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Development of Patients Environmental Sustainability Performance in Healthcare Sector: A Conceptual Framework and Further Research Directions

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Abstract

Purpose - The purpose of this development the business model of the healthcare sector in order to promote patents satisfaction towards medical sector services improvement for the medical business model innovation to possess a competitive advantage in the medical and pharmaceutical industry.

Research design, data, and methodology - Safety standard protocol from existing multidisciplinary literature is a process of theorization, which uses grounded theory methodology rather than a description of the data and the targeted phenomenon by using Jabareen (2009). The first task is to map the spectrum of food safety literature regarding the phenomenon in safety management. This process includes developing the implementation factors and other sources such as existing business models and practices into the protocol design.

Results - The study suggests the conceptual framework to improve the safety management for patients' environmental sustainability performance.

Conclusion - The business model may support the beneficial aspect to healthcare government's policymakers, hospital employees, and medical specialist who can apply the practical perspective of its value regarding an educational protocol.

Originality/value - This study contributes to and extends our understanding of environmental sustainability performance, identifying the rationale for safety standards performance in the healthcare industry with suggested hybrid safety standards market consumer interconnector.

Keywords: Environmental management, Green Supply Chain Management (GSCM), Safety standards performance, Market-related forces.

JEL Classification: M38, M16, M14, L38.

1. Introduction

Medical business model and patients' environmental sustainability performance are important drivers of healthcare market players. The purpose of this development healthcare sector business model to promote patents satisfaction and medical and pharmaceutical services improvement for the medical business model innovation to possess a competitive advantage in the healthcare sector. According to Dierks, Bruyère, Reginster, and Richy (2016), the healthcare sector faces challenges due to economic changes towards

increasing healthcare costs and the new trend of patents service satisfaction and behaviour. Furthermore, different challenges such as new patents demands, economic changes, and regulatory reforms in emerging economy are uncertain in emerging economy countries involve an adaptation of healthcare sector. As quoted by Kawai, Seki, Fuchino, and Naka (2012), products perceived design systems have become essential for developing high value-added products in the healthcare sector. New healthcare business model to new models has empowered competition in order to intense and sales growth. In recent years, growing awareness of environmental concerns in combination with health concerns about safety risk management on healthcare products has led patients to question good environmental sustainability performance practices. In emerging market, concern about raw material safety regarding on pesticide management in Natural Health and Supplementary Products and their residues among

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consumers is elevated at the moment, because, the increasing use of pesticides coupled with their widespread mismanagement lead to considerable concerns about environmental pollution in sediments, surface and drinking water the Mekong Delta in Vietnam and its effect on human health (Toan, Sebesvari, Bläsing, Rosendahl, & Renaud, 2013).

Overall, the review of public health and environmental health have been suggested (Curl, Beresford, Fenske, Fitzpatrick, Lu, Nettleton, & Kaufman, 2015; Ye, Beach, Martin, & Senthilselvan, 2015; Ntzani, Ntritsos, Evangelou, & Tzoulaki, 2013; Moisan, Spinosi, Delabre, Gourlet, Mazurie, Bénatru, & Elbaz, 2015; Van Maele-Fabry, Hoet, Vilain, & Lison, 2012; Young, Eskenazi, Gladstone, Bradman, Pedersen, Johnson, & Holland, 2005) human health risks in accordance with residues pesticides dietary on Natural Health and Supplementary Productssuch as fruits, vegetables, and the use of antibiotics in animal production. The potential negative effects of dietary pesticide residues on human health have been related to an increasing human health risk (Mie, Raun Andersen, Gunnarsson, Kahl, Kesse-Guyot, Rembiakowska, & Rembiakowska, 2017). Some diseases such as Parkinson's disease, cancers, and childhood leukemia or lymphomas are reported as a reason linked to the exposure from dietary pesticide residue (Curl et al., 2015; Ye, 2015; Moisan et al., 2015, 2013; Mie et al., 2017).

