONCLUSION

Green purchasing behavior is turning to be considered as one of the most important issues of today's business, while marketers are targeting the green segment of the potential customers all around the world as well as Iran for ensuring health, environment safety and sustainability. Accordingly, this paper selected thirteen factors or motivators of GPB based on literature review and expert's opinions, then it employed Interpretive Structural Modeling (ISM) methodology to determine the mentioned factor's contextual relationships. Findings result in ISM based model of GPB marketing. Results clarified that interactions between the factors are very sensitive and interrelated, which implies that, any action on these factors will trigger an effect on the others. According to the findings, quality and environmental concern, green labeling, environmental attitude, and environmental awareness are competent, as linkage factors, which implicate special attention while they participate a vital role in customers' GPB. Therefore, professionals need to pay significant attention to these factors before they approach dependent factors such as green products' price, satisfaction, or functional value. Most of prior studies have proven this factors and their impact on GPB (Esmailpour & Bahmiary, 2017; Kartini et al., 2017; Lin & Huang, 2012; Maichum et al., 2017; Sinnappan & Rahman, 2011; Wang et al., 2019) but neglected their interrelation effects in their statistical models. In this case, Wang et al. (2019) declared the moderating role of price on green trust and GPB in a simplified statistical model or Esmailpour and Bahmiary (2017) declared the environmental attitude of customers has significant and positive impact on caring for green products and environmental concerns.

In addition, functional value has the most dependency and at least driving power, positioned at the top of ISM model, which means any changes in other 12 factors, will lead to a change in customer functional value. Green satisfaction, green trust, price are also classified as dependents. Furthermore, dependent clustered factors are also proved by prior studies (Muhammad Riaz Khan, 2010; Saleem, Khan, & Alam, 2015; N. M. Suki, 2013) although there are no signs of partitioning in their studies. Ultimately driving factors like government, social influence, reference groups, and green advertising is also proved in prior studies (Chaudhary & Bisai, 2018; Kianpour et al., 2014; Yadav & Pathak, 2017). They could be a strong tool in GBP to trigger or enhance green considerations in society. For instance as it is shown in figure 9, government role is positioned at the base of the hierarchy emphasizing its vital role. Government role can be reflected in different type of programs in the field of GBP, such as establishment of green regulations or determining needed standards for companies or it could be the government incentive programs for companies that are outstanding in green production and marketing. Findings proved that there is no autonomous factor, which indicates the sophisticated relations within all the studied GPB variables. Accordingly, it is clear that the factors and their relationships made the complex system, which justifies suitable system methodologies such as ISM to tackle. Traditional system engineering approaches cannot be so fruitful in complex messy system of human behavior modeling.

Ultimately, it should be declared that the proposed ISM model helps managers and decision-makers involved in green marketing, to plan the most efficient strategy for enhancing green product markets especially for Iranian firms in home markets.

