

CHAPTER I

INTRODUCTION

Rationale for the Study

“Green business” is used in discussions of businesses and business practices which are viewed to be environmentally sound. In the early 21st century, many companies began capitalizing on growing consumer desire for sustainable business by “greening” their practices to make them more environmentally friendly, and a number of entrepreneurs sometimes known as ecopreneurs opened businesses with a green slant. Today, green business is an extremely profitable branch of the business world, and it hosts a range of companies, from prestigious multinational companies to small, locally based companies (Green Franchise, 2010).

In order to be considered a green business, a company must use practices which are viewed as sustainable and environmentally friendly. These practices might include the use of organic and natural products to build its factories, tighter protections against emissions, and environmentally responsible sourcing of supplies. For example, a green clothing business would seek out organic, fair-trade cotton to promote an environmentally friendly image, and it might have a factory with a living roof, or power gained from solar panels. Many green businesses are also concerned about human and animal exploitation, and they make an attempt to create cruelty free products and to pay their workers well in addition to providing them with benefits (Green Franchise, 2010).

The goal of a green business is to keep its environmental footprint small by reducing waste and reusing materials as much as possible. Many use innovative building techniques for their facilities which are designed to promote energy efficiency, along with building materials which are environmentally friendly, like panels fabricated from recycled materials. These companies also encourage their workers to think about the environment when they generate printed material and think about new products.

A green business can sell all sorts of things. Many car manufacturers, for example, have green model factories and offices to convince their target consumers that they are concerned about the environment. Many green businesses also offer green products, ranging from composting toilets to green architecture. When a company offers environmentally friendly products, many consumers also assume that the company itself is environmentally responsible, as its products reflect a concern about the environment (Green Franchise, 2010).

The success of green business has shown that it is economically feasible and in fact very sensible to do business in a sustainable, environmentally friendly way. It has also encouraged the growth of initiatives which are designed to benefit the environment from carbon trading to tax breaks for people who make energy-efficient modifications to their homes. However, it has also given rise to “green washing,” a trend exhibited by companies which want to capitalize on the green revolution in business without actually doing the deed. When businesses market themselves aggressively as green, you may want to do some deeper research to ensure that they are not green washing in an attempt to win your dollars.

Global warming is the phenomenon of world temperature which has been dramatically increasing from time to time (Webster, 2005) by the impacts of tremendous amount of greenhouse gases such as methane, nitrogen and especially carbon dioxide that are emitted to the atmosphere. These greenhouse gases act as an insulator that obstructs the excessive heat on the earth from releasing into space, hence these gases have forced the earth to become warmer (Vitousek, 1994). A variety of activities play a major role in contributing to the emission of a large amount of greenhouse gases to the environment. Deschenes (2009) mentioned that carbon dioxide was exhaled through human activities worldwide by 27,245,758 thousand metric tons in 2007. Furthermore, the process of combusting fossil fuel that causes the greenhouses emission such as burning oil, natural gas, and coal as sources of energy has been continually increased in considerable amounts, particularly in America and China (Nakicenovic, Gr Bler and McDonald, 1998). These threatening activities of human beings have caused our planet to devastating phenomena such as the melting of massive icecap of the north and south poles, the rise of ocean levels, extreme flood disasters, heat wave and drought conditions. The rise of ocean levels, for example has

forced around 120 million Bangladesh's residents who have lived near the Ganges, Bramaphuttra and Meghna River to lose their inland habitats by half a meter (Warrick and Ahmad, 1996). Furthermore, warmer ocean temperature has increased the number of devastating storms. The Katrina Hurricane was a good example that illustrated the great tragic incident from global warming that forced Louisiana to have an economic loss by \$ 80 billion and the death of 1,800 people.

Aviation business is the travel that emits carbon dioxide more than any other means of travel and it is not surprising that this business has been pinpointed as one of the main factors contributing to global warming. Because of this, all airlines can't turn a blind eye to the problem, and they begin to seek ways to alleviate the situation and address this problem. For example, British Airways has announced that it will use biological fuel produced from the garbage to decrease the glass house effects of the carbon dioxide.