However, it is not always clearly developed from a similar business model, and how to implement it into the healthcare sector remains unclear. The aim of this study is to contribute to environmental sustainability management research by clarifying the conceptual framework of patients' environmental sustainability performance in the healthcare industry sector. This contribution takes the form of integrating the theoretical aspect of consumer behavior research but linked by the theory of planned behavior (TPB) and Radder and Le Roux's model. An integrative conceptual framework for future research develops these five research propositions, thereby enriching research on patients' environmental sustainability performance and maintenance on the role of the healthcare industry specialist in the creation of service value. This study will provide an overview of safety standards and market related forces influencing patients' environmental sustainability performance. Furthermore, this study will propose a conceptual framework for patents buying intention on healthcare products to support selling healthcare products in the emerging markets.

1.1. Problem statement

Factor that determining consumer buying intention have been brought to light marketing research, however, the information of cultural influencing, market and customer related factors still is far away for healthcare industries marketer engaging in the healthcare service sector. In Vietnam, there is a variety of and healthcare industries

doing business in the healthcare service sector. Some of the healthcare specialists and marketers are focusing on different groups of socio-demographic variables on patents consumer performance. In the medical and pharmaceutical industries, the patents go pharmacy and hospital to get healthcare productsand services somewhere. So the information for the healthcare specialists and marketers are that patients' expectation regarding healthcare industries move upward and this study attempts to fill the gap by developing conceptual framework on the relationships between safety standards and market-related forces in leading medical and pharmaceutical products consumption in the healthcare industry. Limited research has explored the ways investigating the relationship between consumer related forces and consumer behavior in healthcare industry (Sakthirama & Venkatram, 2013; Radder & Le Roux, 2005). However, the implementation of Radder and Le Roux's Consumer Food Choice Model and the impact of food choice motives are still in a nascent stage (Sakthirama & Venkatram, 2013) in emerging countries. The awareness of green supply chain management not only restrict the use of chemical compounds, but it also not permitted pesticides are not permitted in certified dietary supplements, the requirements for safe raw materials production are not nearly as stringent (Simmons, 2008). However, there are a few studies on green supply chain management in the healthcare sector. Furthermore, there are few cases studies on supply chain management for healthcare products in developing countries, but few in the construction industry. The purpose of research is to develop medical business model to promote patients' environmental sustainability performance and medical services improvement for the healthcarebusiness model innovation to possess a competitive advantage in the medical industry.

Table 1: Literature Summary for Radder and Le Roux's Consumer Food Choice Model

Studies	Findings or Suggestions	Limitations
Sakthirama and Venkatram (2013)	Concern of environmental protection, sensory appeal, and natural contents were the major factor influencing the consumption of organic tea	The organizational concept does not take into account environmental sustainability in the healthcare industry sector.
Radder and Le Roux (2005)	Consumer related factors included health consideration, sensory variables, social interactions, Familiarity and habit, psychographics and demographics, while the most important market-related issues comprise price, distribution and promotion. Understanding of all these factors isrequired to better target the promotion of venison as a health food choice.	The organizational concept does not take into account environmental sustainability in the healthcare industry sector.

1.2. Aim(s)

The aims of this study are twofold: (1) To determine the relative influence of factors affecting patients' environmental sustainability performance (2) To develop a theoretical foundation with the consideration of multilevel factors namely, safety standards performance and market related performance in the healthcare sector there is a need for the objectives. In addition, the relationship between safety standards and patients environmental sustainability performance of healthcare industry represents a gap to be filled in the literature on the healthcare sector, which links Green Supply Chain Management (GSCM) in practices.

