Full Paper Proceeding

AN

Manila, Philippines

December 15-16, 2019

BOOK oF FULL PAPER PROCEEDINGS

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Academic Nusa International for Social Sciences & Humanities

MRSMB-2019

39th International Conference on Modern Research in Social Sciences, Management and Applied Business

Manila, Philippines
December 15-16, 2019

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Book of Full Paper Proceeding

Proceedings of the 39th International Conference on Modern Research in Social Sciences, Management and Applied Business

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MRSMB-2019
39th International Conference on Modern Research in Social Sciences, Management and Applied Business

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"International Conference of Academic Nusa International" is a platform that thrives to support the worldwide scholarly community to analyze the role played by the multidisciplinary innovations for the betterment of human societies. It also encourages academicians, practitioners, scientists, and scholars from various disciplines to come together and share their ideas about how they can make all the disciplines interact in an innovative way and to sort out the way to minimize the effect of challenges faced by the society. All the research work presented in this conference is truly exceptional, promising, and effective. These researches are designed to target the challenges that are faced by various sub-domains of the social sciences, business and economics, applied sciences, engineering and technology, health and medical sciences.

I would like to thank our honorable scientific and review committee for giving their precious time to the review process covering the papers presented in this conference. I am also highly obliged to the participants for being a part of our efforts to promote knowledge sharing and learning. We as scholars make an integral part of the leading educated class of the society that is responsible for benefitting the society with their knowledge. Let's get over all sorts of discrimination and take a look at the wider picture. Let's work together for the welfare of humanity for making the world a harmonious place to live and making it flourish in every aspect. Stay blessed.

Thank you.
Dr. Vincent W Ho
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Guidelines for Creating Value Added of Restaurant Entrepreneur for the Elderly Market

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Abstract The aim of this research was to investigate the guidelines in creating value added of restaurant entrepreneur for the elderly market. It was a qualitative research by using focus group discussion with sampling and key information 9 informants who have an experience and expertise in food service industry field. The instrument used for data collection were questions, observation and field note, voice and video recorders. The result of this study found that the guidelines for creating value added of restaurant entrepreneur for the elderly market consists of 3 dimensions as follows: first, increasing knowledge and cooking skills were included fundamental of nutrition & nutrition for elderly, Principle of cooking for elderly, Food sanitation & food safety and product development. Second, increasing knowledge and skills of art and creativity were included food & beverage service and service psychology and the art of food decorating. And third, increasing knowledge of information technology were included data recording & processing, online searching and information dissemination & food public relations.

Keywords: Value Added, Restaurant Entrepreneur, Elderly Market

INTRODUCTION

The changes in the world population structure with the increasing number of senior citizens have caused many countries to have an aging population (or become aging societies), which has both social and economic effects on these countries. Therefore, each country must have plans to support the changes at various levels, such as the 20-year national strategic framework (2017-2036) of the Thai government which consists of important issues relating to promotion and problem solving of the quality of life of the senior citizens. In addition, according to the analysis of the in-depth interviews with the foodservice industry business executives conducted by the researchers pertaining to the preparation of the food industry business, it was found that the preparation of the entrepreneurs and the cooks in terms of knowledge and skills in cooking to support customers in the elderly market in Thailand has been considered by business organizations as a top priority because the people in the elderly market were ready for high payment rates. However, it was found that the needs and expectations of the senior citizens in this market were based on solving the problems about the various changes of the senior citizens.

The senior citizens are at the age that has changed in deteriorating ways, which can be divided into 3 areas including physical and health changes, mental and emotional changes, and social changes. According to the Federation of Thai Industries regarding the new business market for the aging society, processed foods for healthy and natural foods are the groups of products and services that are likely to meet the needs of the aging society. However, in the food sector, there are weaknesses in the inadequate development of the products and services to meet the needs of senior citizens. Consequently, the government has designated the problem as one of the national development agenda (Secretariat of the House of Representatives, 2016).

The researchers, therefore, aimed to investigate ways to create added value of the restaurant entrepreneurs for the senior citizens using the focus group discussion method, which is one of the methods that could provide diverse and detailed information from group members who are experienced or have specific information (Nopkeasorn T.,2008). It is hoped that the results could be used as a tool to create competitive advantages or guidelines for policy formulation, planning and decision-making in human resource management practices in organizations to enable them to meet the needs of the senior citizens locally and globally.

LITERATURE REVIEW

Value Added Concepts

Value added is a tool that helps businesses to grow. Creating satisfaction and building credibility of a product among customers by adding value will create a competitive advantage for better customers (Customer Value). By having a better production procedures or services for being a leader of a product (Wongchai R., Srirerg S. and Siriwong P., 2017:189) and for supporting the creation of value that affects higher consumer awareness will lead to confidence in decision making to select or purchase products and services. The Department of Business Development of Ministry of Commerce (2559: 13) appoints ways that can be used to develop value added products or services for businesses which one is to pay attention to the value of products that customers want (Value Proposition) and another one is to develop value of products and services through design thinking processes (Design Thinking) which is a process that recognizes the importance of problems that occur with customers (Pain point). The process of adding value to a business is related to human resource development in an organization, which is like the cost of an

existing business. In addition, the benefits of creating value can also affect customer value development. In accordance with the study of Kanjanasilanon C. (2016: 159) customer value is the of the customer's overall worth assessment of the utility of the product or service based on the perceptions that they have received or the experience that has occurred. The evaluation criteria are based on three important factors as follows: increase importance for customers, establish and check customer satisfaction, and the quality of service with features that meet the customer specified needs.

The Elderly and Their Needs

Elderly under the Elderly Act 2003 means a person aged over 60 years old. The body of a Thai national (Department of Older Persons, 2003) of this age has changed in various ways tending to deteriorate more, and it can be divided into 3 categories as follows: 1) Physical changes consist of changes in the integumentary system, nervous system and muscular and skeletal systems, blood circulatory system, respiratory and digestive system, urinary system and the endocrine system; 2) Mental changes from awareness and attachment to one's own reasons or lack of confidence with the change, and often resulting in emotional expressions; And 3) Social change caused by the reduced social workload, coupled with the problem of bodily changes, which leads to the separation from society, and also because most of the people still think that the elderly have decreased their ability. Therefore, the elderly do not dare to socialize or have activities with others. Based on the study of the problems and health needs of the elderly of Pongdee J. and Kuhirunyaratn P. (2015: 569) it was found that at this age, having a caregiver can help solve problems of degenerative conditions of the elderly, such as osteoporosis, malnutrition, osteoarthritis, memory impairment, intelligence, bad balance (walk slowly and fall easily), easy broken bones, and the reduced immunity against diseases which is a factor that is more important for creating stability for the elderly. Moreover, from the comments of the Federation of Thai Industries about the new business market of an aging society was discussed in Secretariat of the House of Representatives (2016: 10) was found that the categories of products that are likely to meet the needs of an aging society consist of 5 main industries which are as follows: processed foods for health and natural foods, fashion furniture and lifestyle equipment for the elderly, and medical equipment. However, from the production analysis categories of the required needs for an aging society, it was found that Thai entrepreneurs still have weaknesses in the development of new products and services to meet these needs. For this reason, if it is set to be a national agenda, there will be more targeted products and services for the elderly provided by the entrepreneurs.

METHODOLOGY

The study "Guidelines for Creating Added Value for Restaurant Entrepreneurs in the Elderly Market" is qualitative research using a focus group as a data collection method. In this method, the researchers ask the participants guided questions that can elicit the answers from a group meeting in which the members can freely share information, comment and discuss important issues among the members in the group (Pattamadul N., 2003).

1. In terms of sampling and key informant, 9 informants in the study were people who had experience and expertise in different areas, including, restaurant administrators or restaurant entrepreneur representatives, nutritionists for senior citizens, academics in business and marketing, academics in the service industry, cooks, and senior citizens who dined at the restaurants. During the group discussions, a free conversational atmosphere was created, which could provide a wide range of information and a reliable triangulation process.

2 . For observation and field notes, the researchers employed the participatory observation technique. One of the researchers acted as a moderator to encourage participants to participate in the discussion, respond to comments and transfer their experience to create a data flow according to the purpose of the research.

Research Instruments

The research instruments consist of 3 parts.

1. Researchers: For detailed and complete information, the researchers must have theoretical sensitivity deriving from the preparation of knowledge from related documents and research concerning the concepts of added value and the needs of the senior citizens in food and services including their characteristics, educational background, training, and experience.

2. Questions: Unstructured open-ended questions are formed from 3 main aspects: study concept, questions and questioning issues (Posita C., 2007).

3. Recording devices: Voice and video recording applications in smartphones, notepads and pens, and the secretary who takes group conversation notes are used to record the data.

Reliability of the Research

The data triangulation method was used to verify the reliability of the data gathered from the focus groups. The method took for followings in consideration: periods, locations, and people. Besides, other core aspects were examined. For the researcher aspect, the data from the research assistant was used to compare with the data from the main researcher. For the theoretical aspect, the same information from multiple sources was investigated until theoretical saturation (Chantawanich S., 2013).

Data analysis

The data analysis process began with verbatim transcribing the video and audio recordings from the focus groups discussion. After that, the content from the transcripts was arranged, organized into categories, and analyzed for the core content to determine the main phenomena from the sub-categories to explain the phenomenon and the conclusion.

RESULTS AND DISCUSSION

Results
Creating Added Value for Entrepreneurs by Increasing Knowledge and Skills in Cooking
The data revealed that the senior citizens began to deteriorate which could be identified in 3 aspects which were 1) physical changes such as skin, nervous system, sensory systems, digestive system, and mastication, 2) psychological and emotional changes resulting in a loss of self-reliance and the acceptance by society, and 3) social changes causing a lower frequency of socializing due to health problems. Therefore, these changes could affect the foodservice industry because senior citizens were consumers with high purchasing power. In consequence, creating a way to create added value for restaurant entrepreneurs for the elderly market in terms of increasing knowledge and skills related to cooking was considered as a way to create business advantages. There were 4 aspects of the knowledge and skills found in the data.

1. Fundamental nutrition and nutrition for the elderly consisted of increasing knowledge of nutrition principles and nutrition for the elderly which could be applied in food menu design, food-specific disease knowledge of the senior citizens, and healthy food. It was also found that the benefits of the aforementioned nutrition study helped the entrepreneurs to respond to the needs of the senior citizens to know the correct energy and nutrition information gained from the consumption of that meal while using the services.

2. Principles of cooking for the elderly were guidelines that could solve health problems caused by the digestive system and oral and dental health problems, for example, constipation, bloating, reflux, and the nutrient absorption system of the senior citizens. The necessary practical guidelines can be summarized as follows.

2.1 Basic knowledge and principles for choosing raw materials included choosing materials that were not harmful to the elderly such as those that did not cause excess acid in the stomach, food and meat that were easy to digest, raw materials that were not harmful to congenital diseases, and types of foods containing fiber such as rice, flour, vegetables and fruits that were suitable for the senior citizens.

2.2 Knowledge of raw material preparation included preparing proper proportions and quantities for consumption per meal, selection of parts of raw materials, and understanding of chemical properties of raw materials used and food safety.

2.3 Cooking knowledge included cooking principles that could preserve nutritional values, cooking methods according to food-specific disease requirements, cooking to make foods that were easy to digest or easy to consume, food seasoning techniques with substituted ingredients that did not affect health and chronic diseases, and paying attention to the temperature of the food when serving.

3. Food sanitation knowledge for food safety was the management and control of various steps in food production, including the procurement of raw materials from the farm, preparation, cooking, storage, transportation of food, and distribution of food in various forms according to the standards that were suitable for the store's layout, such as HACCP or GMP and personal hygiene knowledge for restaurant entrepreneurs.

4. Product development was the knowledge and ability to design and develop new food products that could solve problems relating to pain points and health of the senior citizens, such as foods that were easily eaten or chewed and food with complete nutrition per meal.

Creating Added Value for Entrepreneurs by Increasing Knowledge and Skills in Art and Creativity
Another aspect of roles of restaurant entrepreneurs and cooking staff in creating brand awareness and good service for the elderly business group, which was a new business group, and creating a good impression on customers, was to be a provider of nutritional information, food storytelling, and cooking demonstrations during the meal for the elderly customer group. Therefore, the knowledge and skills in art and creativity in food and beverage services were another way to add more value to business entrepreneurs.

1. Food and beverage service and service psychology included understanding basic needs of the senior citizens and having a high patience level while serving due to physical changes of the senior citizen such as hearing loss and low voice volume which may cause misunderstandings and resulting in delaying services and repeating inquiries. In addition, the entrepreneurs themselves should discuss the concepts of creating food items, selecting raw materials and cooking methods suitable for senior citizens.

2. The art of food decorating dealt with the basic knowledge about art composition, including topics, size and proportion, harmony, contrast, unity, repetition, rhythm, and color, which were the important way to create added value for the entrepreneurs. The is because this knowledge was necessary for the application of the design of the food menu, the selection of raw materials with contrasting colors, the proportion of colors that conveys the mood of the food, rhythm and placement of food pieces, sauce design matching with food characteristics, and choosing safe containers for serving.

Creating Added Value for Entrepreneurs by Increasing Knowledge and Skills in Information Technology (IT)

From the changes of technology in Thailand in the 4.0 era when the food and service industry has introduced technology to develop services that customers could participate in self-service such as ordering products online and surveying food and services information. Consequently, it was found that there were 3 aspects of the guidelines for increasing the value of information technology knowledge for restaurant entrepreneurs.

