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A Study of Everett Rogers Adaptation Factors Acting On Green Products, While Establishing a 9ps Framework in Green Marketing Mix

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Abstract

Increased awareness of issues related to environment, building concern for environmental problems, resulting in new public policies and business shift. New public and business policies have led to drastic shift in consumer's behavior and attitude towards their life. There is change in consumer attitudes towards green products and green marketing strategy. People (consumers) are trying to purchase and use more green products, to reduce negative impact to the environment. To compete in this changing marketing, which is result of changing consumer attitude, organizations and businesses are trying to develop measures and gain edge in competitive market. Green marketing is still in its initial phase; source of information being limited in market and literature, to help consumers and marketers. The purpose of this study was to: (i) examine growing importance of green marketing in gemstone industry (ii) examine the importance of marketing mix as well as social marketing in green marketing (iii) to inculcate public relations in the list of the Ps of marketing (iv) testing relation between the Ps of marketing and Diffusion of Innovation Theory.

The primary data for this research are collected from traders, merchants, brokers, business owners in gemstone industry, in Bangkok. A questionnaire was developed to bring all information required or related elements which was examined and compared for theories. The responses varied between business owners and brokers, end users and manufactures, and different demographics. In general, people in gemstone industry are aware of radioactive gemstones, are able to differentiate better (licensing of non-radioactive gemstones or decayed radioactive gemstones) green marketing Ps and its emergence in gemstone industry.

The purpose of this quantitative research was to understand how traders and customers in gemstone industry see green marketing as influencing factors in purchase decisions. To understand how green marketing mix, green social marketing and public relations are a sustainable part of gemstone industry while green marketing is facing Diffusion in industry. 450 questionnaires were conducted providing a thorough knowledge and understanding of how marketing Ps are related to Diffusion of Innovation theory.

Keywords: Green Marketing, Green Products, 9ps, Adaptation Factors

1. Introduction

1.1 Background

For past many years, the term Green Marketing has attracted many researchers to look for more concepts about it and spread its usefulness to the world. The term Green Marketing is still going prominence worldwide. Green marketing has no clear definition. Authors define Green Marketing according to their perceptions. Green marketing is defined to be the marketing of services or products with environmentally preferable features. This implies eco-friendly marketed products. (Trade Green & Development (html) International Green Markets, Inc. Retrieved January 2008). Industries apply "Green" concept in their business style. Green Marketing involves Marketing Mix and Social Marketing concepts. The 8 marketing mix and Social Marketing Ps; product, place, price, promotion, public, policy, partnership, and purse strings, are similar in Green Marketing Mix. Public Relations as 9th P of marketing and social marketing mix are a strong business part today. The relation between Marketing Mix, Social Marketing 8Ps and Public Relations to the variables of Everett Rogers' Diffusion of Innovation theory is necessary. Green Marketing in the late 90s was

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known as Environmental and Ecological Marketing. Since the 1960s environment related issues gained extreme business importance among societies, and government. Government policies insulate the environment and communities. The 2008 Climate Change Act was established to scale down The UK's greenhouse gas emissions, was the world's legally first binding on climate change target. (Change climate in UK, 2001).

2. Literature Review

2.1. Green Marketing

There is no particular definition of the concept Green Marketing involving marketing activities undertaken by businesses to promote positive environmental impact and reduce negative environmental activities. Being aware of importance of "Green Marketing" in marketing field brings opportunities. Green Marketing is represented as vital component of marketing, with increased media exposure and pressure preventing firm harming environment. Consumers' role is to drift purchasing trends, stated by Cherian and Jacob, 2012, Consumerism used in movement identification initially processes in consumer protection and Green products. Companies recognizing emergence of new trends in market are survivals with positive growth. There is growth of Green Marketing in all industries around the world with extended and broader nature. Green is beyond product containing environmentally friendly elements: green product, green production, green marketing, green packaging, etc. Expanding Green Marketing concept and consumer's preference towards Green Products is "conceivably the vast opportunities for any enterprise and invention commerce the world has ever witnessed" (Cairncross, 1993) [19]. Green Marketing is known as Environmental and Ecological Marketing also.