2. Literature review

2.1. Environmental management: Green Supply Chain Management (GSCM)

Damall, Jolley, and Handfield (2008) defines supply chain management as the application of environmental management principles to the entire set of activities across the whole customer order cycle, including design, procurement, manufacturing and assembly, packaging, logistics, and distribution. Some studies also emphasize environmental concerns in greening a supply chain, defining it as a set of supply chain management policies, and relationships that pay close consideration to the natural environment when an enterprise distributes its resources (Hervani, Helms, & Sarkis, 2005; Zhu, Sarkis, & Lai, 2008). In addition, Choong, Chew, Syaiful, and Abdul (2003) stated that environmental awareness should be integrated into SCM throughout the whole process, from international standard of raw material to the terminal disposal of goods to achieve minimize environmental negative effects for environmentally sustainable.

Environmental sustainability performance has been supported by analyzing the influence of customer recognition of such products on their willingness to repurchase (Seo, Seo, Lee, & Lee, 2015; Sreejith & Shukre, 2016; Won, Park, Song, & Shin, 2015). A study of Won et al. (2015) focuses on three sub-activities such as products, process, and quality management activities. The findings indicate that market orientation does affect management performance. The results of a number of prior studies on the correlation between market orientation and management performance have indicated that market orientation does affect management performance. Seo et al. (2015) and Sreejith and Shukre (2016) used the consumer trust model as the basis of their theoretical model. The findings indicate that efforts need to be made to recover consumer trust as many respondents stated that their trust levels were low (Seo et al., 2015). According to Sreejith and Shukre (2016), the study is to elicit antecedents that influence the buying of counterfeit products in an emerging city. The findings

suggest that safety implications have a significant impact on the buying of counterfeits in an emerging city.

Recently, Khoi, Dung, and Nga (2016) conducted a study on Japanese manufacturing and found that supply chain collaboration impact form of Research and Development (R&D) investment in environmental technologies. Further, Kim and McDonald (2018) conducted study on the natural environment and leading industry for integrating environmental thinking into green supply chain management (GSCM). According to Settanni, Harrington, and Srari (2017), pharmaceutical supply chain management on drugs is to ultimately deliver medical and healthcare sector outcomes so long as medicines are available, affordable and safe. The pharmaceutical supply chain appears to make specific dimensions such as healthcare production, safety storage, and safety distribution, and patients' satisfaction and national legislation of the level of complexity of safety standard management for delivering healthcare service outcomes on patents' environmental sustainability performance. One main advantage of supply chain management on healthcare products are that the safety management in terms of three segmentations such as regulation, standards and comprising the use of safety raw materials such as green manure for pollution prevention (Mie et al., 2017).

2.2. Good environmental performance

In last few decades, GSCM has a strong impact on Europe and United States. However, the major problem of the GSCM in medical and pharmaceutical products has a number of distinctive characteristics from conventional produce that make it a particularly interesting case study in supply chain evolution. Antoniolli (2016) proposed involving Information Technology (IT) in order to adhere the customer demand in terms of management of the pharmaceutical industry. Another related study, pharmaceutical supply chain management on drugs is to ultimately deliver medical and healthcare sector outcomes so long as medicines are available, affordable and safe (Settanni et al., 2017). With such healthcare manufacturing practices, GSCM is the sequence of processes involved in the materials management, production and distribution of a product by applying advanced technology for minimizing environmental damage throughout the process (Pham, 2017). The food industry has changed a great deal since the 1940s with increases in purchasing power, the introduction of packaging, and extensive mechanization and development of factory processes. It could be argued that such developments have also increased the food industry's dependency on energy at the industrial manufacturing stage (Glover, Champion, Daniels, & Dainty, 2014).

The introduction of the (World Bank Group, 2016) made a significant impact on how heavy use of chemicals their hazardous at the expenses of the environmental consequences. The regulation on hazardous material