1. Data recording and processing included the use of programs to record data and personal needs of consumers such as physical and health information and to calculate energy and nutrients. For instance, INMUCA-Nutrients was a program that could respond to health information for consumers in the elderly group.

2. Online searching was the ability to search for information through online sources for product and service development in each area, for example, searching for food consumption trends for the senior citizen through restaurant recommendations from TripAdvisor, finding food-related research articles for senior citizens through online databases of universities and academic institutions, learning cooking techniques from video clips on YouTube, and studying how to decorate food through Pinterest and Instagram.

3. Information dissemination and food public relations consisted of writing stories for food pictures, publicize recommended menus, recommending food consumption, food ordering and storage, and providing post-purchase services via online media.
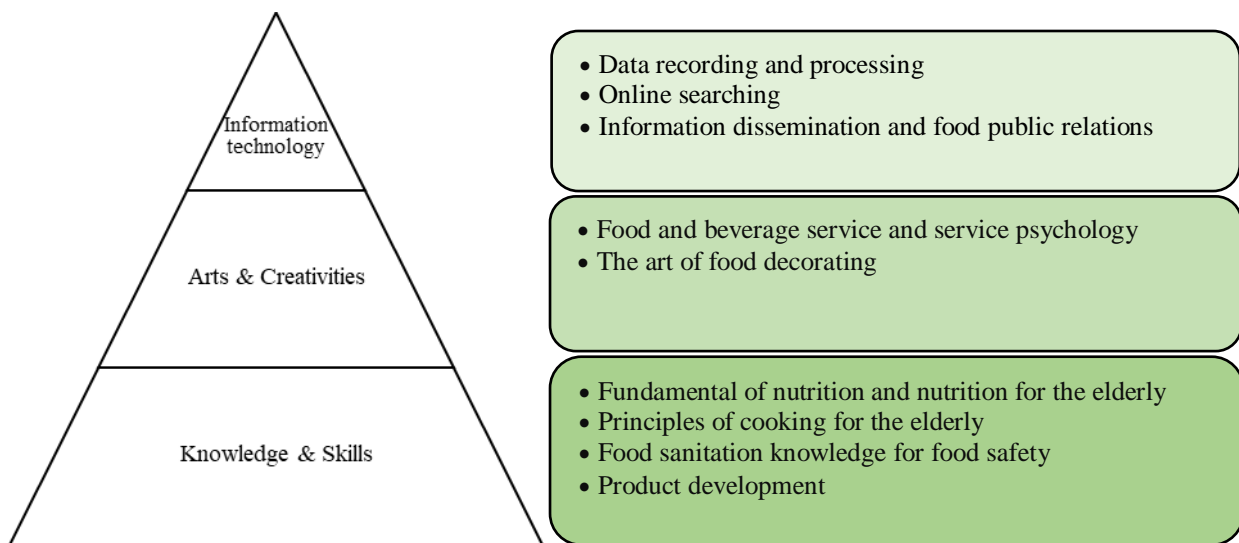

Figure 1. The Guidelines for Creating Added Value for Restaurant Entrepreneurs in Elderly Market

Discussion

From the study "Guidelines for Creating Added Value for Restaurant Entrepreneurs in Elderly Market", it was found that there were 3 aspects of the guidelines for creating added value for restaurant entrepreneurs in the elderly group.

1. To create added value for entrepreneurs by increasing knowledge and cooking skills, the followings were the main topics and important issues that should be studied.

1.1 Basic knowledge about nutrition and nutrition for the senior citizens should deal with the energy and nutrients needed for the body of the senior citizens, and food for a specific disease.

1.2 Principles of cooking for the senior citizens, following Ungprasert P. and others (2018), should cover choosing, purchasing, preparing, and seasoning raw materials to be safe, easy to chew, right amount per meal, and the right nutrition. In terms of food characteristics for the senior citizens in Bangkok, it was found that the nutritional

value affected the satisfaction of the senior citizens. If the food had proper nutrition for the age, it would satisfy the elderly more than the food with normal nutrition.

1.3 Knowledge about food sanitation for food safety, in the same line with Kaewanun C. (2018), should include the principles of food sanitation and food safety to prevent illness from food consumption. Moreover, nutritional status was important to the health of the senior citizens because if they received sufficient nutrients and energy from quality food, they would be healthy with less illness and without any malnutrition problem and able to help themselves to their full potential.

1.4 Knowledge about product development should involve the development of recipes and the ability to use market principles with food menu designs. Furthermore, the findings, consistent with the study "Factors Affecting Spending Behavior of the Senior Citizens in Bangkok" by Limpremwattana W. and Chandasang A. (2015), also revealed that the most frequent purchase of the senior citizens was food and utensils for home use. Therefore, the entrepreneurs should set the marketing strategy that would be appropriate and corresponding with the elderly customers such as promotion and detailed product description for the senior citizens.

2. Guidelines for creating added value for entrepreneurs by increasing knowledge and skills in art and creativity should include the following topics and issues.

2.1 In terms of knowledge of the art of food and beverage service, service psychology and being a part of food service for the elderly group, Mekwimon W. (2012) found that the supporting factors in promoting health and food eating behaviors of the senior citizens were receiving information about food from various media and receiving advice.

2.2For knowledge of art and food decoration, such as basic knowledge about art composition for cutting and decorating raw materials that were small and convenient to eat, and colors and food placement, it was found that, similarly to Natchanalit P. (2017), principles of art, visual art, element, design steps and the creative style were the tools that helped design food formats resulting in a new food appearance or recipe and creative benefits for employees, which were important skills for the 21st century citizens.

3. There were 3 methods to create added value for entrepreneurs by increasing knowledge and skills in information technology including the ability to 1) use technology to plan and manage the record and interpretation systems, 2) search for information through online learning resources, and 3) disseminate information and publicize the food. Soidokson N. (2013) has pointed out the benefits of using information technology in restaurant services that technology and information systems could help increase the strengths of the restaurants to rapidly respond to the needs of customers. In addition, according to the study "Aging Society:Changing Marketing Factors" by Chewasopit W. (2019), the development of products or services and marketing communication in the present day should be designed so that the elderly customers could interact with the products or online services. The organizations should also study the recorded behavioral data for future the development of products or services.

CONCLUSION AND SUGGESTIONS

Conclusion

We applied a focus group discussion, aimed to investigate ways to create added value of the restaurant entrepreneurs for the senior citizens. Also, this study contributes the ways that could be used as a tool to create competitive advantages or guidelines for policy formulation, planning and decision-making in human resource management practices in organizations to enable them to meet the needs of the senior citizens locally and globally. The result found that the guidelines for creating added value for restaurant entrepreneurs in elderly market consists 3 dimensions as follows: increasing knowledge and cooking skills, increasing knowledge and skills of art and creativity and increasing knowledge of information technology.

Suggestions

From the study of the ways to create added value for the restaurant entrepreneurs and the supporting roles of the organizations dealing with consumers in the elderly group, it was found that the entrepreneurs should develop themselves and their employees in terms of knowledge and skills by participating in the following training.

1. Food for the senior citizens and product development: The course content should consist of basic nutrition knowledge and cooking principles for senior citizens, principles of food sanitation and food safety, food and service product development for the senior citizens, and the art in menu designing and food decorating.

2. Information technology and its utilization to support the elderly market: The course content should cover the use of information technology systems for researching information, data recording and interpretation, such as compiling standard recipes, storing customer details, and food promotion for the senior citizen via online media.

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The Consumer Perception of Green Business Strategy Communication Coffee Shop in Phra Nakhon Si Ayutthaya Province

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Abstract The purpose of this research is to study the consumer perception of green business strategy communications of coffee shop business in Phra Nakhon Si Ayutthaya province, Thailand. This research uses the qualitative research method by using in-depth interviews with a group of 20 key informants, using a snowball sampling technique. The study found that consumers are aware of the coffee shop's green business. The consumers recognize only 3 aspects of environmental supply chain activities which are green purchasing, green operations, and green design. Suggestions from the research are as follows: 1. Coffee shop operators should choose to use green dissemination strategies to meet the needs of their customers and to attract their attention. 2. Coffee shop operators should not create a brand image by bringing green business dissemination strategy used for advertisement. On the contrary, there should be facts and virtue while disseminating it for the consumers to become aware of the true operational process. 3. Coffee shop operators should have a message that conveys more green business operations. The increase of frequency and consistency of dissemination strategies for green business operations can make consumers are more aware of the organization's green business activities, and maximize its benefits.

*Keywords***:** Consumer Perception, Business Strategy, Communication, Green Business, Coffee Shop

INTRODUCTION

Nowadays, many countries focus on reducing deforestation, the most important source of natural balance. The United Nations international cooperation organization for the Industrial Development (UNIDO) issued the green industry policy to help developing countries to have economic security by increasing resource efficiency and using low-carbon energy sources, creating new jobs while maintaining the environment helps to access clean technology by providing technical and expert support including implementing environmental agreements to promote production models that lead to sustainable development (Department of Industrial Promotion, 2018)

By conducting business in an environmental dimension enhance the importance of reducing environmental impact in all activities throughout the process from raw material procurement, production, transportation, consumption and waste management resulting in management known as Green Logistic (Verburg et al., 2019). In addition, consumer behavior that places importance on green activities has a profound impact on the organization reputation, both in terms of the value directly received from the product, and its contribution to society including environmental protection (Green Economy Policy Research Center, 2016). Therefore, the dissemination of the organization's green business is a strategy that attracts the attention of consumers to use the products and services and indicates that the organization is environmentally friendly. The demonstration of the resources uses and environmental care is beneficial for a good image of the business in the eyes of the community.

The coffee business is a business interesting to study in terms of green business. Since there are a continuous growth trend and a business activity that has a significant impact on the environment from upstream to downstream, there must be an adaptation to the climate change that affected the coffee system which involved various innovations (Verburg, Rahn, Verweij, van Kuijk, & Ghazoul, 2019). However, there is a lack of empirical studies about the dissemination of green business to coffee business operators towards consumer perceptions. This paper can be used as a guideline for coffee entrepreneurs as well as for food and beverage entrepreneurs interested in green business. It can be applied to suit your own business or to develop dissemination for business operations to increase awareness of green business management for consumers which can be beneficial to show social and environmental responsibility. The researcher is keen to study the coffee entrepreneurs' green business dissemination by sharing the green business management as part of the driving marketing to a successful coffee business.

RESEARCH OBJECTIVE

The aim of this research was to study the consumer perception of green business strategy communications of coffee shop business in Phra Nakhon Si Ayutthaya province in Thailand.

LITERATURE REVIEW

The literature review was focused on research papers about important theories and concepts used in advertisement and green business strategy that are as follows:

Business Communication Conduct

The concept of integrated marketing and communication is to bring information about the brand to the consumer with various dissemination styles which involve carrying out marketing activities that will be interpreted to create an understanding to build acceptance between businesses and consumers by using marketing and communication tools, advertisement, public relations, sales promotion, personal selling, and online media are considered to be the most promising marketing tools in our days (Sira Sriyothin, 2561).

Green Business Practices for Business Entrepreneurs

The Logistics Bureau of the Department of Primary Industries and Mines (2015) has explained the concept of Green Supply Chain Management (G-SCLM), which is the logistics management in terms of reducing the environmental impact resulting from carrying out logistic activities throughout the supply chain. From the source and the raw material procurement process, product and service design, production processes, services, transportation processes inside and outside the organization, consumption, as well as product life cycles management and other factors of production must also achieve key objectives of increasing the efficiency of logistics activities throughout the supply chain, reducing logistics costs and the ability to respond to consumers' needs in time (quality and reliability). The components of green logistics and supply chain activities are as follows; green design, green supply, green manufacturing, green marketing and communications (referring to the marketing campaign and the marketing strategy for the environment which helps in the development of consumer organizations and trade opportunities between competitors), green consumption, green transportation/ distribution, green communications, and green reverse logistics.

Related Research

Danciu (2018) studied the different perspectives of green marketing: from the ecology to sustainable marketing. It was found that green marketing affected sustainable development by helping to improve product sustainability with various innovations. These effects may result from design, material use, water and energy use, packaging, shipping, marketing, disposal and reuse, and others. Designing green marketing and using reliable communications helps to build a multi-channel distribution network which affects fair trade systems including green marketing. One of the most important products for commerce in the fair trade system is the coffee market. Sustainable green marketing helps to achieve economic sustainability. In addition, green marketing enhances company reputation, customer loyalty, and increases the brand's image and satisfaction.

Radzi, Harun, Ramayah, Kassim, and Lily (2018) studied the advantages of the relationship bond between a Facebook fan page and Generation Y. In addition, the customer satisfaction effects study on the beneficial relationship was conducted by collecting 195 online questionnaires using the Snowball sampling method for a Smart PLS statistical data needs. The research has found that both theoretical value which businesses use social media as a marketing strategy, advertisers also use Facebook or other social media to respond to Generation Y needs. To maintain confidence and loyalty in the purchase of brand products, they can offer discounted prices or special promotions for online customers via the Facebook page. By doing this, Generation Y customers are more likely to bind to the brand.