Friends of the Earth organization (foe) (2008) stated that every year more than 16,000 commercial airplanes worldwide release more than 600 million tons of carbon dioxide into the atmosphere, the amount which is more or less equivalent to that released by all the people living in the African continent in a year. According to research by the Social Institute, Chiangmai university (2009), it is estimated that one airplane uses fuel in a brief distance aviation equal to that used by an automobile to cover a distance of 50,000 kilometers.

In terms of aviation business, many leaders of the industry have been awakened to the urgent need of solving the problems of global warming. Thus, they have created many green environmental programs, strategies, and activities to raise the environmental consciousness of all their stakeholders such as owners, supervisors, subordinates, tourists, communities and government to help save the planet from global warming and environmental degradation. These airlines have attempted to enter a green airline business.

In Thailand, many airlines have tried to be green and improve their environmental protection standards by taking the airlines to be the members of IATA (The International Air Transport Association). The association has high standards of environmental activities which all airline members are required to comply with. The activities are aimed to minimize waste, decrease energy consumption, avoid using

materials that contain hazardous substances and support airlines and communities to work together in successfully implementing natural conservation programs and reduce aviation emissions. The International Air Transport Association (IATA) has set a goal of creating a zero-emissions airplane within 50 years. The European Union plans to implement an emissions cap and trading system for airlines by 2012. But what are the airlines doing today? Many airlines have gradually begun to implement some of the programs; many airlines have switched fuel-guzzling aircraft to eco-friendly aircraft. For example, in the past decade, Continental Airlines has replaced most of the aircraft in its fleet with more energy-efficient planes. By installing winglets on most of its Boeing 737s and 757s, Continental has saved fuel and reduced emissions by nearly 5 percent. Also, the Houston-based airline has reduced emissions from the ground equipment at its hub by more than 75 percent since 2000. An environmental leader among the legacy carriers, Continental received an award from the U.S. Environmental Protection Agency (EPA) in April 2008 for being the first carrier to use an environmentally friendly pretreatment on its aircraft.

By installing new energy-efficient engines in its fleet of Airbus A319s, European low-cost carrier easy Jet claims it would reduce mono-nitrogen oxide (NOx) emissions by 25 percent. Additionally, the new engines would reduce fuel consumption by 1 percent, which translates to a reduction of 200 tons of CO₂ emissions per aircraft per year .

Seatgusu.com (2010) suggested that Lufthansa plans to have 10 percent of its fuel derived from alternative sources within 12 years. Like many other airlines testing biofuels, Lufthansa aims to power its aircraft with energy derived from sustainable source of plants or algae in combination with conventional airplane fuel. Lufthansa has forecasted that by 2020, it would have cut carbon dioxide emissions by 25 percent from what they were in 2006, and it would have cut nitrogen oxide levels by 80 percent from their 2000 mark.

Leading the way in switching to alternative energy for aviation, Virgin Atlantic completed the world's first flight using a biofuel-powered commercial aircraft. Virgin flew its Boeing 747-400 aircraft using 20 percent biofuel (a mixture of coconut and babassu oil) and 80 percent conventional jet fuel. Determined to finding a cleaner and

more sustainable form of fuel, Virgin has used all of its profits since 2006 for research and development of alternative fuels.

Determining a car's fuel efficiency is relatively straightforward and transparent. The average MPG for city and highway driving is advertised right alongside the sticker price. However, with aircraft, it is a bit more complicated. Fuel consumption varies based on aircraft speed, weight load, and wind speed, among other factors.

Mentioned about which airplanes are the most energy efficient and which airplanes are the least energy efficient. The list below, though by no means the ultimate list of the "greenest" aircraft, highlights some of the eco-friendly aircraft.

Airbus A319: The A319 is 15 percent more efficient than the similarly sized Boeing 737-300.