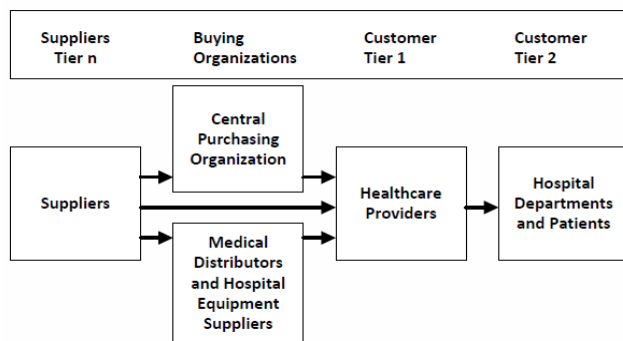
regulation creates incentives and obligations for various players along the supply chain in emerging countries, can effectively promote resource efficiency. The agricultural product safety management makes compose of 2 global standards. First, Hazard Analysis Critical Control Point (HACCP) is designed to help producers identify and minimize opportunities for contamination in their production practices. Safety standards certification is production systems that maintain the environmental sustainability, using pesticides and promoting eco packaging, for instance, the use of antibiotics and growth hormones. The ultimately deliver medical and healthcare sector must respect established norms in all production stages, from the seeding process until packaging, always concerning about the process' impact on the natural environment (Vieira, 2013). Most of these literatures have focused on standard regulation for hazardous in pharmaceutical supply chain measurement.

2.3. The model of GSCM on medical sector

Past research investigates focused supply chain for organic products model for application in construction supply chains (Nguyen, 2011). There is no doubt that supply chains should pay attention to the elements for improvements are needed in processes, products and procedures, and distribution of raw materials to the retailers. According to Polater and Demirdogen (2018), there are three elements of green supply chain:

Supplier, distribution and hospital equipment suppliers, and healthcare providers

- (1) The green procedure which provides equipment and materials that facilitates production.
- (2) Transformation and hospital equipment suppliers.
- (3) Healthcare providers.



*Adapted from Polater's Turkish Healthcare SC model (Polater & Demirdogen, 2018)

Figure 1: Model-based supply chains in healthcare sector

From the above Figure 1, it is evident that a healthcare industry sector has as supply chains as it has supplier, buying organizations, and customer, because for each

medical distributor's product, the supplier's requirements and the conventional tactics of purchasing might be different. In addition, medical production and transportation will be eco-friendly, distribution systems constructed in the most optimal for reducing the environmental costs of hospital equipment supplier.

According to Hijaz, Al-Hujran, Al-Debei, and Abu-Khajil (2015), implementation GSCM can be defined as to improve the environmental overall performance of both customers and suppliers. Frederick and Elting (2010) is focused on policies held, actions taken and relationships formed in responses to concerns related to the natural environment with regard to the design, acquisition and services. While, hospital equipment operations in healthcare sector supply chains involve central purchasing organization such as transportation to processing, packing, transportation to sales points and use (Polater & Demirdogen, 2018).

They say the efficient and timely post-harvest operations at the farm and attention to storage and transportation conditions are critical to ensuring optimal quality of the organic products at the point of sale and for consumption. These stages are needed for high-quality organic products, such as grading of grain size, polishing and screening out the damaged grains. Thus, the last key area of implementation GSCM is an execution.

The GSCM is integrative activities in planning that involved during the early stage of planning (Edwardson & Santacoloma, 2013). While, the green supply chain planning is to reduce the waste by reusing and thus readily assist in groups such as marketing, engineering, production and other (Choong et al., 2003). This definition identified managing information systems, inventory management, warehousing, customer service, and after-market disposition of packaging and materials as part of the supply chain (Darnall et al., 2008). The key areas of the green supply chain planning, green procurement and green supply chain execution are the combination of activities that need to be implementing GSCM to the supply chain. Though the suppliers in healthcare industry sector are different from production processes in factories, GSCM can be useful and effective in market sector (Frederick & Elting, 2010). When operating properly and scientifically, GSCM allow organic food to be produced, transported and consumed in the right processes, quality and value-added aspects.

3. Development of hybrid safety standard market consumer interconnector

For the patients in hospital, the variable of products safety standards and market related forces will be added to the developed model. Second, a safety and market and patients interconnector variable will be added into the developed model. In line, with suggested patients environmental sustainability performance model and patients'

attitudes and behavior towards market related performance and safety standards to behavior a certain way are closely linked by the model development in Figure 2. Indicates the level of business model proposed to result from different combinations of safety standards performance and market related performance in accordance with patients' environmental sustainability performance (Figure 2).