REFERENCES

- Abid Saleem, M., Ali Khan, M., & Alam, S. (2015). Antecedents Of Green Purchase Intentions: Evidence From Customers Of Electronics Products From Multan District. *European Academic Research*, 2(11).
- Almossawi, M. (2014). PROMOTING GREEN PURCHASE BEHAVIOR TO THE YOUTH (CASE OF BAHRAIN). *British Journal of Marketing Studies*, 2(5), 1-16.
- Attri, R., Dev, N., & Sharma, V. (2013). Interpretive structural modelling (ISM) approach: an overview. *Research Journal of Management Sciences*, 2319, 1171.
- Awan, U., & Raza, A. M. (2010). *The Role Of Green Marketing In Development Of Consumer Behavior Towards Green Energy*. (master), Online Retrieved On 6th October 2010 From [Http://Mdh.Divaportal.Org/Smash/Get/Diva2: 323779/Fulltext01](http://Mdh.Divaportal.Org/Smash/Get/Diva2:323779/Fulltext01).
- Azizan, S. A. M., & Suki, N. M. (2013). Consumers Intention to Purchase Green Product: Insights. From. Malaysia. *World Applied Sciences Journal*, 22(8), 1129-1134.
- Bag, S., & Anand, N. (2014). Modeling green supply chain management framework using ISM and MICMAC analysis. *African Journal of Business Management*, 8(22), 1053-1065.
- Beckford, C. L., Jacobs, C., Williams, N., & Nahdee, R. (2010). Aboriginal environmental wisdom, stewardship, and sustainability: lessons from the Walpole Island First Nations, Ontario, Canada. *The journal of environmental education*, 41(4), 239-248.
- Berger, I. E., & Corbin, R. M. (1992). Perceived consumer effectiveness and faith in others as moderators of environmentally responsible behaviors. *Journal of Public Policy & Marketing*, 79-89.
- Boztepe, A. (2012). Green marketing and its impact on consumer buying behavior. *European Journal of Economic and Political Studies*, 5(1), 5-21.
- Chan, R. Y. (2001). Determinants of Chinese consumers' green purchase behavior. *Psychology & Marketing*, 18(4), 389-413.
- Chan, R. Y., & Lau, L. B. (2000). Antecedents of green purchases: a survey in China. *Journal of consumer marketing*, 17(4), 338-357.
- Chan, T.-S. (1996). Concerns for environmental issues and consumer purchase preferences: A two-country study. *Journal of international consumer marketing*, 9(1), 43-55.
- Chaudhary, R., & Bisai, S. (2018). Factors influencing green purchase behavior of millennials in India. *Management of Environmental Quality: An International Journal*, 29(5), 798-812.
- Cheah, C. M. (2009). *A Study Consumers' Green Purchasing Intention*. Universiti Utara Malaysia,
- Chen, L. (2013). A study of green purchase intention comparing with collectivistic (Chinese) and individualistic (American) consumers in Shanghai, China. *Information Management and Business Review*, 5(7), 342.

- Chen, Y.-S. (2010). The drivers of green brand equity: Green brand image, green satisfaction, and green trust. *Journal of Business ethics*, 93(2), 307-319.
- Chen, Y.-S., & Chang, C.-H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*, 50(3), 502-520.
- Cohen, B. P. (1962). The process of choosing a reference group. *Mathematical methods in small group processes*, 8, 101.
- Cornelissen, G., Pandelaere, M., Warlop, L., & Dewitte, S. (2008). Positive cueing: Promoting sustainable consumer behavior by cueing common environmental behaviors as environmental. *International Journal of Research in Marketing*, 25(1), 46-55.
- Cox, W., Considine, T., & Principal, T. (2009). Price communication, product definition, and service-oriented energy. *Grid-Interop, Denver, CO, USA*, 17-19.
- Dehghanan, H., & Bakhshandeh, G. (2014). The impact of green perceived value and green perceived risk on green purchase behavior of Iranian consumers. *International Journal of Management and Humanity Sciences*, 3(2), 1349-1357.
- Delafrooz, N., & Moghaddam, S. S. (2017). Green product consumers segmentation using self-organizing maps in Iran. *International Journal of Agricultural Management and Development*, 7(3), 347-356.
- Delafrooz, N., Taleghani, M., & Nouri, B. (2014). Effect of green marketing on consumer purchase behavior. *QScience Connect*, 5.
- Donation, S., & Kate, F. (1992). Polls Show Ecological Concerns Is Strong. *Advertisement Age*, 63, 49.
- Esmailpour, M., & Bahmiary, E. (2017). Investigating the impact of environmental attitude on the decision to purchase a green product with the mediating role of environmental concern and care for green products. *Management & Marketing*, 12(2), 297-315.
- Gan, C., Wee, H. Y., Ozanne, L., & Kao, T. (2008). Consumers' purchasing behavior towards green products in New Zealand. *Innovative Marketing*, 4(1), 93-102.
- Grunert, S. (1993). Everybody Seems Concerned About The Environment But Is This Concern Reflected In Danish Consumers' Food Choice? *European Advances In Consumer Research*(1), 428-433.
- Grzybowska, K., Awasthi, A., & Hussain, M. (2014). *Modeling enablers for sustainable logistics collaboration integrating-Canadian and Polish perspectives*. Paper presented at the Computer Science and Information Systems (FedCSIS), 2014 Federated Conference on.
- Hessami, H. Z., & Yousefi, P. (2013). Investigation of major factors influencing green purchasing behavior: Interactive approach. *European Online Journal of Natural and Social Sciences*, 2(4), 584.