Thampaiboon, A. (2016) studied the relationship between awareness of green supply chain management and the impact on corporate image by using the case study of Starbucks Coffee Thailand Company Limited., the purpose of study was to study the perception of consumers on green supply chain management of Starbucks Coffee (Thailand) and to study the implementation of green supply chain management that has an impact on the corporate image of Starbucks Coffee (Thailand). The results show that more than 60% of interviewees know and use Starbucks services and more than 90% recognize the green supply chain. Most of the interviewees were aware of Starbucks' green supply chain operations in all aspects, except for green production. The awareness of the five factors of the green supply chain affects the image of the organization. Awareness can also create a good image for the organization especially the company' green procurement that supports the cultivation and purchase of coffee by using environmentally friendly methods and consequently helps to improve the quality of life of agriculture farmers in South Africa and affects the image of the organization greatly. In addition, the study found that advertisement messages that affected perceptions had an effect on consumers' purchasing decisions.

METHODOLOGY

Research Methods

This research used the qualitative research method. The researcher designed an used an In-depth interview to collect data as it follows:

The consumer perception of green business strategy communication coffee shop by an In-Depth Interview. The researcher conducted an in-depth interview for 20 key consumers by using a snowball sampling technique. They were selected according to their drinking behavior where the main consumer was the person who drank coffee every day and went to a regular shop to buy coffee. The researcher' content topics covered in the in-depth interview are designed questions according to the factors related to the five environmental supply chain activities such as green purchasing, green manufacturing, green operations, green design and reverse logistics (Guide and Srivastava, 1998). The interview for data collection was conducted on the specified date and time within the period between January 2019 to June 2019.

Data Validation

The researcher validated the data by using the triangulation data checking. The data was examined in 2 forms to check if the information collected was correct and reliable or not and to review data sources regarding time, position, and people in this research. The first format was used in the interview from 3 groups of data providers. In this regard, the information obtained in each group of data providers will be linked to process and analyze whether there is or not consistency or conflicts both within and between groups. The interview had conflicts with the information provided by one of the interviewees. The researcher will verify the interviews collected data with other informants about the referred topic in order to obtain accuracy and reliability of the information. In this second format, the researcher uses a literature review method to gather data about the dissemination strategy of green business a case study from various academic departments' documents, academic work reports, and articles from journals, an electronic media, and observation field trips of related research. After using the collected data to obtain this study' results and to gather information and knowledge, the researcher has to conduct analysis and compare it with the primary data obtained from interviews with the consumers.

RESULTS AND DISCUSSION

Results

The consumer perception of green business strategy communications of coffee shop business in Phra Nakhon Si Ayutthaya province, Thailand approach. In-depth interviews show that

1) The main consumers have daily drinking habits of tea and coffee. When inquiring about regular coffee shops, the main consumers expressed that have regular stores for drinking coffee every day in the morning and that change shops only when traveling to places or when meeting friends. The main consumers' objective of entering in a coffee shop is to buy a coffee or have a drink and talk to a person, meet friends, negotiate a business, and to follow always though the news of a favorite coffee shop' Facebook fan page.

2) Consumer perception towards coffee shop green business advertisement approach. In this case study, the researcher designed the questions based on 5 factors related to environmental supply chain activities namely green purchasing, green manufacturing, green operations, green design, and reverse logistics. When inquiring about consumer perceptions about green business advertisement perceptions, gained insights are as follows:

Table 1: *The Consumer Perception of Green Business Strategy Communications of Coffee Shop Business in Phra Nakhon Si Ayutthaya Province, Thailand*

Supply Chain Environmental Activities	Coffee Shop
Green Purchasing	The key consumers know that the coffee shop in which they use the service is environmentally sensitive. A group of key informants were informed about the green supply chain management process and were provided information on purchasing coffee beans with an ethical buying process, on organic coffee that is cultivated by methods and materials that cause the least environmental impact, on organic cultivation practices that help revive and maintain soil quality, and also on agriculture that reduce the use of pesticides and toxic residues to preserves biodiversity.
Green Manufacturing	The main consumer does not know about green production.
Green Operations	The main consumers are aware of the advertisement that their regular stores offer discounts when bringing their own glasses to buy drinks.
Green Design	The main consumer only gives information about green decorations that focus on gardening with various plants to help reduce the temperature and provide comfort to the customers. Each coffee shop has a unique design according to a specific style.
Reverse Logistics	The primary data's providers do not know the information about the reverse logistics.

DISCUSSION

From the data analysis of results, the researcher elaborated the discussion according to the objective, it was found that consumers are only aware of the green business operations of coffee shops in 3 aspects namely green purchasing, green operations, and green design but do not know the information about green production and the reverse logistics. This is consistent with Atthaphon Thamphaibun (2016) that studied the implementation of green supply chain management that has an impact on the corporate image of Starbucks Coffee (Thailand) and found that more than 60% of respondents know and use Starbucks service, and more than 90 percent of these know about green supply chains. Green business supply chains on all 5 factors affect the image of the organization and refer that awareness can also create a good image for the organization especially the company' green procurement that supports the cultivation and purchase of coffee by using environmentally friendly methods and consequently helps to improve the quality of life of agriculture farmers in South Africa and affects the image of the organization greatly. This study found that advertisement messages that affected perception have an effect on consumer´s purchasing decisions and this is in line with Sira Sriyothin (2018) that refers that advertisement in every business process will help consumers to keep brand's loyalty. The integration of marketing and communication tools to achieve corporate' branding goals can lead to competitive advantages in responsible business, and this is in line with Huang and Chen (2018). The process of developing new products by engaging customers or letting them know about every step of their business operations through online communication channels such as the Facebook fan page may enable more customers to be loyal for the band.

CONCLUSION AND SUGGESTIONS

Suggestions from this Research

In overall, this research found that the organization' product presentation via online media on Facebook fan page is concealed with green business activities in which promotes the corporation' image and lets consumers recognize green business activities organized by the company. The researcher agreed that:

1. Coffee shop operators should choose to use green business advertisement strategies to meet the needs of customers in order to attract their attention.

2. Coffee shop operators should not use green business advertisement strategies to advertise for the purpose of creating a single image, but there should be the facts and virtue in the advertisement for consumers to be aware of the true operational process.

3. Coffee shop operators should share consistent messages more frequently that conveys green business practices so that consumers become more aware of the organization's green business activities by using advertisement strategies for green business operations in order to maximize benefits.

4. Coffee shop operators should have messages that advertise the green business strategy that focuses on building cooperation with external agencies in order to create more cooperation in green business and to establish a network of partners that realize the importance of running a green business together.

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The Factors Influence Work Out of Thai Undergraduate Students

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Abstract This research has two main aims. The first objective is to explore the exercising pattern of Thai university students. The second is to analyze the factor affecting among those group to work out. This research conducts in term of quantitative method. Also, the demographic information, exercise activities, as well as twenty-one test variables are in questionnaire. Additionally, the descriptive statistics and inferential statistics will be illustrated respectively. The result ultimately showed that there are two main factors influencing the university students to exercise. The former is motivation factor including intrinsic motivation, and extrinsic motivation. The latter is goal factor namely personal image, social interaction, and social recognition accordingly. As a result, the paper suggests the importance of introducing exercise motivation as well as goal setting to the young students to be productive by exercising, physical, activities. In the short time, the relationship between these two factors and others will be developed.

Keywords: Work out, Exercise, Thai students, Factor Analysis, Economics of Exercise

INTRODUCTION

Exercise is a useful activity for good physical and mental health. Today's society attaches importance and attaches to exercise (Teixeira, Carraca, Markland, Silva, & Ryan, 2012). The public and private sectors, therefore, have provided exercise facilities and facilities for welfare and to conduct business widely throughout the country by various names. Fitness center Fitness club Fitness center Sports and recreation club etc. (Rung Fah 2016). In addition, the 6th Thai National Sport Development Plan (2017-2021) states that exercise is important for people because exercise will help keep your health healthy. Reducing medical expenses, reducing social problems, and being able to use drugs to solve problems and crises. By creating opportunities to access physical activities and play sports as well as to provide basic infrastructure and facilities for all groups of people thoroughly.

Although there are exercise policies and the support of exercise facilities from the public and private sectors But there are still some groups of people who haven't access to exercise services such as the changing economic and social conditions, causing working group people to not have time to exercise Lack of motivation for exercise Including lack of exercise goals. Yuri Feito et al. (2018) and Alharbi et al. (2017) agree that motivation and time allocation are one factor that affects exercise.

Motivation fulfills a person's physical and psychological needs. In which humans believe that meeting the needs is an important basis for living and will continue to increase until self-esteem (Self-esteem) and the fullness of life (self-actualization) (Maslow, 1943 cited in Feito et al., 2018) Motivation consists of intrinsic motivation. Like what human beings want to drive within a person without being rewarded For extrinsic motivation, such as those caused by rewarding efforts or accepting positions (Deci & Ryan, 1975 cited in Feito et al., 2018).

Human exercise behavior therefore involves motivation for developing skills in sports, competition, social interaction. Beliefs about health and fitness for health. Competition activities and sports skill development determine exercise motivation. Fitness and exercise are part of internal motivation. Such as the need to develop sports skills the enjoyment with competition, etc. It also involves external motivation, such as social acceptance, reputation, and challenges from competitors (Feito et al., 2018).

Factor analysis is one of the oldest structural models, having been developed by Spearman in 1904. He tried to explain the relations (correlations) among a group of test scores, and suggested that these scores could be generated by a model with a single common factor, which he called 'intelligence,' plus a unique factor for each test. Also, factor analysis is a multivariate statistical method whose primary purpose is to define the underlying structure for a group of related variables. This technique addresses the problem of analyzing the structure of the interrelationships (correlations) among a large number of variables by defining a set of common underlying dimensions, known as factors. The two primary uses of factor analysis are summarization and data reduction. It allows us to take a large set of data and make it more interpretable. On one hand, Exploratory Factor Analysis is used to determine to traits or factors that comprise a set of data. On the other hand, Confirmatory Factor Analysis attempts to validate hypothesized factors that one expects to emerge from data collected from test questions, questionnaire responses. Stamatis (1947) However, the Economics of Intense Exercise was studied by David O. Meltzer and Anupam B. Jena (2010) in term of intense exercise which related to income.

From the above it can be seen that motivation and goal factors affect exercise. But there are still research issues that the researcher has not found yet. How much are the motivation and target factors related? In addition, in the context of exercise, it is widespread in the study of composition. The researcher is interested to study the components of factors that affect exercise decisions. To obtain information that will be useful in measuring motivation and goal factors. It also gives insight into ways to promote exercise behavior, with the interaction between motivation and goal factors.

LITERATURE REVIEW

Exercise Motivation

Motivation is the direction and the level of intention to act or conduct in the selection and maintenance of human behavior. Motivation determines the behavior of humans to retreat. Or confronted with various situations and the intention to act or try to achieve the objectives. Therefore, motivation determines the direction and level of intention, attempt to act, or even, committed to act.

Motivation involves a level of motivation or stimulation. From doing one thing and achieving the goal with certain guidelines that may arise from the needs of the doer or the offender receives external stimuli. Theory of motivation is related to other theories, such as Hedonistic Theory, Instinctual Theory, Drive Theory, The Theory of Expectancy, Theory of Motivation Maslow, Theory of Demand, according to Murray's Principles and ERG Theory (quoted in Tararat Saengdao, 2012: 9-13).

From a literature review, it is found that exercise motivation consists of intrinsic and extrinsic motivation orientations. Individual These things are called "Intrinsic Motivation or Intrinsic Motives for Participation" which is a condition in which a person appreciates the value of a good activity And act willingly Considered that achieving that activity As for the "extrinsic motivation" is a condition in which a person displays behavior because something is stimulating Didn't do it for the success of that thing Brodkin, P., & Weiss, M. R. (1990).

Internal motivation Is the motivation that occurs inside the person There are no external incentives or incentives to motivate the behavior. Internal motivation is the motivation to play sports with fun and willing to play by recognizing that achieving that activity is already rewarded (Sanguan Lertarun, 1985: 34-63, quoted in Tararat Saengdao, 2012: 17). Therefore, internal motivation is considered an important aspect of participating in physical activities. Athletes with internal motivation Athletes with external motivation Will choose to play sports that are easy or not too difficult In order to show off his highest ability Or avoid showing unreached skills And choosing a sport that is very challenging will increase the risk of showing low skills.

Exercise Goals

Exercise means any activity that causes the body to move. To help the muscles work and promote the body to be strong, healthy, free from various illnesses, exercise activities such as walking, jogging, rope exercise, weight lifting, aerobic dance, step stepping Aerobics, dance, Chinese boxing, swimming, cycling, games and local games, etc. (Sports Authority of Thailand, 1995). Exercise goals include 1) social interaction, 2) image and 3) reputation and acceptance.

Sebire et al. (2008) research on Goal Content for Exercise Questionnaire (GCEQ) found that it can be divided into 5 indicators, which are separate, internal and external activity tracking. These separated into intrinsic and extrinsic pursuits, social affiliation, health management, skill development (internal goals) and social recognition and image (external targets)

The relationship between motivation and exercise goals
The goal of exercise is actually what psychologists call "exercise." "Internal motivation", which is an internal motivation that comes from the belief that Exercise will benefit the mind and body. Resulting in better health and fun Relaxes the stress Get to know more people If a lot of motivation is motivated to want to play more, "external motivation" is a motivation that makes you want to exercise more, such as receiving compliments. Win money Or compensation, etc. (Tararat Saengdao, 2012: 14)

Motivation is an important part of building success and personal development. Can help a person change behavior in a way that is desirable behavior. Maureen R. Weiss (1990) found that motivation is an outcome variable that will be measured In the form of selection, effort and persistence in behavior from the comparison of motivation (Lockwood, P., & Pinkus, R. T. (2008), it is considered that It is a result of interpersonal interaction and environmental factors.