The model development in this research is to explore the patients' environmental sustainability performance in the healthcare sector. This research raised questions about the lack of a theoretical framework in patients environmental sustainability performance towards healthcare services in associated with market-related forces, products distinctiveness, and safety standard performance and food

safety standards. The market-related performance and safety standards performance was applied to provide a solid theoretical foundation for the proposed study model can help emphasizes these aspects should assist in not only identifying consumer and market-related factors but also in delineating the structural relationships between the factors (environmental benefit, food safety risk management, price, and product quality) and patients' environmental sustainability performance. In the context of green products consumption with investigating purchase, the invention has been found as useful additions into the Theory of Planned Behaviour (Maichum, Parichatnon, & Peng, 2016; Humaira & Hudrasyah, 2016; Chong, 2013; Cong, Olsen, & Tuu, 2013; Torbati, 2017).

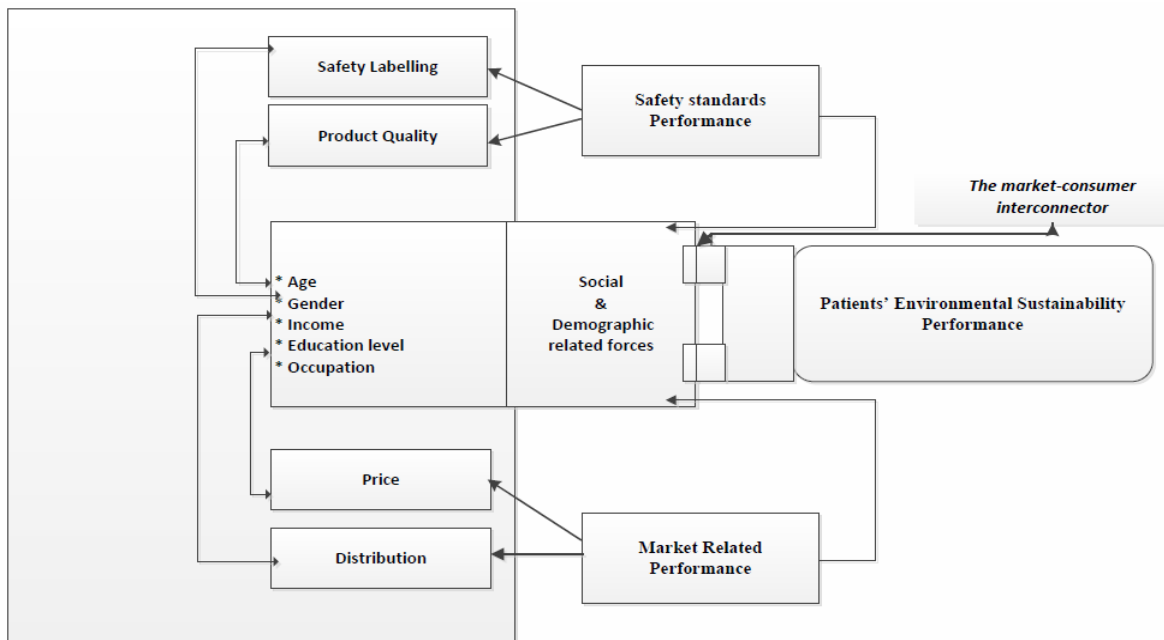


Figure 2: An integrative framework for the study of patients' environmental sustainability performance (own developed).