Boeing 787 Dreamliner: The highly anticipated new Boeing aircraft will use 20 percent less fuel per passenger, will produce fewer carbon emissions, and will have quieter takeoffs and landings than comparably sized aircraft, according to Boeing. Despite numerous setbacks, the plane is set to be unveiled in the third quarter of 2009.

Bombardier CSeries: To be launched in 2013, this single-aisle jet promises to "deliver dramatic energy savings," according to Bombardier.

Turboprop planes: Consuming much less fuel than standard jets, large prop planes like the Bombardier Q400, which are currently used by Alaska, Continental, Porter, and Qantas, might just be the future of short-distance air travel for cash-strapped airlines looking to cut fuel costs. However, many airlines are hesitant because the turboprops are not as fast as jet engines.

Airbus A380: Although Airbus had claimed the A380 would be the most environmentally friendly aircraft in the skies, fuel consumption was estimated for full flights on aircraft configured with many more seats than are actually in A380s today. Emirates, Qantas, and Singapore operate A380s with approximately 450 to 490 seats. Most long-haul flights today are less than 80 percent full, so when looking at an 80 percent full Singapore Airlines A380, it will produce about 101g of CO₂ emissions per passenger. For comparison, easyJet's A319s emit an average of 97.5g of CO₂ per passenger.

MD-82s: Because MD-82s can last more than 30 years, most of those in the skies today are relatively old and inefficient. An MD-82 manufactured in the 1980s emits approximately 21 percent more CO₂ than an Airbus A319 produced today.

Rungkamol (2001), who studied the impact of green marketing strategies on attitude of international tourists in selecting hotel accommodation in Bangkok, found what factors in green marketing strategy, can explain attitude and behaviors of international tourist in selecting hotel accommodation. Rungkamol (2001) studied about environmental problem following the policy of Green Leaf Foundation, to see if the hotel wanted to be green hotel. It tried to encourage and improve efficiency of hotels and related business in the tourism industry to respond to environmental development and protection by complying with the Policy and standards of environmental practice, solid waste management, energy management, green purchasing, air quality management, noise pollution, water management, storage and management of fuel, gas, and toxic waste, and cooperate with community and local organizations. It was found that compliance with the Policy and standards of environmental practice, solid waste management, and storage and management of fuel, gas, and toxic waste, influence customer attitudes in selecting hotel accommodation. The three factors that influence customer behaviors to comply with the Policy and standards of environmental practice, energy management, and storage and management of fuel, gas, and toxic waste. The research from Kaewthip, Homklin and Kusonwong (2009) who studied about detailed information regarding the sense of responsibility among tourists toward global warming issue: a case study in green hotel by focusing on 4 major programs including energy, water, solid waste and sustainable operating programs. These programs are directly related to routines activities of customers and employees that have strong potential to catalyze the severity of global warming problems to occur. However, in this research, the researcher was interested in the implementation of green environmental programs in airlines business, and only four areas would be focused: energy saving, water saving, waste reduction and environmental caring programs.

Protection of the environment and making the world a livable place for us who are now living as well as for future generation is a tremendous task. These cannot be achieved by the effort of only one person, or groups of persons or

companies. They are the responsibility of everyone. In the airline industry, the green programs and activities cannot be materialized by only the owners, supervisors and employees without the support of employees and passengers. In order to get them involved, they must be made aware of the adverse impacts if no actions are taken to avert the consequences. Information and knowledge about the environmental protection must be communicated to these people to make them aware of the adverse effects if no actions have been taken. However, participation in the programs should be voluntary and without disturbing their convenience and privacy. According to Ryden (2003), environmental knowledge can encourage people to understand the advantage of preserving environment and express positive actions for sustaining environment.

Because airlines are one of the major causes of global warming and environmental degradation, the airlines cannot ignore the impacts of their operation on the environment. As members of the IATA, airlines have to comply with the requirements of environmental protection and the Thai national flag carrier and low cost airlines have initiated green programs in their organizations. It is interesting to know whether the programs have seriously been implemented or just publicity for the airlines, and whether their employees are involved in the program.