Research by Magaraggia, Dimmock and Jackson (2014) that examines exercise motivation towards goals and exercise participation in first year 1st year undergraduate students. This indicates that the element of motivation should influence the individual fitness goals Is the duration of the exercise The frequency of exercise did not have the same effect as exercise duration. Moreover, it was found that awareness of stimuli from the external environment can influence behavior and judgment from society without recognition from people.

As mentioned above, it can be concluded that The decision of the exercise of the individual therefore is based on motivation to exercise as a leader. And linked to the behavior of desirable behavior to change for the good. With internal and external motivation

as a motivation to want to exercise more. When people do things committed and then will affect the achievement of the goals that each person has set. Especially the social goals from being accepted contact and interaction with society as well as having a good image and reputation in society. Therefore motivation is related to exercise goals.

METHODOLOGY

Population

The participants were recruited from 340 undergraduate students enrolled at the Faculty of Business Administration, BA, of Rajamangala University of Technology Thanyaburi, RMUTT.

Sample Size

As a general rule, the minimum sample size number at least five times as many observations as there are variables to be analyzed, and a more acceptable size would reflect a 10-1 ratio. At a minimum, the sample size should be at least 100 however 200 or more would be better. Bruce Thompson's Exploratory and Confirmatory Factor Analysis (APA, 2004) says that it depends on the factor loadings. If factors are defined by four or more measured variables with structure coefficients < .60, then the sample size if not important (N = 60 is adequate). If factors are defined with 10 or more structure coefficients each around .40, then the sample size should be at least 150. Any sample size over 300 is considered adequate. On the other hand, sample size recommendations from Comrey and Lee (1992) provided the following guidance in determining the adequacy of sample size: 100= poor, 200 = fair, 300 = good, 500 = very good, 1,000 or more = excellent. In our case, however, the sample consists of 340 completed questionnaires.

Research Instrument

The instrument used in the research was a questionnaire consisting of 3 parts: part 1 is general information of 10 items as an alternative form, part 2 is information about health and exercise, 10 items of choice, part 3 is opinion data. Which has 21 exercise decisions, is a 5 level estimation model (least to most).

Data Analysis

The statistics used in data analysis consists of descriptive statistics such as frequency, percentage, mean to describe the basic characteristics of the sample. And in the interpretation of the mean of questions, opinions on exercise decisions Interpretation based on the guidelines of Prasopchai (2010) with the following details: 4.51-5.00, highest level 3.51 - 4.50. The score of 3.51 - 4.50 is high level, 2.51-3.50 is moderate level, 1.51-2.50 is low level and 1.00 - 1.50 is lowest level. Inference statistics to test the hypothesis number 1 is an exploratory factor analysis to group variable sets. By PCA (Principle Component Analysis) and orthogonal rotation by varimax rotation.

RESEARCH FRAMEWORK
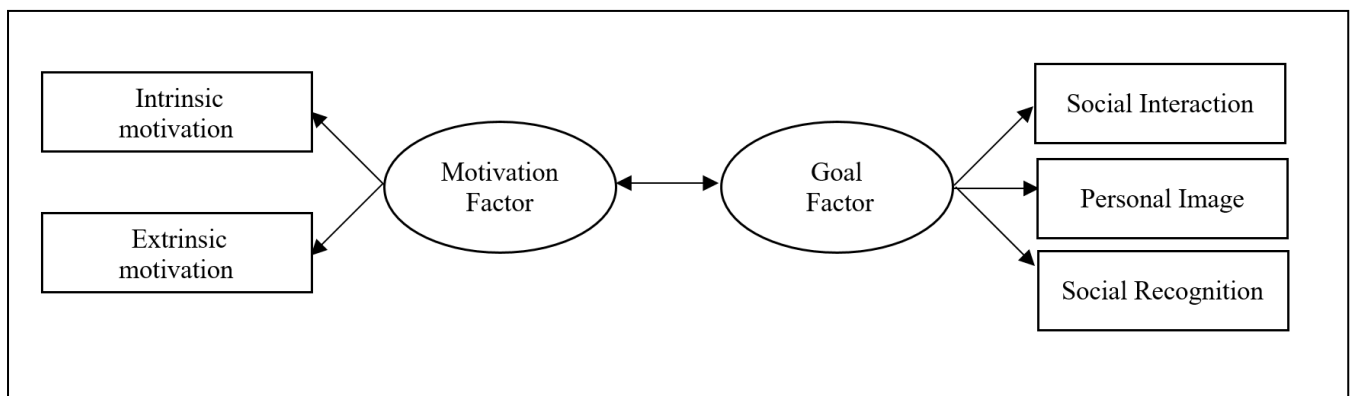
RESULTS AND DISCUSSION

Descriptive Statistic Result

Most of the respondents are female. 72.4 percent were aged between 20 - 25 years, accounting for 84.7 percent, most were undergraduate students Accounting for 85.3 percent, with an estimated monthly income of 6,858 baht.No expenditure on exercise Accounting for 76.8 percent, but most of the expenditure and the cost of eating Accounted for 44.4 percent, with an average weight of 58.70 kilograms and an average height of 164 centimeters, with a frequency of exercise less than 3 times per month (58.2 percent) and not being a fitness member (91.5%). The sample group is most

interested in exercising indoors (57.4%) and regular exercise (63.5%) likes to watch sports from time to time (45.0%) and Think of themselves as slim (51.8%)

Inferential Statistics Result

The results of the analysis of factors related to exercise decisions consist of motivation factors. And exercise goal factors from Table 1, the results of survey factors analysis with Factor Analysis techniques to group variables of both factors, found that

Motivation factor There are a total of 6 variables. Groups can be grouped into 2 factors consisting of internal motivation And external motivation With Chi-Square Sphericity equal to 989.648 (p <.01), this correlated matrix is significantly different from the identity matrix at the 0.01 level corresponding to the KMO which is equal to .760 This shows that the suitability and adequacy of the data can be analyzed to a good level (Kanaya, 2006) with the order of weighting factors in descending order as follows

Factor 1 "Intrinsic motivation" The number of variables that describe 3 factors has a weight factor between .852 and .908 has variable variances. (eigenvalues) equal to 3.056 and the percentage of variance equal to 50.933 shows that all 3 variables are the variables that best describe this factor.

Factor 2: "Extrinsic motivation" The number of variables that describe 3 factors has a weight factor between .806 and .891 with variable variances. (eigenvalues) equal to 1.636 and the percentage of variance equal to 27.270, indicating that all 3 variables are the variables that best describe this factor.

As for the target factor in exercise. There are a total of 15 variables. The variables can be grouped into 3 factors consisting of image, social interaction And reputation and acceptance, the Chi-Square Sphericity was 3996.640 (p <.01), indicating that this correlated matrix was significantly different from the identity matrix at the 0.01 level, corresponding to the KMO which has The value of .906 shows that the suitability and adequacy of the data are able to analyze factors at a good level. The details are as follows

Factor 1 "Personal Image" The number of variables that describe the 6 factors has the weight of the factors between. 620 and. 853 has the variance. (eigenvalues) is 7.767 and the percentage of variance is 51.781, indicating that all 6 variables are the variables that best describe this factor.

Factor 2: "Social Interaction" The number of variables that describe the 6 variables has the weight of the factors between .685 and .784 with the variance (eigenvalues) equal to 2.020 and the percentage of variance equal to 13.467 shows that all 6 variables are the variables that best describe this factor.

Factor 3 "Social recognition" The number of variables that describe the 3 factors have the weight of the factors between .830 and. 877 with the variance. (eigenvalues) equal to 1.328 and the percentage of variance was 8.853, indicating that all 3 variables are the variables that best describe this factor.

Table 1: *The Factor Weight, Mean, and Standard Deviation of the Analysis of Motivation and Exercise Goal Factors*

Factors	Factor Loading	Mean	S.D.	Interpretation
Exercise Motivation				
Intrinsic motivation (instmov)	Eigenvalues = 3.056 and Variance = 50.933 ($\bar{x}$ = 3.695 , S.D. = 0.902)			
Having clear fitness goals	.875	3.66	1.003	High
Exercise is caused by yourself.	.908	3.67	1.020	High
Need and inspiration for self-transformation	.852	3.76	1.020	High
Extrinsic motivation (extmov)	Eigenvalues = 1.636 and Variance = 27.270 ($\bar{x}$ = 2.755 , S.D. = 1.002)			
Forced or pressured by those around you to exercise	.891	2.64	1.143	Moderate
Forced or pressured by those around you to exercise	.890	2.77	1.130	Moderate
To receive insights, gossip and to look at the appearance of those around you	.806	2.86	1.168	Moderate
Fitness goals				
Personal Image (image)	Eigenvalues = 7.767 and Variance = 51.781 ($\bar{x}$ = 3.934 , S.D. = 0.763)			
Exercise makes you strong.	.826	4.20	0.871	High
Exercise makes you excited.	.849	4.06	0.893	High
Exercise leads to a balanced body.	.853	4.10	0.877	High
You have a better image from exercise.	.806	3.90	0.895	High
Your identity is more pronounced when exercising.	.620	3.67	0.939	High
Exercise encourages you to look good and level.	.636	3.66	0.934	High
Social Interaction (socint)	Eigenvalues = 2.020 และ Variance = 13.467 ($\bar{x}$ = 3.564 , S.D. = 0.763)			
Exercise is the training of the mind.	.685	3.59	0.912	High
Exercise makes you know yourself.	.708	3.54	0.926	High
Exercise makes you confident in yourself.	.749	3.71	0.928	High
Exercise is socializing or making new friends.	.784	3.48	0.955	Moderate
Having a friend is a part that helps you to exercise.	.725	3.63	0.958	High
Exercise makes you social.	.765	3.42	0.952	Moderate
Social recognition (socrec)	Eigenvalues = 1.328 และ Variance = 8.853 ($\bar{x}$ = 3.184 , S.D. = 0.964)			
You are regarded by the surrounding society when exercising.	.830	3.34	1.025	Moderate
You became more known through exercise.	.872	3.25	1.007	Moderate
You are famous and progressed in work and career through exercise.	.877	2.96	1.163	Moderate

Additionally, we examined the coefficient of correlations between each set of variables; instmov, extmov, image, socint and socrec, as shown in Table 2.

Table 2: *Simple Correlation Coefficient (r) between Motivation Factors and Factors of Exercise Goal*

Variable	Personal Image (image)	Social Interaction (socint)	Social recognition (socrec)
Intrinsic motivation (instmov)	.5439**	.6279**	.2356**
Extrinsic motivation (extmov)	.1315**	.3430**	.3880**

** Statistical significance at the level of 0.01

From Table 2, correlations between variables in the variable set of motivation factors and exercise goal factors were between 0.1315 and 0.6279 which has a positive relationship with statistical significance at the level of 0.01, with a moderate relationship

CONCLUSION AND SUGGESTIONS

Conclusion

The research found that factors related to exercise of university student's decision making consist of 2 factors which are motivation factors. And the goal of exercise consistent with the research of Magaraggia, Dimmock and Jackson (2014) found that motivation and goals are interrelated, which affects the exercise of the university students. Each individual's goal will be different according to the duration of the exercise.

Internal motivation factors weigh more factors than external motivation. show that Exercise behaviors are more effective when the person is highly motivated, for example, an athlete who chooses to play a sport that is challenging due to an attempt to overcome that competition. While those with outside motivation choose to play sports that are appropriate for their ability to succeed in becoming more acceptable than fun. As well as playing sports in order to receive prizes.

The factors of exercise goal are divided into 3 variables which are 1) image 2) social interaction and 3) social awareness. Which is covered with variables obtained from the findings of Sebire et al. (2008) by dividing Goal Content for Exercise Questionnaire (GCEQ) into 5 variables. These include 1) separated into intrinsic and extrinsic pursuits 2) social affiliation 3) health management 4) skill development (internal goals) And 5) social recognition and image (external goals).

Motivation is related to fitness goals. Internal motivation is more related to exercise goals than external motivation. The decisions made by an individual may have more influence on physical activity than from outside decisions. This is in accordance with self-determination theory (Self-Determination Theory) that is described as The person who decides to exercise will have goals that result from self-motivation. Such goals must be directed by oneself and arose from interest in exercise by oneself. The research results also show that Internal motivation is not the only variable that will affect exercise. Also requires external motivation to motivate to exercise more.

Suggestion

In this research there are still some gaps need to be proved in the future. A variety of factors, for example, that affect exercise are need to be explored. The fulfillment of the literature review in related sciences are possible. Statically techniques such as Canonical analysis as well as Structural Equitation Modeling can be concerned. Lastly, the students should motivate themselves as well as set the clear goal of exercise to encourage themselves to be active Educational institutions should motivate students to exercise by stimulating both from within themselves and outside themselves in order to be healthy.