Table 2: Literature Summary for Theory of Planned Behaviour (TPB)

Studies	Findings or Suggestions	Limitation
Chong (2013)	The strongest factors in this relation are knowledge and education, environment concerns, government support and policy.	The organizational concept does not take into account environmental sustainability in the healthcare industry sector.
Cong, Olsen, and Tuu (2013)	Attitude, social norms, descriptive norms and behavioral control. All factors had significantly positive effect on behavioral intention.	The organizational concept does not take into account environmental sustainability in the healthcare industry sector.
Wee, Ariff, Zakuan, & Tajudin (2014)	The result indicated that intention to purchase organic food was significantly influenced by the consumer's perception of safety, health, environmental factors and animal welfare of the products.	The concept of presence of nutrient and health claims does not take into account environmental sustainability in the healthcare industry sector.
Humaira and Hudrasyah (2016)	The results found health consciousness and organic knowledge and trust have significant influences on attitude in Indonesia.	The concept of presence of nutrient and health claims does not take into account environmental sustainability in the healthcare industry sector.
Torbati (2017)	The impact of attitude and mental norm on purchase intention has been positive and significant. Perceived behavioral control has had a positive impact on purchase behavior directly as well.	The organizational concept does not take into account environmental sustainability in the healthcare industry sector.

3.1. Safety labelling

Arvola No Reference (2008) examined the usefulness of integrating measures of effective and moral attitudes toward green products. Maichum et al. (2016) examined how Thai consumer feeling of purchase intention towards green products for environmental benefits related to attitude, behavioural control, and subjects norms. Pham, Nguyen, Thu, Phan, and Nguyen (2018) focused on the purchasing behaviour of health food by young consumers in Vietnam. They found a measure of environmental concern, safety concerns, sensory, health consciousness, and media exposure. These studies failed to support the additional predictive variables of purchase intention such as sensory, safety risk management, psychographic, consumer-related forces, market-related forces, products distinctiveness, and cultural value system. While several previous studies have focused on environmental concern, nutrition, personal norms and awareness of consumer buying behaviour towards green products. However, an increasing number of suppliers are introducing or have introduced private safety management labelling and government guidelines such as national legislation (USDA, EU logos) on the labelling. Mimi, Radam, and Yacob, (2010) demonstrated that a substantial portion of the variance between health and safety might prompt the research. Onel (2017) states that government policymakers and marketers are advised to adopt various rules, regulations, sustainability marketing to help consumers become more informed in terms of communicating different normative aspects of consumer buying intention.

A study showed the aspect of safety standard influents consumer buying intention on green products (Rimal, Moon, & Balasubramanian, 2005; Howard & Elting, 2013). Similarly to HACCP implementation, motives and barriers are described in the literature as critical factors for ISO 9001 quality system effectiveness, with a great influence on its successful implementation (Kafetzopoulos & Gotzamani, 2014). According to Bhusnure No Reference (2018), industry hazard defined as an occurrence of injury or death from unsafety of industrial accidents. The developed model made up identification of safety standards management and how to protect from unsafety accidents by implementing of guideline regulation. Furthermore, it is also important how the patients attitude towards medical and pharmaceutical products safety standards and products safety labelling management (labelled as purchase intention towards private logos, National legislation, ISO & HACCP), which can depend on previous purchase experiences or consumers' food safety standards beliefs. So, both consumer attitudes towards food safety standards and purchase intention towards organic food products are of important information for a consumer's judgement of safety standards and labelling management in healthcare industry. Component development 1 made up relationships between safety labelling variable and patients' environmental sustainability performance.

Research proposition 1: There is a significant and positive relationship between safety labelling variable and patients' environmental sustainability performance

3.2. Product quality

Even with the above research, the findings have established for professionals in food safety system that it is becoming increasingly important to be environmental sustainability by applying the food production principles to all procedures such as food supply, distribution, consumption, nutrition, health outcome (Srivastava, 2007; Prabhakar, Sano, & Srivastava, 2010; Vidgen & Gallegos, 2013; Mohanty & Prakash, 2014; Sinh, Hung, Tongkorn, Reihard, Huong, Phuc, & Fred, 2016). For example, Sinh et al. (2016) investigated relationships between safety and a public health concerns in Vietnam and shared responsibility by many actors along the value supply chain. Findings indicated that the perceived freshness of pork, along with trust in the seller and in the pork production process, were strong indicators of consumer preference.