Green Marketing first appeared in late 1980s and starting of 1990s, in the academic research of Coddington, 1993; Fuller, 1999; Ottman, 1994. Fuller's (1999, p.4) definition of Green Marketing:

Hypotheses

H1: The success of Green marketing of NRC licensed gemstones as a product varies directly with its relative advantage.
 H2: The success of green marketing of NRC licensed gemstone as a product varies directly with its observability.
 H3: The success of green marketing of NRC licensed gemstone as a product varies directly with its trialability.
 H4: The success of green marketing of NRC licensed gemstone as a product varies directly with its compatibility.
 H5: The success of green marketing of NRC licensed gemstone as a product varies indirectly with its complexity.
 H6: The success of green marketing of NRC licensed gemstones price varies directly with its relative advantage.
 H7: The success of green marketing of NRC licensed gemstones price varies directly with its observability.
 H8: The success of green marketing of NRC licensed gemstones price varies directly with its trialability.
 H9: The success of green marketing of NRC licensed gemstones price varies directly with its compatibility.
 H10: The success of green marketing of NRC licensed gemstones price varies indirectly with its complexity.
 H11: The success of green marketing of NRC licensed gemstone placement varies directly with its relative advantage.

H12: The success of green marketing of NRC licensed gemstones placement varies directly with its observability.
 H13: The success of green marketing of NRC licensed gemstones placement varies directly with its trialability.
 H14: The success of green marketing of NRC licensed gemstones placement varies directly with its compatibility.
 H15: The success of green marketing of NRC licensed gemstones placement varies indirectly with its complexity.
 H16: The success of green marketing of NRC licensed gemstones promotion varies directly with its relative advantage.
 H17: The success of green marketing of NRC licensed gemstones promotion varies directly with its observability.
 H18: The success of green marketing of NRC licensed gemstones promotion varies directly with its trialability.
 H19: The success of green marketing of NRC licensed gemstones promotion varies directly with its compatibility.
 H20: The success of green marketing of NRC licensed gemstones promotion varies indirectly with its complexity.
 H21: The success of green marketing of NRC licensed gemstones public varies directly with its relative advantage.
 H22: The success of green marketing of NRC licensed gemstone public varies directly with its observability.
 H23: The success of green marketing of NRC licensed gemstones public varies directly with its trialability.
 H24: The success of green marketing of NRC licensed gemstone public varies directly with its compatibility.
 H25: The success of green marketing of NRC licensed gemstones public varies indirectly with its complexity.
 H26: The success of green marketing of NRC licensed gemstones partnership varies directly with its relative advantage.
 H27: The success of green marketing of NRC licensed gemstones partnership varies directly with its observability.
 H28: The success of green marketing of NRC licensed gemstones partnership varies directly with its trialability.
 H29: The success of green marketing of NRC licensed gemstones partnership varies directly with its compatibility.
 H30: the success of green marketing of NRC licensed gemstones partnership varies indirectly with its complexity.
 H31: The success of green marketing of NRC licensed gemstones policy varies directly with its relative advantage.
 H32: The success of green marketing of NRC licensed gemstones policy varies directly with its observability.
 H33: The success of green marketing of NRC licensed gemstones policy varies directly with its trialability.
 H34: The success of green marketing of NRC licensed gemstones policy varies directly with its compatibility.
 H35: The success of green marketing of NRC licensed gemstones policy varies indirectly with its complexity.
 H36: The success of green marketing of NRC licensed gemstones purse strings varies directly with its relative advantage.
 H37: The success of green marketing of NRC licensed gemstones purse string varies directly with its observability.
 H38: The success of green marketing of NRC licensed gemstones purse string varies directly with its trialability.
 H39: The success of green marketing of NRC licensed gemstones purse string varies directly with its compatibility.
 H40: The success of green marketing of NRC licensed gemstone purse string varies indirectly with its complexity.
 H41: The success of green marketing of NRC licensed gemstones public relations varies directly with its relative advantage.