ACKNOWELEDGEMENT

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The Tacit Knowledge Management that Affects the Innovation Performance of Lecturers in Private University

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Abstract The objectives of this research were to examine the tacit knowledge management that affects the innovation performance of lecturers in a private university. The sample in this research consisted of 202 lecturers at private university. A quantitative empirical research via survey questionnaires was conducted to fulfil the purpose of this research. Statistical analysis applied were the frequencies, the percentages, the arithmetic mean, the standard deviation, and stepwise multiple regression analysis. The result of the statistical analysis shown that tacit knowledge management by using SECI model has significant affected on innovation performance. Considering independent variables in each aspect, found that all of variables (Socialization, Externalization, Combination and Internalization) contribute towards the significant influences of tacit knowledge management on innovation performance with statistical significance at the level of 0.05. And tacit knowledge management by using PRO model has significant affected on innovation performance. Considering independent variables in each aspect, found that all of variables (Personal responsibility, Learner self-direction, Self-directed learning, Self – direction in learning and The social context) contribute towards the significant influences of tacit knowledge management on innovation performance with statistical significance at the level of 0.05. The contributions of these finding for development human resource management in organizations are discussed and conclude with directions for future research.

Keywords: Tacit Knowledge Management, SECI Model, PRO Model, Innovation Performance

INTRODUCTION

There is a clear format of the knowledge management system of an organization which consists of collecting information that is in the organization from a person or document to transform it into knowledge, transfer and share this knowledge systematically so that everyone in the organization can access it in order to upgrade oneself to be knowledgeable and be able to work efficiently shifting it into a model learning organization (Petcharat C. and Jiamprachanarakorn S., 2015). Sustainable Knowledge can be divided into 2 types: explicit knowledge is the theoretical knowledge which has an academic content of various information transmitted in many writing forms and is embedded in the people. Tacit Knowledge It is the knowledge that exists within a person, arising from the skills, experiences, and talents that are within the person. The knowledge that is embedded in this person is difficult to convey through characters because it has a unique context, and it is difficult to format. The transfer of tacit knowledge requires the exchange of experience through participation of various activities together or in the same environment. The exchange of knowledge within the individual is an important social process. The knowledge in most organizations is tacit knowledge rather than explicit knowledge (Explicit Knowledge) (Potang A. and Photisuvan C., 2016). When comparing it to the ratio of tacit knowledge to clear knowledge, it could be 80: 20, which can be compared to an iceberg. The part that emerged from the water was like a clear knowledge of about 20% of the total, while the submerged part which is like the knowledge that is embedded in humans, about 80% of the total (Knowledge Management Manual Department of Disease Control, 2014)

Innovation is an important tool in creating a competitive advantage for the market opportunity and success of the organization. Drucker (1985) said that innovation is an important tool for entrepreneurs to build capacity, business competition, and wealth by using existing resources or from the reconstruction as well as being developed from new knowledge. The innovative performance is a new thing that results from the use of knowledge and creativity that are beneficial to the operation, and the result of the operation is the achievement of the assigned objectives. It is beneficial that the organization creates motivation to help its personnel apply their knowledge as work skills or create originality by introducing new innovations, and to achieve targets (Wisuttakorn P. and Jedesadalug V., 2015).

In addition, Kruger & Johnson (2011) said that the knowledge influences the organization's performance and to formulate the Knowledge management strategies, especially the knowledge management within the individual, which is a competitive advantage. Therefore, in order to increase the performance of the organization, the organizations need to focus on employee knowledge management, especially the tacit knowledge that is important for the efficiency and effectiveness of the operations. Therefore, the researcher agreed that managing tacit knowledge is an important process that will transform knowledge at the individual level to become assets of the organization. Therefore, the researcher is interested to study the tacit knowledge management that affects the innovation performance of the lecturers at private University for the benefit of the organization and to be a guideline for the organization to understand the importance of human capital development as a mean to increase operational efficiency and increase the performance of the organization.

Research Objectives
1. To study the tacit knowledge management by using the SECI Model that affects the innovation performance.
2. To study the tacit knowledge management by using the PRO Model that affects the innovation performance.

LITERATURE REVIEW

Concepts of Tacit Knowledge Management by using the SECI Model

Nonaka and Takeuchi (1995) proposes a knowledge cycle or knowledge spiral which explains the transfer of knowledge and the change in knowledge between Tacit Knowledge and Explicit Knowledge until becoming a new knowledge in which various processes will continue to swirl together in a spiral of knowledge, and the faster the knowledge spiral is, the more knowledge will be used to benefit the organization. The knowledge cycle consists of: 1) exchange of knowledge (Socialization) Is a sharing exchange knowledge from Tacit Knowledge to Tacit Knowledge by exchanging direct experiences of messengers such as exchanging meetings and conferences; 2) Extracting knowledge (Externalization) is to pull the knowledge from Tacit Knowledge into Explicit Knowledge, which means to pull the knowledge from the inside of the people and transfer it in writing such as manual work; 3) Knowledge acquisition (Combination) is the collection of knowledge from Explicit Knowledge into Explicit Knowledge by organizing and integrating various forms of knowledge together. Through the process of creating new knowledge and 4) Embedding knowledge (Internalization) is to bring the knowledge from Explicit Knowledge back into knowledge. Tacit Knowledge is to put the knowledge learned into practice in which the theoretical knowledge that has been changed to tacit knowledge at the individual level becomes the property of the organization. These processes are called the SECI Model.

Concepts of Tacit Knowledge Management by using PRO Model

Ralph G. Brockett and Roger Hiemstra (1991) developed learning styles the PRO Model (The Personal Responsibility Orientation) with an emphasis on personal responsibility contain with 1) Personal responsibility stimulated in order to be aware of the need for learning to have self-responsibility in deciding to learn (Learning planning) 2) Learner self-direction is a characteristic or personality that occurs from within the student's self 3) Self-directed learning is an activity that occurs in self-directed learning caused by the management of teachers and students. Learning may occur while working or stop working with the students having to pay attention, observe, and try. 4) The Self – direction learning is learning as a student who has self-directed characteristics of learning in which learners are accepted and assigned for their roles (Self - acceptance) as learners for having the ability to do a learning plan (fullness plan) and for having an intrinsic Motivation (Potang A. and Photisuvan C., 2016) and 5) The social context is the social environment of the learners, in which the learners are still living in the society.

Innovation Performance Concepts

National Innovation Agency (2006) gave the meaning of Innovation and states that innovation is a new thing arising from the use of knowledge and creativity that is beneficial to the economy and society. Ueajirapongpan S. et al. (2010) said that innovation means new things arising from the use of knowledge, experience skills and creativity which in development may look like a new product, a new service or a new process that brings economic and social benefits. Additional meaning: (Wisuttakorn P. and Jedesadalug V., 2015) Innovative performance means new things resulting from the use of knowledge and creativity that are beneficial to the operation and resulting in better performance of the assigned objectives. In addition, measurement of Innovation Performance in research based research university that proposed innovation performance in terms of (a) Efficiency and effectiveness of innovation process, (b) Number of new project, service or product completed, (c) Amount of research fund granted, (d) Number of external linkages, (e) Duration to complete a research project. (Kowang O.T., Choi S.L. and Rasli A., 2015) As stated above, In this research has defined that innovation performance divided into 4 perspectives: Efficiency and effectiveness of innovation process, Number of new project, service or product completed/developed Financial success and Time to complete a project.

Therefore, innovation performance it is a result of learning working experience, discovering new things from work and accumulating knowledge creates new knowledge from participation in activities in the process of transferring tacit knowledge through mutual exchanges and learning that emphasizes personal responsibility to create knowledge, apply and disseminate knowledge for the benefit of the organization. From the study of the above concepts, it was found research studies about knowledge management within the organization (Knowledge Management) but still does not find research studies about Tacit knowledge management using SECI Model and PRO Model that affects the very innovation performance. The researcher is interested in studying the above issues.

CONCEPTUAL FRAMEWORK

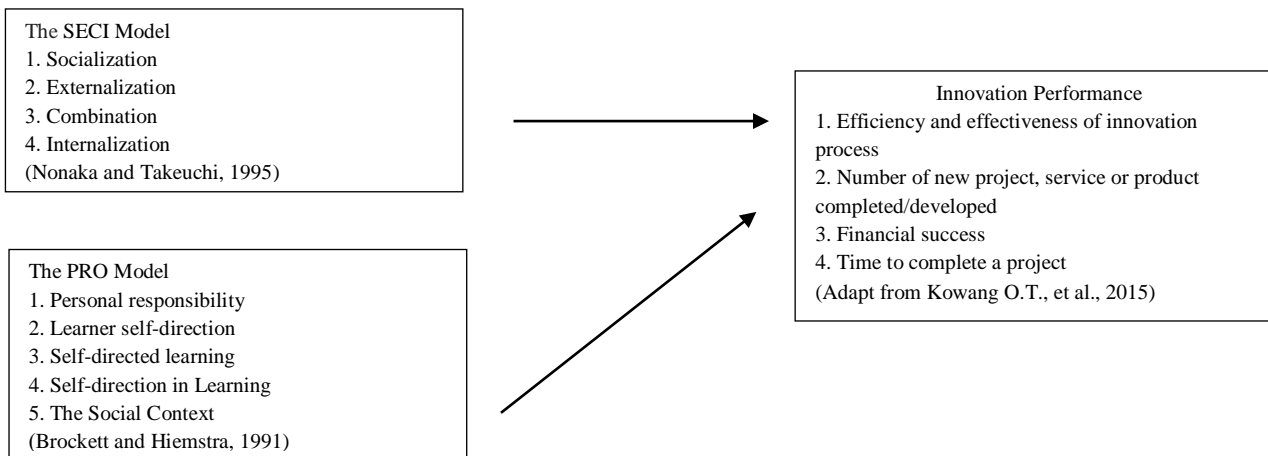Conceptual framework of this research is shown in figure 1.

The SECI Model
1. Socialization
2. Externalization
3. Combination
4. Internalization
(Nonaka and Takeuchi, 1995)

Innovation Performance
1. Efficiency and effectiveness of innovation process
2. Number of new project, service or product completed/developed
3. Financial success
4. Time to complete a project
(Adapt from Kowang O.T., et al., 2015)

The PRO Model
1. Personal responsibility
2. Learner self-direction
3. Self-directed learning
4. Self-direction in Learning
5. The Social Context
(Brockett and Hiemstra, 1991)

Figure 1: **Conceptual Framework**

Hypothesis

Based on the research problems and conceptual framework above therefore the hypotheses of this research are as follows:

Hypothesis 1 (H1) : Tacit knowledge management by using the SECI Model to have a positive effect on innovation performance.

Hypothesis 2 (H2): Tacit Knowledge Management by using PRO Model to have a positive effect on innovation performance.

METHODOLOGY

This research is a quantitative research. It was used questionnaires as a tool to collect data from the target population. Then the data was analyzed to find conclusions that are consistent with the research's objectives. The details of the research are as follows.

Population and Sample

The population used in this research was lecturers at private university, 4 1 0 people, calculated the sample by Taro Yamane (1976) at the confidence level of 95%. Samples were 202 sample people. It was used the convenience sampling method of choosing to collect a specific sample of people who cooperated to answer questionnaires until complete the sample size of 202 samples.

Research Tools

This research used questionnaires as a tool for data collection. It was divided into 5 parts. Part 1 : Questions about general information of respondents. Part 2 : Questions about knowledge management process using SECI Model, amount 1 6 items. Part 3 : Questions about knowledge management process using PRO Model, amount 1 5 items. Part 4 : 1 0 questions on innovative performance and Part 5 additional suggestions were an open-ended question. The questionnaire of part 2 to 4 is a questionnaire that indicates the opinion level according to Likert (Rating Scale) and each item is divided into 5 levels which are the most agree (5) very agree (4) moderate agree (3) agree Least (2) and the least agree (1)

Research Quality Check

- Content Validity by bringing the questionnaires to experts to consider the consistency and coverage of the questions and the objectives of the research. By analyzing the Index of Item-Objective Congruence (IOC) between 0.50-1.00, it shows that the questions are consistent with the research objectives (Taweerat P., 2000). All questions pass the criteria. Correspondence index with every value greater than 0.5
- Reliability by using the questionnaire to test the confidence with the sample and then to analyze the confidence of the questionnaires by finding the Cronbach's Alpha Coefficient between 0.71-0.90 coefficient alpha with reliability requirement to have alpha coefficient greater than or equal to 0.7 (Nunnally, 1978).

Data Collection

The researcher used the questionnaire that passed the content validity test and confidence. To collect data from teachers at private University has been restored and completed 202 samples.