However, their findings did not come from testing the hypothesis which considered the connection between integration of marketing management of market related forces and consumer related forces, so their finding was interesting but little literature on the medical and pharmaceutical products safety consideration as market related forces to identify patients' environmental sustainability performances in the healthcare sector. According to York, Wainright, and Chen (2017), the scarcity of study in medical and pharmaceutical service in supply chain management can be contributed in the healthcare industry and service due to environmental consideration, technological innovation, and business model development.

According to Truong, Yap, and Ineson (2012), potential Vietnamese consumers are very concerned about safety whilst the females also appreciated their nutritional value. Findings that indicated environmental sustainability concerns did not influence consumer buying decisions. Because of their perceived superior quality, potential Vietnamese consumers were not priced sensitive towards medical and pharmaceutical products. Next, environmental consideration is also important how environmental consideration influences on consumer buying intention. According to existing studies, values and pro-environmental behaviour on consumer intention are an important consideration when choosing green products for the benefit of environmental and society (Zhou, Thøgersen, Ruan, & Huang, 2013). Variables of Consumer behaviour, such as safety, environmentally friendly welfare and quality are also the main factors in the consumer perception, actual purchase behaviour (Wee, Bin, Zakuan, & Tajudin, 2012; Voon, Sing, Ngui, & Agrawal, 2011). So both attitudes towards purchase green products and attitude towards safety

standards and environmentally friendly welfare are important for a consumer's awareness. Component development 3 made up relationships between product quality variable and patients' environmental sustainability performance.

Research proposition 2: There is a significant and positive relationship between product quality variable and patients' environmental sustainability performance

3.3. Socio-demographic variables

Shukla and Banerjee (2013) examine the role played by the socio-demographic variables of gender, age, education, income and family size in influencing the attitude towards private label brands. They observed that high-income consumers demonstrate lower private label brand proneness. Nath, Agrawal, Gautam, and Sharma (2015) have argued that who are the green consumers in terms of age, education, socio-economic status, marital status and number of children. The six key demographic variables in this study will be investigated as independent measures: age, gender, income, education, presence of children, and family size. In addition, Shukla and Banerjee (2013) measured that direct influence of socio-demographic segments on the attitude towards private label brands. According to research so far, Shukla and Banerjee (2013), Nath et al. (2015) examine the role played by the socio-demographic variables of gender, age, education, income and family size in influencing the attitude towards private label brands.

The five key demographic variables in this study will be investigated as independent measures: age, gender, income, education, presence of children, and family size. In addition, Shukla and Banerjee (2013) measured that direct influence of socio-demographics segments (Gender, Age, Occupation, Education, Income) on the attitude towards private label brands. The findings indicate that the cultural value of emerging market may lead to the development of new products and services within the products segment. For example, the profile of social media holds (1) Personal data (2) Communication data (3) Community data (4) Private roles (friend, relative, father, mother, child) (5) Civic roles (socio-cultural roles as community members, neighborhood association). The advertisement and promotion are important to understand factor as a market-related forces in developed model influence patients' environmental sustainability performance in the healthcare sector. The socio-demographic variables are important to understand factor in Radder and Le Roux's consumer choice model influence consumer buying intention in healthcare industry. Component development 5 made up relationships between socio-demographics variables and patients' environmental sustainability performance.

Research proposition 3: There is a significant and positive

relationship between socio-demographics variables and patients' environmental sustainability performance

3.4. Price

No publication on price-related affective processes of consumer behavior regarding organic and market related forces for green products were identified (Rodiger & Hamm, 2015; Sakthirama & Venkatram, 2013). However some previous research results show that category-specific insight can be used to decrease prices for product category for which organic consumers 'price knowledge is relatively high and willingness to pay is relatively low (Rödiger & Hamm, 2015). Therefore, when purchasing healthcare products, patients' environmental sustainability performance may be influenced by price which claims about positive effect of patients' environmental sustainability performance.