- 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, 18*(2), 1-8.
- Hosseini, S., & Ziaei Bide, A. (2013). Segmenting and Profiling Green Consumers with Use of Self Organizing Maps. *Management Research in Iran, 17*(2), 43-68.
- Huang, Y.-C., Yang, M., & Wang, Y.-C. (2014). Effects of green brand on green purchase intention. *Marketing intelligence & planning, 32*(3), 250-268.
- Irawan, R., & Darmayanti, D. (2012). *The influence factors of green purchasing behavior: a study of University Students in Jakarta*. Paper presented at the Proc. 6th Asian Business Research Conference.
- Jakpar, S., Goh, S., Johari, A., & Myint, K. (2012). Examining the product quality attributes that influences customer satisfaction most when the price was discounted: a case study in Kuching Sarawak. *International Journal of Business and Social Science, 3*(23), 221-236.
- Jansson, J., Marell, A., & Nordlund, A. (2010). Green consumer behavior: determinants of curtailment and eco-innovation adoption. *Journal of consumer marketing, 27*(4), 358-370.
- Jayant, M., & Azhar, P. S. (2014). Interpretive Structural Modeling (Ism) Approach: A State Of The Art Literature Review. *International Journal Of Research In Mechanical Engineering & Technology, 5*(1), 15-21.
- Junior, S. S. B., da Silva, D., Satolo, E. G., Magalhães, M. M., Putti, F. F., & de Oliveira Braga, W. R. (2014). Environmental Concern Has to Do with the Stated Purchase Behavior of Green Products at Retail. *Social Sciences, 1*, 23-30.
- Karatu, V. M. H., & Mat, N. K. N. (2013). Modeling Green Purchase Intention in Nigeria: A Conceptual Proposition. *Management, 3*(7), 480-483.
- Karatu, V. M. H., & Mat, N. K. N. (2014). A New Model of Green Purchase Intention and its Derivatives: Confirmatory Factor Analysis Validation of Constructs. *Information Management and Business Review, 6*(5), 261.
- Karatu, V. M. H., & Mat, N. K. N. (2015). Predictors of green purchase intention in Nigeria: The mediating role of environmental consciousness. *American Journal of Economics, 5*(2), 291-302.
- Kartini, D., Rufaidah, P., & Fani, M. (2017). Green Purchase Behavior: The Role of Religiosity, Environmental Attitude, and Environmental Knowledge.
- Kaufmann, H. R., Panni, M. F. A. K., & Orphanidou, Y. (2012). Factors Affecting Consumers' green Purchasing Behavior: an Integrated Conceptual Framework. *Amfiteatru Economic, 14*(31), 50.
- Kerr, K. (1990). Thinking green is no longer a hippie dream. *AdWeek, 31*, 18-19.
- Khan, M. R. (2010). Factors Explaining Green Purchase Intentions with Moderating Effect of Environmental Knowledge: Comparative Evidence from Islamic Perspective. *Factors Explaining*

Green Purchase Intentions with Moderating Effect of Environmental Knowledge: Comparative Evidence from Islamic Perspective (April 24, 2010).

- Khan, M. R., & Zia-Ud-Din. (2010). Factors Explaining Green Purchase Intentions With Moderating Effect Of Environmental Knowledge: Comparative Evidence From Islamic Perspective , Available At Ssrn: [Http://Ssrn.Com/Abstract=1595188](http://Ssrn.Com/Abstract=1595188) Or [Http://Dx.Doi.Org/10.2139/Ssrn.1595188](http://Dx.Doi.Org/10.2139/Ssrn.1595188).
- Kianpour, K., Anvari, R., Jusoh, A., & Othman, M. F. (2014). Important motivators for buying green products. *Intangible Capital*, 10(5), 873-896.
- Kim, Y., & Choi, S. M. (2005). Antecedents of green purchase behavior: An examination of collectivism, environmental concern, and PCE. *Advances in consumer research*, 32, 592.
- 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*, 8(3), 239-260.
- Kong, W., Harun, A., Sulong, R., & Lily, J. (2014). The influence of consumers' perception of green products on green purchase intention. *International Journal of Asian Social Science*, 4(8), 924-939.
- Kordshouli, H. R., Ebrahimi, A., & Bouzanjani, A. A. (2015). An analysis of the green response of consumers to the environmentally friendly behaviour of corporations. *Iranian Journal of Management Studies*, 8(3), 315.
- Kumar, N. (2013). Implementing lean manufacturing system: ISM approach. *Journal of Industrial Engineering and Management*, 6(4), 996.
- Kumar, P., & Ghodeswar, B. M. (2015). Factors affecting consumers' green product purchase decisions. *Marketing Intelligence & Planning*, 33(3), 330-347.
- Lasuin, C. A., & Ching, N. Y. (2014). Factors Influencing Green Purchase Intention Among University Students. *Malaysian Journal Of Business And Economics* 1(2), 1 – 14.
- Lee, K. (2008). Opportunities for green marketing: young consumers. *Marketing Intelligence & Planning*, 26(6), 573-586.
- Li-Ming, A., & Wai, T. (2013). Exploring Consumers' Green Purchase Behaviour Towards Online Green Advertising. *Centre for Tourism, Hospitality and Culinary Management. The Macrotheme Review*, 2(7), 60-81.
- Liang, Q., & Chaipoopirutana, S. (2014). *A Study Of Factors Affecting Customer 'S Attitude Toward Intention To Purchase Green Electronic Products At An It Mall In Beijing, China*. Paper presented at the International Conference On Business, Law And Corporate Social Responsibility (Icblcst'14)
- Lin, P.-C., & Huang, Y.-H. (2012). The influence factors on choice behavior regarding green products based on the theory of consumption values. *Journal of Cleaner Production*, 22(1), 11-18.
- Ling, C. Y. (2013). Consumers' purchase intention of green products: an investigation of the drivers