H42: The success of green marketing of NRC licensed gemstones public relations varies directly with its observability.

H43: The success of green marketing of NRC licensed gemstones public relations varies directly with its trialability.

H44: The success of green marketing of NRC licensed gemstones public relations varies directly with its compatibility.

H45: The success of green marketing of NRC licensed gemstones public relations varies indirectly with its complexity.

3. Methodology

The purpose of this thesis is to develop a thorough understanding of marketing factors in green marketing which influences the perspective of consumers towards product with influence of Diffusion of Innovation theory in gemstone industry. This study employed a quantitative research method, using online questionnaires to explain relation of marketing Ps with Diffusion of Innovation theory.

This research is a type of basic business research, because it was conducted in order to get answers to concepts of green marketing which will be helpful and open to all organizations. This research is evaluating the spread of Green Marketing, which can be studied again in future to find its new levels of involvement in same market. This is a performance monitoring research which will indicate how important green marketing is in market and the level of its involvement. This research is a type of market tracking research which observed and analyzed trends in gemstone industry volume and compared the brand sharing process.

4. Analysis

Results of the study of Everett Roger's Adaptation Factors acting on Green Products, while establishing a 9Ps Framework in Green Marketing Mix, finding the relation between factors of Diffusion of Innovation factors and Marketing factors are shown below. The result of the regression analysis and the forty five tested hypotheses, using appropriate statistical methods are shown. In order to study the Diffusion of Innovation of NRC licensed gemstones it is important to understand at which stage of diffusion cycle is the concept in Bangkok. To attempt to do this, the study considered the variables and hypothesis discussed.

The Regression Analysis

4.4.1. The Regression Analysis of 9Ps in relation with relative advantages.

1. Relative Advantages = $1.105 + 0.285(\text{Product})$
2. Relative Advantages = $1.105 - 0.112(\text{Price})$
3. Relative Advantages = $1.105 - 0.005(\text{Place})$
4. Relative Advantages = $1.105 + 0.177(\text{Promotion})$
5. Relative Advantages = $1.105 + 0.042(\text{Public})$
6. Relative Advantages = $1.105 + 0.133(\text{Partnership})$
7. Relative Advantages = $1.105 + 0.130(\text{Policy})$
8. Relative Advantages = $1.105 - 0.026(\text{Purse Strings})$
9. Relative Advantages = $1.105 + 0.208(\text{Public Relations})$

4.4.2. The Regression Analysis of 9Ps in relation with observability.

1. Observability = $0.883 + 0.130(\text{Product})$
2. Observability = $0.883 + 0.042(\text{Price})$
3. Observability = $0.883 + 0.136(\text{Place})$

4. Observability = $0.883 - 0.025(\text{Promotion})$
5. Observability = $0.883 + 0.014(\text{Public})$
6. Observability = $0.883 - 0.102(\text{Partnership})$
7. Observability = $0.883 + 0.164(\text{Policy})$
8. Observability = $0.883 + 0.013(\text{Purse Strings})$
9. Observability = $0.883 + 0.485(\text{Public Relations})$

4.4.3. The Regression Analysis of 9Ps in relation with triability.

1. Triability = $0.904 + 0.492(\text{Product})$
2. Triability = $0.904 + 0.072(\text{Price})$
3. Triability = $0.904 - 0.058(\text{Place})$
4. Triability = $0.904 + 0.036(\text{Promotion})$
5. Triability = $0.904 - 0.044(\text{Public})$
6. Triability = $0.904 + 0.161(\text{Partnership})$
7. Triability = $0.904 + 0.031(\text{Policy})$
8. Triability = $0.904 + 0.092(\text{Purse Strings})$
9. Triability = $0.904 + 0.079(\text{Public Relations})$