Findings on how Thai Airways, One Two-Go Airline, Thai AirAsia and Nok Air low costs airlines operate about the policy of the environment and bring their airlines to be green airline and how these 4 airlines proceeding activity of the environment in energy, water, waste and environmental caring, show that all of them set policy about environment and want their employees to follow the policy. The main policy found was reduction of using paper, recycle paper, set project "Paperless", use paper at topmost advantage, turn off switch when not using light, save water, operating e-ticket program for decrease using paper quantity. For aviation part (airplane), the company tries to procure an airplane that is most effective in aviation, new and hi technology for saving the fuel. The new airplane will economize the fuel more than the past generation. The company is glad to encourage the activity that has advantage and can develop the society and the environment (Thai Airways airlines, One Two-Go Airline, Thai AirAsia and Nok Air low costs, 2011).

About the proceeding activity of the environment in energy, water, waste and environmental caring, it was found that these 4 airlines operated in line with the policy and proceeded with the activity about the environment every year to establish the employees' love for the environment. The activity included both operation in an office and the activity outside of the office. Each company believes that the interest in environment should build and establish the idea to the employees first and thereafter they will attend to the environment more and more (Thai Airways airlines, One Two-Go Airline, Thai AirAsia and Nok Air low costs, 2011).

The advantage that derived from environment caring are also advantage for the organization, for employees, for the society and for the country. The airline is a big organization with many employees; it uses more energy, water and produces garbage every day. If the organization can make employees realize about environment caring, it will reduce use of energy, water and save the earth. The reduced use of energy by the organization will decrease garbage. The image of the organization will go along with the sense of environment. The company can operate the green programs as a part of corporate social responsibility. The company can promote the organization in this way.

Purpose of the Study

The purpose of this study was to investigate whether Thai airlines—national and low cost airlines, have a policy to operate green airlines or not, and whether they have begun implementing the policy or not. In particular, the objectives of this study are as follows:

1. To examine whether the airlines have implemented their green programs or not
2. To identify whether or not they include the four areas-energy saving, water saving, waste reductions and environmental caring programs in their programs
3. To determine whether employees are involved in the programs and to what extent they are involved
4. To determine whether employees demographics are effecting their perception in energy saving, water saving, waste reductions and environmental caring programs

5. To determine whether employees demographics are effecting their participation in energy saving, water saving, waste reductions and environmental caring programs

6. To study the relationship between employees' perception of environmental protection and their support/participation in green program of green airlines

Scope of the Study

This study investigated the green programs of Thai Airways airlines, the Thai national flag carrier and One Two-Go Airline, Thai AirAsia and Nok Air low costs airlines operating in Thailand, the activities included in the program, and the level of employee participation in the program.

The researchers carried out the survey among employees who have participated and worked in airlines both direct and indirect ways in Bangkok, Thailand. The sample of this study comprised 400 airline employees of both Thai national flag carrier and low cost airlines in Bangkok, Thailand.

Definitions of Terms

Green airlines refers to Thai Airways, One Two-Go Airline, Thai AirAsia and Nok Air which operate their business by saving energy, water and materials, minimizing solid waste and maintaining high standard of service qualities to serve all consumers.

Green programs refer to green airlines, environmental, friendly activities that focus on 4 areas, including energy, water, waste and environmental caring. These require the target respondents' participation, so that the green airlines will be successful in environmental friendly management.

Low Cost Carrier (LCC) refers to an airline that offers generally low fares in exchange for eliminating many traditional passenger services.

Energy saving refers to policy in line with energy saving both in the part of an office and on an airplane which is given to employees in the organization for acknowledgement and following.

Water saving refers to policy in line with water saving both in the part of an office and on an airplane which is given to the employees in the organization who are expected to acknowledge and follow such a policy.