and moderating variable. *Marketing Management*, 57(1), 14503-14509.

- Liobikienė, G., & Bernatoniene, J. (2017). Why determinants of green purchase cannot be treated equally? The case of green cosmetics: Literature review. *Journal of Cleaner Production*, 162, 109-120.
- Lu, T. K., Ab Majid, N. F. N., Harun, N. H., & Othman, N. (2014). Assessing The Variables That Influence The Intention Of Green Purchase. *Icssr E-Journal Of Social Science Research*, 2.
- Luthra, S., Kumar, V., Kumar, S., & Haleem, A. (2011). Barriers to implement green supply chain management in automobile industry using interpretive structural modeling technique: An Indian perspective. *Journal of Industrial Engineering and Management*, 4(2), 231-257.
- Maichum, K., Parichatnon, S., & Peng, K.-C. (2017). Factors affecting on purchase intention towards green products: A case study of young consumers in Thailand. *International Journal of Social Science and Humanity*, 7(5), 330-335.
- Mainieri, T., Barnett, E. G., Valdero, T. R., Unipan, J. B., & Oskamp, S. (1997). Green buying: The influence of environmental concern on consumer behavior. *The Journal of social psychology*, 137(2), 189-204.
- Martinez Flores, R. (2012). *Effects of green advertising on trust building, brand opinion, and purchase behavior*. INSTITUTO TECNOLÓGICO Y DE ESTUDIOS SUPERIORES DE MONTERREY (MEXICO),
- Mei, O. J., Choon Ling, K., & Kay Hooi, K. (2012). *The Antecedents Of Green Purchase Intention Among Malaysian Consumers*. Paper presented at the, International Conference On Economics, Business Innovation.
- Mohd Suki, N., & Mohd Suki, N. (2015). Consumption values and consumer environmental concern regarding green products. *International Journal of Sustainable Development & World Ecology*, 22(3), 269-278.
- Mostafa, M. M. (2009). Shades of green: A psychographic segmentation of the green consumer in Kuwait using self-organizing maps. *Expert Systems with Applications*, 36(8), 11030-11038.
- Niknezhad, B., & Ebrahimi, A. (2015). The Effective Factors Of Green Purchasing On Green Purchasing Behavior Regarding To The Mediatory Role Of Green Purchasing Intention. *International Journal Of Basic Sciences & Applied Research*, 4(5), 311 -316.
- Nizam, N. Z., Rajiani, I., Mansor, N., Yahaya, S. N., & Hoshino, Y. (2014). Understanding Green Purchase Behavior Among Gen Y In Malaysia By Examining The Factors Influenced. *Interdisciplinary Journal of Contemporary Research In Business*, 6(2), 181.
- Ottman, J. (1993). Industry's response to green consumerism: *Journal of Business Strategy*, 13 (4), 3-7 (July/August 1992). *Long Range Planning*, 26(1), 153.
- Porter, A. L., Rossini, F. A., Carpenter, S. R., Roper, A., Larson, R. W., & Tiller, J. S. (1980). *Guidebook for technology assessment and impact analysis*.