4.4.4. The Regression Analysis of 9Ps in relation with compatibility.

1. Compatibility = $1.470 + 0.405(\text{Product})$
2. Compatibility = $1.470 - 0.056(\text{Price})$
3. Compatibility = $1.470 + 0.089(\text{Place})$
4. Compatibility = $1.470 + 0.146(\text{Promotion})$
5. Compatibility = $1.470 + 0.024(\text{Public})$
6. Compatibility = $1.470 + 0.208(\text{Partnership})$
7. Compatibility = $1.470 - 0.055(\text{Policy})$
8. Compatibility = $1.470 - 0.038(\text{Purse Strings})$
9. Compatibility = $1.470 + 0.041(\text{Public Relations})$

4.4.5. The Regression Analysis of 9Ps in relation with complexity.

The equations formed to indicate the relationship of 9Ps with complexity are:

1. Complexity = $0.666 + 0.084(\text{Product})$
2. Complexity = $0.666 + 0.147(\text{Price})$
3. Complexity = $0.666 + 0.046(\text{Place})$
4. Complexity = $0.666 - 0.165(\text{Promotion})$
5. Complexity = $0.666 + 0.203(\text{Public})$
6. Complexity = $0.666 + 0.053(\text{Partnership})$
7. Complexity = $0.666 + 0.073(\text{Policy})$
8. Complexity = $0.666 - 0.049(\text{Purse Strings})$
9. Complexity = $0.666 + 0.510(\text{Public Relations})$

Summary

Product is in direct relation with all factors of Diffusion of Innovation: relative advantages, observability, triability, compatibility and complexity, proving H1, H2, H3, H4 is confirmed and H5 is not confirmed. Price is in direct relation with observability and triability proving H7, and H8 and indirect complexity H10 is confirmed. Place is directly related to observability and compatibility proving H12 and H14 confirmed. Promotion is in direct relation with relative advantages, triability, and compatibility and indirect relation with complexity proving H16, H18, H19, and H20 confirmed. Public directly relates with relative advantages, observability and compatibility proving H21, H22, and H24 is confirmed. Partnership is directly related with relative advantages, triability, and compatibility proving H26, H28, and H29 is confirmed. Policy is in direct relation with relative advantages, observability, and triability proving H31, H32, H33 confirmed. Purse Strings is in direct relation with observability, triability and indirect relation complexity

proving H37, H38, H40 is confirmed. Public Relations are in direct relations to relative advantages, observability, triability, and compatibility proving H41, H42, H43, H44 is confirmed.

5. Discussion

Protection and preservation of earth's resources and the environment have become prime considerations both in business and public policy. As society became more concerned with the natural environment, in NRC licensing gemstones, businesses have begun to change their strategy in an attempt to address the radioactive concerns. Some businesses are quick to respond with NRC licensing gemstones policy for green environment and green marketing and change their business strategy such as NRC licensing gemstones, green public relations and NRC licensing policy, this result in less harmful gemstones, radiation free gemstones, integrate environmental issues into their organization activities and waste minimization. These strategies "Green Marketing" and "Environmental Marketing" became one of the most prominent in emerging marketing sector, attracting the great deal of discussion among the popular and professional, which took boom in Bangkok gemstones market as NRC licensed gemstones.

Product is in direct relation with all factors of Diffusion of Innovation: relative advantages, observability, triability, compatibility and complexity, proving H1, H2, H3, H4 is confirmed. Price is in direct relation with observability and triability proving H7, and H8 and indirect complexity H10 is confirmed. Place is directly related to observability and compatibility proving H12 and H14 confirmed. Promotion is in direct relation with relative advantages, triability, and compatibility and indirect relation with complexity proving H16, H18, H19, and H20 confirmed. Public directly relates with relative advantages, observability and compatibility proving H21, H22, and H24 is confirmed. Partnership is directly related with relative advantages, triability, and compatibility proving H26, H28, and H29 is confirmed. Policy is in direct relation with relative advantages, observability, and triability proving H31, H32, H33 confirmed. Purse Strings are in direct relation with observability, triability and indirect relation complexity proving H37, H38, H40 is confirmed. Public Relations are in direct relations to relative advantages, observability, triability, and compatibility proving H41, H42, H43, H44 is confirmed.