Data Analysis

In this research, the statistics used to do data analysis was descriptive statistics. The statistics analysis consisted of frequency values, percentage, average, and standard deviation used to analyze general information of respondents, analysis of relationships

between independent variables by using Pearson's Product Moment Correlation Coefficient to test the properties of the initial variable and the dependent variable and to analyze the influence of variables by using multiple regression analysis by using Stepwise technique. The definition of variables is as follows:

SECI	means	Learning Management Process using a SECI Model;
S	means	Socialization
E	means	Externalization
C	means	Combination
I	means	Internalization
PRO	means	the Personal Responsibility Orientation Learning using PRO Model;
PR	means	Personal Responsibility
LS	means	Learner self-direction
SD	means	Self-directed learning
SDL	means	Self-direction in Learning
SC	means	The Social Context
IP	means	Innovation Performance;

RESULTS

From the data analysis of tacit knowledge management that affects the innovation performance of lecturers in private university, the research findings can be summarized as follows:

1. The results of general data analysis of 202 respondents, found that most of the respondents are female, 127 people, accounting for 62.9 percent and 75 male accounting for 37.1 percent, 80 people aged between 31-40 years accounting for 39.6%. Education: most have education levels, bachelor degree students comprising 130 people accounting for 64.4% of work experience. Most of them have work experience between 6-10 years, 72 people representing 35.6 percent. Most of the university employees are 106 people, representing 52.5 percent.
2. The results of Average analysis, Standard deviation of variables used in the study and the correlation coefficient analysis to test the relationship between variables are shown in Table 1 and Table 2.

Table 1. *The Results of Average Value, Standard Deviation, VIF, and Correlation Coefficient of Knowledge management Process by using a SECI Model and Innovation Performance*

Variable	S	E	C	I	IP	VIF
$\bar{x}$	4.43	4.19	4.25	4.21	4.43	
S.D.	0.582	0.591	0.611	0.634	0.503	
S						1.755
E	0.622**					2.452
C	0.532**	0.712**				3.150
I	0.556**	0.635**	0.776**			2.729
IP	0.584**	0.677**	0.717**	0.750**		

**p < 0.05

In table 1, it was found that the factor with the highest mean is Socialization with Highest average of 4.43, followed by Combination, Internalization, and Externalization With an average of 4.25, 4.21, and 4.19 respectively. In addition, when considering the VIF values, it was found to be less than 10. This means that there is no correlation problem (Multicollinearity) and it was found that the correlation coefficient analysis (Correlations) r were between -1 and 1 (p-value <0.05), indicating that the variable has a linear relationship at a significant level of 0.05, leading to hypothesis testing by regression analysis.

Table 2. *The Results of Average Value, Standard Deviation, VIF, and the Correlation Coefficient of the Personal Responsibility Orientation Learning by using PRO Model and Innovative Performance*

Variable	PR	LS	SD	SDL	SC	IP	VIF
$\bar{x}$	4.43	4.39	4.39	4.38	4.28	4.43	
S.D.	0.616	0.551	0.550	0.565	0.658	0.503	
PR							2.522
LS	0.639**						2.167
SD	0.642**	0.999**					5.468
SDL	0.688**	0.695**	0.695**				2.549
SC	0.686**	0.576**	0.578**	0.640**			2.135
IP	0.755**	0.697**	0.695**	0.782**	0.773**		

**p < 0.05

In Table 2, it was found that the factors with the highest mean were personal responsibility, which had the highest mean of 4.43, followed by Learner self-direction, Self-directed learning, Self-direction in Learning, and The Social Context with an average of 4.39, 4.39, 4.38, and 4.28 respectively. In addition, when considering the VIF value, it was found to be less than 10, indicating no correlation problems (Multicollinearity) and Correlation Coefficient Analysis (Correlations) r were between -1 and 1 (p-value <0.05), indicating that the variable has a linear relationship at a significant level of 0.05, leading to hypothesis testing by regression analysis.

3. An analysis of tacit knowledge management of the knowledge management process on the efficiency of work by using a SECI Model, and a multiple regression analysis by using a Stepwise technique are shown in Table 3.

Table 3. *The Results of Tacit Knowledge Management by using a SECI Model that affects the Innovation Performance*

Independent Variables	Variable				
	Innovation performance (IP)				
	B	SE	ß	t	p-value
Constant **Learning management process using a SECI Model (SECI)**	1.103 0.779	0.178 0.041	 0.800	6.209 18.883	0.000** 0.000**
Constant	1.189	0.180		6.594	0.000**
Socialization: S	0.116	0.048	0.134	2.412	0.017**
Externalization: E	0.175	0.056	0.206	3.130	0.002**
Combination: C	0.157	0.061	0.191	2.568	0.011**
Internalization: I	0.314	0.055	0.396	5.710	0.000**

Adjusted R^2 =0.639 ,**(p < 0.05)

In Table 3, a Stepwise Multiple Regression Analysis Of independent variables for each aspect found that the 4 variables that affect the innovation performance were Socialization: S, Externalization: E, Combination: C, and Internalization: I were equal to 0.134, 0.206, 0.191 and 0.396 respectively at the statistical significance level of 0.05. In the overall, it was found that the tacit knowledge management was affected by the innovation performance using a

SECI Model with statistical significance at the level of 0.05 (ß = 0.800, p <0.05). Therefore, the hypothesis 1 was accepted with a probability value of 63.9 percent.

Table 4. *The Results of Tacit Knowledge Management by using the PRO Model that Affects the Innovation Performance*

Independent Variables	variables				
	Innovation Performance (IP)				
	B	SE	ß	t	p-value
Constant **The PRO Model (The Personal Responsibility Orientation)**	0.689 0.853	0.157 0.036	 0.861	4.437 23.917	0.000** 0.000**
Constant	0.741	0.150		4.937	0.000**
Personal Responsibility : PR	0.169	0.044	0.208	3.852	0.000**
Learner self-direction : LS	0.174	0.053	0.114	2.487	0.014**
Self-directed learning : SD	0.127	0.046	0.139	2.754	0.006**
Self-direction in Learning : SDL	0.287	0.048	0.323	5.950	0.000**
The Social Context : SC	0.263	0.038	0.344	6.908	0.000**

Adjusted R^2 0.740 ,**p < 0.05

In table 4, a stepwise multiple regression analysis of independent variables in each aspect found that the variables that affected the innovation performance were 5 variables which are personal responsibility with the highest mean of 4.43, followed by learner self-direction, self-directed learning, Self-direction in Learning, and the Social Context that were equal to 0.208, 0.114, 0.139, 0.323 and 0.344 respectively at the statistical significance level of 0.05. In the overall, it was found that the tacit knowledge management was affected by innovation performance and by the learning that emphasized personal responsibility with statistical significance at the level of 0.05 (ß = 0.861, p <0.05). Therefore, the second hypothesis was accepted with a probability value of 74.0 percent.

DISCUSSION AND CONCLUSION

From the research on tacit knowledge management that affects the innovation performance of lecturers at private university, the results were summarized and discussed according to the objectives of the study as follows:

1. Analysis of tacit knowledge management of the knowledge management process that affects innovation performance by using a SECI Model: According to previous studies, it has been found that tacit knowledge management of the knowledge management process by using a SECI Model have a positive impact on innovation performance when considering each aspect found that Socialization, Externalization, Combination, and Internalization affected innovation performance with statistically significant levels due to personnel exchanging knowledge between each other and outsiders by disseminating knowledge, gathering Systematically knowledge, Applying the gained knowledge in this operation leading to the creation of knowledge to flow throughout the organization. This is consistent with the research of Chansukree P. and others (2017) the Study of Knowledge Management in Creative Tourism: A Case Study of Amphawa Floating Market Community Samut Songkhram Province by using the Knowledge Spiral theory used in data collection and analysis (SECI Model). It was found that the Amphawa floating market community has a knowledge management process according to the knowledge spiral theory, which includes exchanging learning (Socialization), knowledge extraction (Externalization), integration of knowledge (Combination), and the embedding or sealing of knowledge (Internalization). Therefore, the Amphawa water market community can use knowledge management to develop creative tourism in a variety and quite complete.

2. Analysis of tacit knowledge management that affects innovation performance by PRO Model that emphasizes personal responsibility. According to previous studies, it has been found that tacit knowledge management by PRO Model learning that emphasizes personal responsibility has a positive effect on innovation performance. When considering each variable factor, it was found that Personal Responsibility, Learner self-direction, Self-directed learning, Self-direction in Learning and The Social Context affected innovation performance at statistically significant levels because the students were responsible for themselves by setting goal plan to learn new things,

applying knowledge in their own work, supporting in the transfer of knowledge, and giving an opportunity to participate in the exchange of knowledge. This is consistent with the research of the sovereignty Potang A. and Photisuvan C. (2016) that studied the accumulation of knowledge in people in order to improve the work ability of workers in the workplace. The social interaction process (Socialization) is the learning of adults. According to the Personal Responsibility Orientation (PRO Model), the process of accumulating knowledge at the workplace of people is entering the labor state, surveying the work, setting Learning management targets, and the accumulation of knowledge in people.

RESEARCH CONTRIBUTIONS

Managerial Contributions

The human resource management of an organization is one of the important policies of the organization. The management of tacit knowledge arises from a knowledge accumulation, work ability, exchange of experience, beliefs, values. There is a process of search, exchange, and accumulate it from a social process through the interaction process. Therefore, the Knowledge Management process (SECI Model) is an important process to help build knowledge, to transform it into new knowledge, and to distribute it to members in the organization. In addition, the accumulation of knowledge also comes from their own learning methods, responsibility for developing one's ability by creating a learning process that focuses on personal responsibility to learn new things to be used in the organization and eventually become the property of the organization.

Theoretical Contributions

This research is a theoretical integration through the use of the concept of knowledge management that affects innovation performance by focusing on the management of Tacit Knowledge using the knowledge management process (SECI Model) and also taking the concept of learning that emphasizes personal responsibility (PRO Model) as a variable. The researcher agreed that it was consistent and suitable for the study in the context of the teachers at private University. The findings obtained from this study are a test for the relationship and influence of these variables, which in theory can bring the findings from this research to further investigation with other independent variables that can influence other variables in the context of each organization.

Suggestions for Future Research

1. This research is quantitative research that used the questionnaire to collect data from the sample only. In future research, qualitative research may be used as well to gain insights with more useful details and able to use research results to improve the efficiency and effectiveness of the organization.

2. In this research, the author was interested in the context of the lecturers of private University only. In future research, it will be able to apply the context of other sample groups to this research, such as personnel from other types of business organizations. The variables in this research can be applied to every organization.

3. It can be able to apply other theories to create variables, to have variable or to study the influence of other factors that affect the performance of various variables that will be beneficial to the organization's development.

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Willingness to use and Pro-Environmental Attitudes for Airlines' Environmental Friendly Services: The Perspective of Thai Passengers

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Abstract This research has three main objectives. Firstly, there is intention to understand passengers' perception towards airlines' environmental friendly services related to pre-travel, pre-flight and in-flight service. Secondly, there is the investigation of passengers' pro-environmental attitudes and perception towards airlines' environmental friendly services. Thirdly, there is the analysis of passengers' willingness to use the airlines toward pro-environmental attitudes. To confirm theories and relevant literature have been drawn both paper version and reliable sources which is our methodology. Utterly, the results showed that there are significant in perception towards airlines' environmental friendly services and passengers' pro-environmental attitudes. Additionally, passengers' pro-environmental attitudes have a positive effect to willingness to use the airlines. The conclusion is substantial to the improvement and sustainability of airline environmental protection effort and airline business performance.

Keywords: Willingness to Use, Pro-Environmental Attitudes, Environmental Friendly Services, Passenger Perception

INTRODUCTION

Airports in Thailand have the capacity to accommodate a huge number of passengers. Suvarnabhumi International Airport sees an average of nearly 70 flights flowing in and out per hour. Several other airports across the country accommodate more than 10 fights per hour. To support the increased capacity demands that are primarily resultant from the gradual growth of international visitors, airports across Thailand are investing significant financial and human resources into improving their operations. (Thailand Board of Investment, 2019)

Thailand, moreover, relies on imported aviation equipment and is a net-importer of products including aircraft parts, maintenance services, and airport/ground support equipment. U.S. aviation equipment and technology are well received by Thai buyers (The International Trade Administration, ITA, 2019). Additionally, Thailand is expected to receive over 40 million tourists in 2019, a 5.5% increase from 2018 according to the Tourism Council of Thailand. Under a Thai government policy to develop the domestic aerospace industry, Maintenance, Repair and Overhaul (MRO) services will take center stage. Thailand is a major player in regional aircraft maintenance and manufacturing industries. Infrastructure facilities are in place for aircraft repair and engine overhaul services. The major leading airlines in the country, Thai Airways, Bangkok Airways, and Thai Lion Air, have established Maintenance MRO facilities, aiming to serve their own aircraft and those of other airlines that service Thailand.

Airlines' environmental friendly services are mentioned in term of environmental management in 2018. Moreover, Airports of Thailand Public Company Limited (AOT) has continuously been committed to enhancing airport service quality, safety as well as the well-being of communities surrounding airports so as to achieve its vision to operate the world's smartest airports while increasing competitive excellence according to the Strategic Plan's goals to be reached by 2021 as well as respond to the Sustainable Development Goals of the United Nations. (AOT, 2018). In terms of sustainable development aspect, AOT has included the issues on the country's development and the social well-being and benefits as part of its strategies and day to-day operations by defining activities or providing support to improve the environment, society and economic system (Ibid)

Rarely, willingness to use of Airline Business have been founded. In the study of Martín (2008) to mention about Willingness to Pay for Airline Service Quality in term of the monetary valuations, pay, of air travel regarding level-of-service attributes. The quantitative method, logit regression, has been studied from the work of Garrow (2007) the willingness to pay to travel by air and willingness to pay for air service improvements are developed. Additionally, Kuoa and Jou (2017) refer to the supply side of strategic pricing planning for the civil aviation industry rather than the demand side. Therefore, the willingness to use in airline business still be in the dark, this research would like to shine it.