- Rahardjo, F. A. (2015). The Roles of Green Perceived Value, Green Perceived Risk, and Green Trust towards Green Purchase Intention of Inverter Air Conditioner in Surabaya. *iBuss Management*, 3(2).
- Ramayah, T., Lee, J. W. C., & Mohamad, O. (2010). Green product purchase intention: Some insights from a developing country. *Resources, conservation and recycling*, 54(12), 1419-1427.
- Rehman, Z., & Dost, M. (2013). *Conceptualizing green purchase intention in Emerging markets: An empirical analysis on Pakistan*. Paper presented at the The 2013 WEI International Academic Conference Proceedings.
- Rizwan, M., Aslam, A., ur Rahman, M., Ahmad, N., Sarwar, U., & Asghar, T. (2013). Impact of green marketing on purchase intention: An empirical study from Pakistan. *Asian Journal of Empirical Research*, 3(2), 87-100.
- Saeedi Kleshami, A., & Shabgoo Monsef, S. M. (2015). Antecedents Factors Affecting Green Purchase Intention. *Gmp Review*, 16(3).
- Sage, A. (1977). *Interpretive Structural Modeling: Methodology For Large Scale Systems*, New York: McGraw-Hill., 91-164.
- Saleem, M., Khan, M., & Alam, S. (2015). Antecedents of green purchase intentions: evidence from customers of electronics products from Multan district. *Journal of European Academic Research*, 14900-14916.
- Schlossberg, H. (1992). Kids teach parents how to change their buying habits. *Marketing News*, 26(8).
- Sharaf, M. A., Isa, F. M., & Al-Qasa, K. (2015). Factors Affecting Young Malaysians' Intention To Purchase Green Products. *Merit Research Journal Of Business And Management*, 3(3), 029-033.
- Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of business research*, 22(2), 159-170.
- Sinnappan, P., & Rahman, A. A. (2011). Antecedents of green purchasing behavior among Malaysian consumers. *International Business Management*, 5(3), 129-139.
- Siringi, R. (2012). Determinants of green consumer behaviour of post graduate teachers. *Journal of Business and Management*, 6(3), 19-25.
- Smith, S. M., Haugtvedt, C. P., & Petty, R. E. (1994). Attitudes and recycling: does the measurement of affect enhance behavioral prediction? *Psychology & Marketing*, 11(4), 359-374.
- Sobhanifard, Y., & Balighi, G. A. (2018). Emotional modeling of the green purchase intention improvement using the viral marketing in the social networks. *Social Network Analysis and Mining*, 8(1), 55.
- Srivastava, A., Swami, S., & Banwet, D. (2014). Interpretive structural modelling of security system for better security management in railways. *Transport Research Arena*.

- Suki, N. (2013). Green Awareness effects on consumer's purchasing decision: Some insights from Malaysia. *Green awareness effect*, 9, 50-63. In.
- Suki, N. M. (2013). GREEN AWARENESS EFFECTS ON CONSUMERS' PURCHASING DECISION: SOME INSIGHTS FROM MALAYSIA. *International Journal of Asia-Pacific Studies*, 9(2).
- Van Hai, H., & Mai, N. P. (2012). Environmental Awareness and Attitude towards Green Purchasing of Vietnamese Consumers.
- Vazifehdoust, H., Taleghani, M., Esmaeilpour, F., & Nazari, K. (2013). Purchasing green to become greener: Factors influence consumers' green purchasing behavior. *Management Science Letters*, 3(9), 2489-2500.
- Wahid, N. A., Rahbar, E., & Shyan, T. S. (2011). Factors influencing the green purchase behavior of Penang environmental volunteers. *International Business Management*, 5(1), 38-49.
- Wang, H., Ma, B., & Bai, R. (2019). How Does Green Product Knowledge Effectively Promote Green Purchase Intention? *Sustainability*, 11(4), 1193.
- Widodo, A., Rubiyanti, N., & Nandary, T. (2015). *Factors Influencing Green Purchasing Behavior (Study On University Student In Bandung)*. Paper presented at the 2nd International Conference On "Global Trends In Academic Research", Full Paper Proceeding.
- Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecological Economics*, 134, 114-122.