6. Conclusion

One of the green marketing's challenges are the lack of standards in introducing NRC licensed gemstones worth to market and public public who are potential NRC licensed gemstone customers in Bangkok gemstones market are constitutes "green" and there is no clear definition of "how radioactive free is radioactive free gemstones" on gemstones or companies supplying NRC licensed gemstones. This consensus by gemstones customers, traders, policy makers, activists, and influential people has fastened the growth of use of NRC licensed gemstones in Bangkok gemstone market. Companies are often reluctant in romoting NRC licensed gemstones in green marketing attributes and customers are often skeptical about the policy and claims. Despite challenges faced by NRC licensed gemstones in Bangkok gemstone market in concept of green marketing, it has continued to gain adherents, particularly in growing

concern of radiation free products and ecofriendly environment, green markets.

Customer's behavior refers to the decision processes and acts involved in purchasing NRC licensed gemstones in Bangkok gemstone market. This study aimed in understanding the perception of customers toward NRC licensed gemstone in respect to the adaptation factors detailed by Everett Roger acting upon the 8 Ps of marketing mix and social marketing while introducing 9TH P as Public Relations. This study aimed at seeing the changes between non licensed gemstones market and NRC licensed gemstones market in Bangkok influenced by the concept of green marketing applying all 9Ps of marketing mix, social marketing and Public Relations in gemstone industry while facing the adaptation factors of Diffusion of Innovation by Everett Rogers. The study collected detailed information to identify the difference perception of NRC licensed dealers while going through factors of Diffusion of Innovation. The overall purpose of this study was to study the Factors of Diffusion of Innovation in relation with marketing mix and social marketing 8Ps and public relations as 9thP, applied to the new concept of NRC licensed gemstones to make gemstones green product, less harmful to health and environment.

Overall, current study explored the various aspects of NRC licensed gemstones as innovation to gemstone market going through Diffusion of Innovation, Diffusion of Innovation factors acting on NRC licensed gemstone marketing mix, social marketing and public relations. This study explores the relation of Diffusion of Innovation Theory adaptation factors in relation with marketing mix and social marketing in green marketing while introducing Public relation as 9th P in marketing mix and social marketing Ps model.

7. Recommendations for Future Research

The study is based on the need to study Everett Rogers adaptation factors acting on green products, while establishing a 9Ps framework in green marketing mix. The current study will knowledge of adaptation factors of Diffusion of Innovation Theory by Everett Rogers in relation to Green Marketing Ps framework. The current study will provide a valuable insight of both Diffusion of Innovation Theory and Green Marketing Mix 9P framework, to all practitioners and theoreticians who want to understand Green Marketing innovations in different industries through Diffusion of Innovation stages impacting growth of Green Marketing Mix. Since the success of green products depends of adaptation factors customer's faces and diffusion of that innovation, it is imperative that green marketing is defied as all factors that encourages all industries. Thus, the current study will also benefit green marketers as it may assist them in developing a marketing strategy that multiples growth of innovation factors and green products awareness to seek value of collective gain over self-interest. Despite significance of current study, there are major limitations on survey sampling. The study is limited to only gemstone traders in Bangkok dealing in NRC licensed gemstones or none licensed gemstones, with knowledge of NRC licensed gemstones. Who are not characterized by demographics, traders who frequently fly to Bangkok to trade in gemstones are not involved. For further research, a questionnaire with demographics study, with different market of gemstones involving Bangkok, a random sampling of population, respondents not filtered at beginning, and a larger sample size, surveyed during Bangkok gems and jewelry exhibition

for all level traders as respondents may be used to collect and analyze data.

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