In term of pro-environmental attitudes, Félonneau and Becker (2008) studied about social dominant norm which are self-reported environmental concern is not necessarily accompanied by a change in attitudes, values and beliefs. Furthermore, the self-presentation paradigm examined student's adherence to and knowledge of this pro-ecological norm had been explored by Felonneau and Becker (2008) and discuss on the gender differences.

A survey the to study on Psychology and Educational Sciences study programmes from Pavalache-Ilie and Unianu (2012) revealed that the fact that it is necessary to train internality in order to develop a more positive attitude towards the environment. This can be realized within an educational programme aimed to promote the acquisition of internality in the causal explanation of

behaviours, adapting the internality training techniques to city population, teachers, employees and children. What's more, pro-environmental attitudes rise and fall with current events and vary with age, gender, socioeconomic status, nation, urban-rural residence, religion, politics, values, personality, experience, education, and environmental knowledge (Gifford and Sussman, 2012). However, the airline aspect of the attitude in the pro-environmental attitude should be clear.

Finally, this research has three main aims which are to study Thai passenger perception towards airlines' environmental friendly services related to pre-travel, pre-flight and in-flight service. To understand passengers' pro-environmental attitudes and perception towards airlines' environmental friendly services and passengers' willingness to use the airlines toward pro-environmental attitudes. The literature review include the three group of variables, items, as showed in the topics of this article. Lastly, the two hypothesis were tested and the result will be showed as well as discuss in the last part.

LITERATURE REVIEW

Airlines' Environmental Friendly Services

Commercial aviation industry is a critical contributor to global greenhouse gas (GHG) emissions of some pollutants and make the negative impact on the environment that cause alternately global warming (Forsyth, 2011). Additionally, there are some endeavors that airline companies demonstrate their modest policies and technological advance to express their concern for global environment protection. These efforts include reducing carbon footprint, testing of alternative bio-fuels efficiency of newer aircraft, using renewable energy, recycling fuels during aircraft maintenance. In this related method will be able to mitigate the growth of carbon Dioxide (CO_2) emission generally produced by the airline industry. (Mair, 2011).

The International Air Transport Association (IATA) has addressed the environmental benefits of climate impact management as part of airline leader industry to achieve a zero carbon-emission future flight by the year 2050. This objective is required all IATA airline members' responsibility in order to strongly operate practices together followed in the aviation industry's four pillar climate protection strategy. This strategy absolutely consists of technological progress improvements, aircraft operational efficiency and ground processes measure, based-airport infrastructure improvements and a global market-based measure system to complement the other three pillars (IATA, 2009). Attributes of airlines' environmental friendly services have been proposed from reputed airlines website and international airlines' annual sustainability reports. The items are most truthfully associated with air passenger services can be divided into the following three stages of procedures: pre-travel, pre-flight and in-flight service.

In the pre-travel stage, online services are provided during the airline ticket reservation process such as seat selection, special meals order and selection. Passenger also receive flight information, for instance, time table, flight status, schedule management, additional services, membership services, promotions and travel distribution channels. In addition, airlines decide to use lightweight materials for all cabin service equipment or eco-friendly products to reduce aircraft fuel consumption and greenhouse gas emissions. Moreover, airlines convince passengers to pre-order in-flight meal and duty free product through online electronic system before departure flight to decrease aircrafts' total weight (China Airlines, 2018a).

As for the pre-flight stage, most airlines have introduced automatic ticketing and self check-in kiosks, passengers can completely check-in via mobile application or official airlines' website, print out e-boarding pass and e-luggage tag before selected departure flight. E-boarding pass includes passenger seat assignment and flight detail. This online service certainly save passenger time from waiting in line at the airport and promote paper saving activities, then passenger can present boarding pass at bag drop counter and proceed to boarding gate. (China Airlines, 2018a). Subsequently, Airlines establish the accuracy of flight plans during period of take off until landing for appropriate engine-aircraft performance in relation to optimal function of aircrafts and fuel efficiency. At the same time, airlines capably prepare passenger information, weight and balance detail in order to adjust aircraft configuration and passenger seat allocation for minimizing fuel consumption. In this way, airlines invest continually in newer and ultra-modern long haul aircraft especially innovation in fuel-efficient aircraft and engine technologies. (Japan Airlines, 2019).

During in-flight service process, most airlines encourage passengers to participate 3 R rules: reduce – reuse – recycle measure or other environmental friendly activities for establishing even more sustainability on board. For example, cabin attendants request passengers to close cabin window shade in high summer before they deplane from the aircraft to decline cabin temperature, alleviate the heavy usage of aircraft ventilation system and reduce the costs of the Auxiliary Power Unit (APU). Meanwhile, airlines propose passengers to assist flight attendants to separate cabin waste on board such as used cups, beverage cans, bottles and lids for recycling items. These give passengers opportunity to decrease environmental impact at the moment of their en route journey. Airlines also recommend passengers to reuse in-flight supplies such as paper cups, chopsticks, headset, upcycling amenity kits to reduce resource consumption. Besides, airlines promote electronic and information services by offering E-journal instead of classic newspapers and magazines. Airlines implement the exclusive use of eco products on long-haul flight in all service classes and the avoidance of plastic outer packing for amenity kits, slipper bags, reusable boxes and blanket cover bags. Moreover, airlines incorporated the concept of environmental protection into the design of in-flight meal. They offer mostly healthy, balanced and high quality ordinary raw material and put a ban on the use of overfished or endangered species. Another point is in-flight meal menu are printed by soy ink on recycled paper and marked with carbon footprint to foster passengers' environmental awareness. (China Airlines, 2018b, Lufthansa group, 2019). Base on the above discussion, the following hypothesis is developed:

H1   Perception towards airlines' environmental friendly services positively affect passengers' pro-environmental attitudes.

Pro-environmental Attitudes and Willingness to Use

Environmental attitudes are considerable essential as an antecedent of environmental behaviors, often measure in tourism research as key indicator of tourist internal influence to predict individuals' environmental behaviors (Kim, 2012). The term of attitudes are defined as an outcome of unobservable psychological process. They also determine as predisposition which cause of learning to response the positive or negative of specific action. Attitudes are closely significant relation to belief, trust and intention that are direct factors of concrete product and service decision making process. (Meng and Choi, 2016)

In recent years, it appears to be the case that, the attention in pro-environmental attitudes which emerges when individual greener tourists apperceive and concern about the consequences of climate change toward the environmental friendly issues. It is generally accepted now that tourism and hospitality companies should be emphasized and take responsible for their corporate social responsibility (CSR) and environmental friendly activities (Whitmarsh and O'Neilli, 2010).

Based on the Theory of Reasoned Action (TRA), an individual's behavioral intention is determined by variation of his/her attitude to engage in that positive or negative behavior of each personal final decision. (Ajzen and Fishbein, 1980; Fabrigar et al., 2006). As many current studies of the literature have shown that a positive and significant association between pro-environmental attitudes and diverse pro-environmental tourist behaviors.   Mayer et al. (2012) examined that 612 air passengers general attitudes regarding a green image of different airlines both full service network carriers and low cost carriers operating at Liverpool John Lennon Airport of England.   The result indicated that air passengers can differentiate between airlines based on their environmental friendliness and green image of the airlines. Air travellers also differentiate between the perceived effectiveness of the measure that airlines can adopt to decline their environmental impact. Using new aircraft is determined as the most productive method to confirm airlines' environmental commitment. According to Chen et al. (2012), they described that while generating a green image positively affects consumer purchasing behavior, the effect of corporate social responsibility initiatives on customer loyalty in the airlines industry are generally considered by the majority of Taiwanese customers. The research findings has shown that when airlines recognize the essential of environmental protection, they has responded by incorporating environmentally friendly practice such as reducing air pollution, complying with international and national environment regulations, using renewable energy and reducing energy consumption on the ground. As a result, an increasing number of Taiwanese customers have positive attitudinal loyalty regarding airline social responsibility initiatives and become lifetime customers as a member of frequent flyer passengers of the airlines. Hagmann et al. (2015) conceded that most passengers hold different green image of the airlines. These images are specific to passengers' general attitude regarding green image of various airlines. Passengers' general attitude and perceived environmental friendliness influence airline choice during reservation process. It is also illustrated that passenger are willing to pay extra for a greener flight and eco-friendly service options.

According to these research results, it could be said that passengers are willing to use airlines when they have more particular attitudes to do things that are environmentally friendly. Thus, the following hypothesis is proposed:

H2 Passengers's pro-environmental attitudes have a positive effect to willingness to use these airlines

The proposed theoretical research framework includes a total of 2 constructs and 2 research hypothesis. The relationship between each constructs are illustrated in figure 1
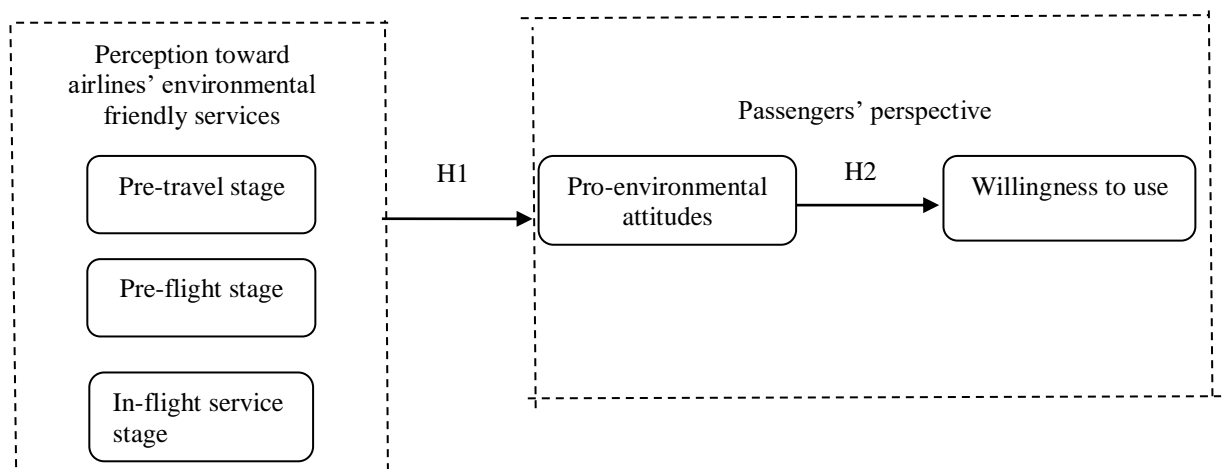

Figure 1: **Research Framework**

METHODOLOGY

Population, Sample Size And Sampling Techniques

A population was derived from Thai passengers who had air travel experience at least one flight on both full service and low cost carriers' flights and arrived to and departed from Suvarnabumi International Airport (BKK) within the past three year. Available data of the population number from the last year was 8,446,070 (Ministry of Tourism and Sports of Thailand, 2018). The sample size for regression analysis was based on Hair et al. (2014) which indicated that the desired level is between 15-20 observations for each predictor variable. Also, the minimum sample size should be 100. In this research, the predictor variables are 3, which require a minimum sample size at 100. Convenience sampling was applied as nonprobability sampling technique in this study to select Thai passengers who had experienced with the airlines.

Research Tools

The questionnaire was considered to be the major tool of quantitative research which was divided into four main parts. The first part, socio-demographic profile of respondent was obtained regarding their gender, age, highest education level, occupation and personal income. Travel behaviors also were stated in this part which include purpose for air travel, number of air travel per year, frequent used carrier, accompanying persons and travel arrangement. The second part consisted of variables that were adapted from previously validated studies, the websites and sustainability reports of internationally famous airlines to determine the group of variable mentioned in the Table 1. Respondent were asked to indicate overall level of perception toward airlines' environmental friendly services. The participant also state their pro-environmental attitudes which based on Davison et al. (2014); Alcock et al. (2017) in third section of the survey. At the final part of questionnaire, willingness to use such airlines based on Oreg and Katz-Gerro, 2006; Hagmann et al. (2015) were also rated by respondent. Item-Objective Congruence Index (IOC) was applied into a content validity test evaluated by three experts. These experts include two supervisors of flight operations and one academic lecturer from logistical transportation and aviation business of renowned university. The congruence index of the questionnaire is much higher than minimum score at 0.5. This means the overall content of various items of designed questionnaire are completed to be used in the pilot test process (Pasunon, 2010). Thirty pilot questionnaires of 30 airline passengers or equivalent were distributed via an online channel. After that, we calculate the some significant statistics to test the assumption and following with the process of questionnaire improvement. The reliability test of this research demonstrated Cronbach's Alpha Coefficient at 0.720 for levels of perception toward airlines' environmental friendly services, at 0.734 for levels of pro-environmental attitudes and at 0.809 for levels of willingness to use airlines. These questionnaire implied to a good internal consistency which could be used as reliable tools for the research (George, Mallery, 2000)

Data Collection

There are three main stage of data collecting process which consists of preparation stage, gathering and collecting data stage, and the data filling out and purify stage. We can describe in details at the following

1. The preparation stage

The data was collected by questionnaire which consist of four parts as mentioned in research tools detail.