Waste disposal refers to policy in line with waste disposal both in the part of an office and on an airplane. This policy is given to employees in the organization for acknowledgement and following.

Environmental caring refers to policy in line with environmental caring, both in the part of an office and on an airplane. This policy is given to employees in the organization for acknowledgement and following.

Perception refers to the idea and belief of the target respondents toward the value of environmental protection in connection with energy saving, water saving, waste reduction, and environmental caring aspects.

Participation refers to the target respondents' involvement in energy saving, water saving, waste reduction, and environmental caring aspects.

Conceptual Model and Hypotheses

This framework provides the structure of the target respondents' perception toward global warming by concentrating on the environmental friendly actions toward green programs throughout the periods of their participation with green airlines, Bangkok, Thailand. Demographic profiles, environmental friendly perception of target respondents and environmental caring information of green airlines are essential factors that push the target respondents to show responsibility and participation in green programs for protecting the environment (Figure 1).

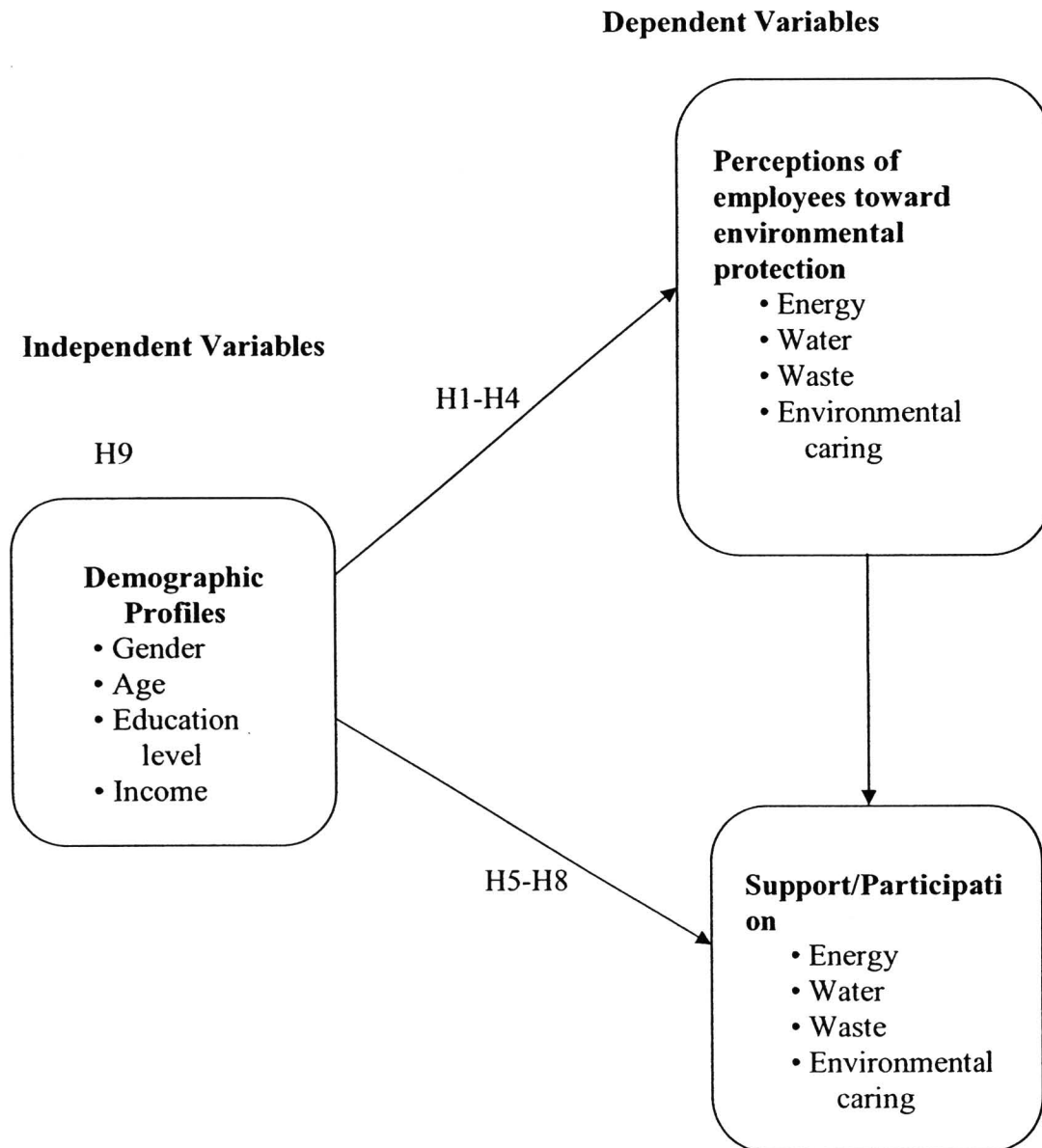


Figure 1 Conceptual Framework

Hypotheses

1. Employees with different genders have different perceptions about environmental protection in their airline.

1.1 Employees with different genders have different perceptions about energy saving.

1.2 Employees with different genders have different perceptions about water saving.

1.3 Employees with different genders have different perceptions about waste disposal.

1.4 Employees with different genders have different perceptions about environmental caring.

2. Employees with different ages have different perceptions about environmental protection in their airline.

2.1 Employees with different ages have different perceptions about energy saving.

2.2 Employees with different ages have different perceptions about water saving.

2.3 Employees with different ages have different perceptions about waste disposal.

2.4 Employees with different ages have different perceptions about environmental caring.

3. Employees with different education level have different perceptions about environmental protection in their airline.

3.1 Employees with different education level have different perceptions about energy saving.

3.2 Employees with different education level have different perceptions about water saving.

3.3 Employees with different education level have different perceptions about waste disposal.

3.4 Employees with different education level have different perceptions about environmental caring.