Jetter and Cassady (2006) investigated distribution differences between high-income and low-income consumers. The results showed that customer in higher-income access to consumer usually. However, customer in low income access small independent healthcare service sector. Therefore, when purchasing organic food, green consumer may be influenced by distribution about positive effect of buying intention to organic food. Component development 6 made up relationships between product price variable and patients' environmental sustainability performance.

Research proposition 4: There is a significant and positive relationship between product price variable and patients' environmental sustainability performance

4. Conclusion

The article provides a synthesis with a view to clarifying the concept of safety standards and market-related performance. Situated within a line of research model on the theory of planned behaviour (TPB) and Radder and Le Roux's model, it proposes developing the concept of patients' environmental sustainability performance in terms of safety standards and market-related performance. The conceptual framework makes it possible to build a conceptual bridge between the factor of cognition on safety standards and market-related forces and patients' environmental sustainability performance. The contribution of this study concerns the role of patients in the creation of value. By adopting a safety standard and market-related forces view of environmental sustainability performance, this research proposes not only that the healthcare industry manager has a degree of creativity in constructing safety standards but also that patients play an active role in the creation of value on environmental sustainability

performance. According to Pham (2017), the factors affecting for sustainable development of Vietnam's supply chain are influenced by the following six key factors such as manufacturing, inventory, location, transportation, information and supply chain relationships. However, the overuse of preventing chemicals has damaged many aspects of natural resources as caused environmental degradation through pollution (Giang, 2015). The green supply chain initiatives: eco-design, certifying suppliers, purchasing green materials and eco-friendly packaging, transportation, total quality environmental management and materials recycled, which ideal close the loop of the supply chain system (Cosimato, 2015).

The paper has an insight into the importance of GSCM in healthcare sector, how it has applied to healthcare business sector. Also, it has reviewed that though there have been few healthcare business model on the medical and pharmaceutical sector of green supply chain, only in a few of the cases reviewed on general agricultural sector has been said about R&D investment of multi international corporations strive for business profits in any literature about foreign direct investment by healthcare industry. This lack of relative literature, has pointed out that there is a requirement of green supply chain management on healthcare sector. The hypothesis developed in this research is to explore the patients' environmental sustainability toward healthcare products and attitudes toward food safety standards in the healthcare sector. This research raised questions about the lack of a theoretical framework in patients' environmental sustainability studies that explore patients' performance and intention is associated with safety standards and market-related forces. The theory of Planned Behaviour can be applied to provide a solid theoretical foundation for the proposed study model can help emphasizes these aspects should assist in not only identifying consumer and market-related factors but also in delineating the structural relationships between the factors (health consideration, sensory variable, environmental benefit, food safety risk management, price, subjective norms and product distinctiveness) and consumer purchasing intention.

5. Contribution to the practical perspective

A contribution to practical perspective will support beneficial aspect to government policymakers, marketers, and patients who can apply the practical perspective to their valuable medical and pharmaceutical business sector. For example, consumer based forces, market based forces and patients' environmental sustainability performances can use the information to improve GSCM in healthcare industry and promoting safety healthcare services consumption. The second contribution to practical perspective will be that it not only predicted medical and pharmaceutical products risks management, GSCM, and green marketing but also patients'

environmental sustainability performances in healthcare industry. This study can offer valuable information on green consumerism on medical and pharmaceutical products that can be used by the government policymakers and marketers in terms of the products safety policy level and the GSCM level.

6. Limitation and direction for future research

The lack of empirical verification of our model, a limitation of our paper, can be addressed in future empirical studies by using the conceptual framework presented in this paper. This paper did not statistically determine the relationship between the various dimensions of restaurateurs' organic food consumption. In future, the researcher can consider the conceptual framework in order to compare the patients' satisfaction processes cross-countries to determine whether there are significant differences between these two consumer groups in the cultural process (Individualism and collectivism) and demographic variables of healthcare products. The further research will predict that patients' environmental sustainability performance for Medical Industry values in the same conceptual model.

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