2. The gathering and collecting data stage

Data gathered from designed questionnaire were randomly selected passengers of Thai airlines passengers for international as well as domestic flights and questionnaire were collected through an online survey via participated family and friend e-mail. The invitation was also published on online community website, such as Facebook. At the end of this stage, the number of 145 valid response were received. Respectively, 134 self-completed questionnaires were fully retrieved.

3. The data filling out and purify stage

To make sure that the data are clean and ready to analyze the quantitative results which are including to show in term descriptive statistics in Table 2 which are demographic information of Thai passengers. Thai passenger travel behaviors were indicated in Table 3, respectively. The average and the correlation between the main variables were illustrated in Table 4. Finally, the test of two main hypotheses to describe the stated research objectives were in Table 5, the regression analysis result.

Table 1. *The Attributes of Airlines' Environmental Friendly Services*

Attributes	Statement
Pre-travel stage	- Provide online service during the airline ticket reservation process to decrease paper usage - Convince passengers to pre-order in-flight meal through online electronic system before departure flight to prevent food waste - Suggest passengers to pre-order duty free items through E-shopping system before departure flight to reduce aircraft loading - Use lightweight materials for all cabin service equipment to reduce the aircraft fuel consumption
Pre-flight stage	- Provided e-check in service via mobile application or official airlines' website and automatic ticketing and self check-in kiosks at the airport - Encourage passenger to print out e-boarding pass and e-luggage tag before departure flight to replace paper usage - Conduct the accuracy of flight plans for engine-aircraft performance in relation to aircraft optimal function and lower fuel consumption - Adjust aircraft configuration and passenger seat allocation to save fuel consumption - Invest in newer and ultra-modern long haul aircraft for fuel efficiency and engine technologies
In-flight service stage	- In summer, request passenger to close cabin window shade before disembarkation to decline cabin temperature and heavy usage of aircraft ventilation - Propose passengers to assist cabin attendants to separate cabin waste on board, e.g., used cups, beverage cans, bottles and lids for recycling items. - Recommend passengers to reuse in-flight supplies, e.g., paper cups, chopsticks, headset, upcycling amenity kits to reduce resource consumption - Promote in-flight entertainment system to display e-journal instead of classic newspapers and magazines to reduce paper consumption - Use eco products on board in all service classes and avoid using plastic packing for amenity kits, slipper bags, reusable boxes and blanket cover bags - Use ordinary ingredients produce for in-flight meal and put a ban on the use of overfished or endangered species - Use soy ink on recycled paper for in-flight meal menu and marked with carbon footprint to foster passengers' environmental awareness

EMPIRICAL RESULT

From Thai passenger as the sample of 134 respondents. Most of them were 85 female respondents (63.4%). The majority participants were 31-40 years, representing 45.5%. The largest group of 63 (47.0%) respondents gained bachelor degree education, and only 4 (3.0%) respondents achieved below bachelor degree. Of the 134 respondents, 47 (35.1%) were private business employees, 42 (31.3%) were government/civil servants, 25 (18.6%) were business owners. Only 10%, 6% and 3% respectively were temporary workers, others relevant occupations and students. The majority respondents of 49 (36.6%) had average incomes between 20,001-40,000 Baht per month. The following table summarizes socio-demographic information of Thai passengers.

Table 2. *Socio-Demographic Information of Thai Passengers*

Variables	Frequency	Percentage
Gender		
Male	49	36.6
Female	85	63.4
Age		
12-20 years	4	3.0
21-30 years	17	12.7
31-40 years	61	45.5
41-50 years	33	24.6
Above 51 years	19	14.2
Education level		
Under Bachelor degree	4	3.0
Bachelor degree	63	47.0
Master degree	59	44.0
Doctoral degree	8	6.0
Occupation		
Student	4	3.0
Government/Civil Servant	42	31.3
Private business employee	47	35.1
Business owner	25	18.6
Temporary worker/Freelance	10	7.5
Others	6	4.5
Personal income per month		
Less than 20,000 THB	25	18.7
20,001-40,000 THB	49	36.6
40,001-60,000 THB	18	13.4
60,001-80,000 THB	9	6.7
80,001-100,000 THB	12	8.9
More than 100,000 THB	21	15.7

Table 3. *Thai Passenger Travel Behaviors*

Variables	Frequency	Percentage
Purpose of travel		
Leisure/Holiday	50	37.3
Business	31	23.1
Education	14	10.5
Visit friend/relatives	15	11.2
Medical purpose	8	6.0
Meeting/Seminar	16	11.9
Number of air travel per year		
1-2 times	27	20.1
3-4 times	54	40.3
5-6 times	41	30.6
More than 6 times	12	9.0
Frequent used carrier		
Low-cost carrier (LCC)		
Full-service network carrier	53	39.6
(FSNC)	81	60.4
Accompanying persons		
Alone	34	25.4
Friends/Colleague	42	31.3
Spouse	31	23.1
Family	27	20.2
Travel arrangements		
Own arrangement	95	70.9
Package	39	29.1

Based on the Thai passengers travel behavior results were presented in Table 3, 37.3% or 50 passengers traveled for leisure purpose whereas 23.1%, 11.9%, 11.2% had other purposes on business, meeting/seminar and visiting friends and relatives. The rested travel for education purpose and medical purpose. That is, 54 (40.3%) of respondents had experienced by air travel mode at 3-4 times per year. Most of respondents, 81 persons (60.4.%) are frequently fly with full service carrier. According to the number of accompanying persons, majority respondents of 42 (31.3%) passengers traveled with friends or colleagues. In addition, 95 respondents (70.9%) arranged trip by themselves whereas 39 passengers or 29.1% decided to choose travel agency to arrange their trip package including accommodation, air ticket and travel itinerary.

Table 4. *The Average and the Correlation between the Main Variable*

Variables	Perception toward airlines' environmental friendly services			Passengers' perspective	
	Pre-travel stage	Pre-flight stage	In-flight service stage	Pro-environmental attitudes	Willingness to use
Mean	4.31	4.34	4.06	4.27	4.19
Standard Deviation	.552	.415	.734	.412	.624
Pre-travel stage	-				
Pre-flight stage	.500**	-			
In-flight service stage	.319**	.376**	-		
Pro-environmental attitudes	.340**	.464**	.481**	-	
Willingness to use	.620**	.619**	.540**	.574**	-

As the result showed in Table 4, the pearson's correlation between the set of variables are in between .319 and .620. Moreover, the relationship of the group of variables are significance at 0.05. Therefore, the simple regression analysis is developed to test for the two main hypothesis. However, to determine the effect of perception toward airlines' environmental friendly services we need to calculate the grand mean of pre-travel, pre-flight, and in-flight service stages which are 4.31, 4.34 and 4.06.

An initial assumption was completed to verify the use of the data for regression analysis. A Durbin-Watson value of 1.737 and 1.855 was calculated. With this value between 1.50-2.50, it can be realized that the data meet the assumption of independence of residuals. Leverage value was 0.007 determined to be less than 0.5, thus indicating that no case had excessive leverage in the model. Additionally, all Cook's distances were 0.12 and 0.11 which were below a value of 0.2, indicating that there were no influential points.

Table 5. *The Regression Analysis Result*

Variables	Hypothesis	
	Pro-environmental attitudes **H1**	*Willingness to use* *H2*
Perception toward airlines' environmental friendly services	.523***(.068)	
Pro-environmental attitudes		.870***(.108)
Adjusted R^2	.310	.330
*** p<0.05 , (The value in this table showed the regression coefficients and standard deviation)		

The regression analysis result from Table 5 aims to test the effect of perception toward airlines' environmental friendly services on willingness to use through pro-environmental attitudes. The enter method was employed in this stage even though several other methods are available to build models, controlling how variables are included into a model; note also that several methods can be combined. Therefore, the main goal of this methods is to determine the best subset of variables explaining a dependent variable. The result showed that perception toward airlines' environmental friendly services has positive impact on pro-environmental attitudes (β = 0.523, p < 0.05) at 0.05 significance level. So that we do not reject the null hypothesis of the first assumption, H1. Not surprisingly, pro-environmental attitudes has positive effect on *willingness to use* (β = 0.870, p < 0.05) at 0.05 significance level. So that we do not reject the null hypothesis of the second assumption, H2 as we expected.

CONCLUSION

The result of this research reveals the understanding of passengers' perception towards airlines' environmental friendly services related to pre-travel, pre-flight and in-flight service has been focused in details. In addition, the study considers analysis of passengers' pro-environmental attitudes and perception towards airlines' environmental friendly services as well as passengers' willingness to use the airlines toward pro-environmental attitudes were analyzed to confirm the theoretical model as we founded in the literature review.

Hypothesis 1, H1, Perception toward airlines' environmental friendly services has positive effects on pro-environmental attitudes from the pearson's correlation and simple regression analysis which R^2 of .310. This results illustrate the influence that Thai passengers are perceived the significantly environmental friendliness issues of the airlines based on their environmental friendly services which can be associated with pro-environmental attitude. Apart from the Mayer et al. (2012) study confirmed that passengers are perceived the effectiveness of environmental friendliness measures among 12 of airlines. These measures include: using new aircraft, offering carbon off-setting, testing bio fuels (can be subjected to environmental friendly service related to pre-flight stage); reduce the waste on board and serving fair trade and organic products (can be subjected to environmental friendly service related to in-flight stage).

The finding reported that air travellers' attitude towards different airlines are diverge depending on their perception regarding effectiveness of environmental measures. From the passengers' viewpoint of this issue, an effective approach are evaluated as more environmental friendly activities. Hwang and Seong (2019) seem to agree that when air passengers acknowledge an attempt of environmentally friendly airline to well-established environmental concerns and conduct prosperously environmental protection such as saving fuel, reducing waste and recycling. It is fair to say that air passengers are more likely to show higher levels of desirable attitude toward various airlines.

Hypothesis 2, H2, Pro-environmental attitudes has positive impact on *Willingness to use* is confirmed by the pearson's correlation and simple regression coefficient as well as R^2 at the level of .330 respectively. In this exploration, the results

demonstrated the high correlation coefficient that can be inferred that Thai passengers' pro-environmental attitudes and willingness to use are positive associated. To likewise, Van Birgelen et al. (2011) concluded that air passengers who have positive attitudes toward carbon offsetting and well understand negative impact of CO_2 emissions from air travel on the environment, they are willing to choose the airline that participate carbon offset program at the time of purchasing tickets. An investigation by Lu and Wang (2018) also illustrated that carbon offsetting air travel has a positive impact on the natural environment, that is why passengers' attitudes toward voluntary carbon offset schemes program are related to willingness to use the airlines that implement this program. Additionally, airline passengers are also willing to change their travel behaviors when travelling by air. For example, passengers intend to decrease baggage weight to mitigate carbon emissions. Besides, passenger willing to compensate extra charge for a low-carbon flights. Another study by Hwang and Seong (2019) pointed out that there are significant positive relationship between airlines' green image and desire to take an environmentally friendly airlines. If passengers respond to strong environmental reputation of the airlines, there will be a positive on their decision to choose with that airlines.

RESEARCH CONTRIBUTION

There are three main groups of people and institution would get the benefit from our research results which are at the following

1. Airline business to improve business performance through their effort in environmental friendly services on behalf of marketing strategies which well-appointed as environmental protection policy in each airlines' annual sustainability report. Furthermore, airline should continually provide air passengers with environmental education information on particular environmental friendly services to enhance passengers' perception of these services which could develop their positive pro-environmental attitudes and be more willing to use airlines' select routes. Airlines can demonstrate fuel saving consumption, carbon emission and mitigation via several media channel such as in-flight entertainment, magazines, printed card or airline website. In addition, airlines can promote frequent flyer passengers to join reduce, reuse, recycle or other environmental friendly services on environmental themed flights (e-flights).

2. The Civil Aviation Authority of Thailand (CAAT), on behalf of an aviation regulator as a part of policy maker, to develop environmental policy measure that encourage airlines to meet sustainable development goals. These includes the processes to reduce carbon emission, air pollution, energy consumption and the involvement in environmental protection program. Apart from that, CAAT should remind authorized airlines to follow the international standard of Environmental Management System (EMS) to obtain ISO 14001 certification for their environmental management accreditation and environmental commitment affirmation.

3. The linkage of airline industry and hospitality service sectors to expand and extend the environmental friendly services. Airlines can provide travel arrangement services via their website. For example, promoting green connection by public transport to reach the airport, offering eco-friendly accommodation as per airline marketing package and proposing eco-friendly or organic product with recycle packaging.

SUGGESTION FOR FUTURE RESEARCH

To improve the quality of the research and the new paradigm of perception toward airlines' environmental friendly services in airline business as well as to extend the concept of pro-environmental attitudes has positive and willingness to use environmental friendly services. We recommend to expand the work on this topic in three main perspectives

1. To study in term of the comparative study which is used to determine and quantify relationships between two or more variables by observing different groups that either by choice or circumstances is exposed to different treatments. For example, Thai and foreign passenger.

2. To employ path analysis to be our theoretical testing. Because this method, allow us to specify relationships among the set of the independent variables. The result can show us the causal relationship through which independent variables produce both direct and indirect effects on a dependent variable.

3. To follow up the Thai passenger about the persistence in behavior. In this case, the data base might need to create the cohort study and the time-series data analysis need to be concerned. However, we might gather the personal contact via the e-mail to let them give us the personal behavior. So that the electronic questionnaire that might be help us to collect the data in term of panel study with priceless and placeless.

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