4. Employees with different income have different perceptions about environmental protection in their airline.

4.1 Employees with different income have different perceptions about energy saving.

4.2 Employees with different income have different perceptions about water saving.

4.3 Employees with different income have different perceptions about waste disposal.

4.4 Employees with different income have different perceptions about environmental caring.

5. Employees with different genders have different support and participation in green activities from green airline program.

5.1 Employees with different genders have different support and participation in energy saving.

5.2 Employees with different genders have different support and participation in water saving.

5.3 Employees with different genders have different support and participation in waste disposal.

5.4: Employees with different genders have different support and participation in environmental caring.

6. Employees with different ages have different support and participation in green activities of green airline program.

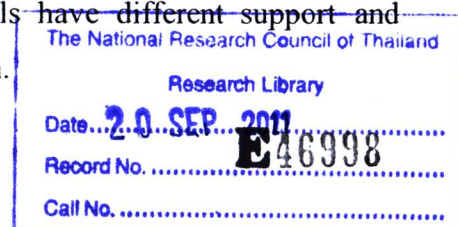
6.1 Employees with different ages have different support and participation in energy saving.

6.2 Employees with different ages have different support and participation in water saving.

6.3 Employees with different ages have different support and participation in waste disposal.

6.4 Employees with different ages have different support and participation in environmental caring.

7. Employees with different education levels have different support and participation in green activities of green airline program.



7.1 Employees with different education levels have different support and participation in energy saving.

7.2 Employees with different education levels have different support and participation in water saving.

7.3 Employees with different education levels have different support and participation in waste disposal.

7.4 Employees with different education levels have different support and participation in environmental caring.

8. Employees with different income have different support and participation in green activities of green airline program.

8.1 Employees with different income have different support and participation in energy saving.

8.2 Employees with different income have different support and participation in water saving.

8.3 Employees with different income have different support and participation in waste disposal.

8.4 Employees with different income have different support and participation in environmental caring.

9. There is a positive relationship between employees' perception of environmental protection and their support/participation in green program of green airlines.