

## Waste reduction from the in-flight services of Airlines in Thailand

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### Abstract

The objective of this research is to study the situation of waste, type of waste, guidelines in reducing the amount of waste and to study the results of waste reduction generated from the in-flight services of airlines in Thailand. This is a qualitative research. The model group consisted of airline administrators and flight attendants of various airlines in Thailand. The data collected is done by document analysis and in-depth interviews. Analyzed the results using content analysis techniques. It is found that 1) The waste from the in-flight services has the tendency of increasing according to the distance traveled and from the servicing competition among the airlines 2) The type of waste from the in-flight services, could be categorized in 3 groups: Waste from food and beverages, waste from facilitation services and waste caused by the working process of the airlines 3) The guidelines to reduce the amount of waste from the above mentioned 3 groups of waste, could be reduced in 3 ways: Modifying the behavior, modifying the use of the materials, and modifying working processes or services 4) The results of reducing the waste from the in-flight services of the airlines in 2018, overall, it has been found to have a 10% reduction of the waste in general. It is expected and estimated that the reduction of waste from the in-flight services of airlines

would reach 50% by the year 2022. However, there is no clear guideline of having zero-waste airline just as yet.

**Key words:** Waste from the inflight services, waste reduction of the airline, Zero Waste Airline

## 1. Introduction

The growth of the aviation industry is increasing in popularity (Watchara Khumkiew, 2015), due to the fast and convenient way of travelling and of the in-flight services during the trips (Vichian Puncreobutr, Worapote Siriwunsakul, Prayush Mohan, 2017). Together with the desire of being competitive in leading the aviation business, there are various interesting promotions, resulting in increasing the decision of the customers in using the services of any specific airline of choice (Patchanee Channoi, 2016; Vichian Hongnon, 2013). In general, the important strategy in building up the quality of airline services is the Pre-Flight service quality, such as, reliability, responsiveness. The In-flight services quality such as, tangibles, courtesy, language skills and Post-Flight services quality such as, timeliness, Frequent Flyer programs (Namukasa, 2013). However, the good quality service, which is necessary to create the satisfaction of the passengers, some of the satisfaction of the services, generates the increasing of waste, especially in the condition of increasing the quality of in-flight services.

In the present day of the world's situation of having a huge amount of waste and continues to increase more each day, leading to an overflowing of waste in the near future. Must therefore, consider the matter of waste from the services (Pollution Control Department, 2017). Principally, to achieve successful waste management is to manage the waste from the beginning which would be a sustainable management (Dittaphol Jaisue et. al, 2017). Therefore, good management of waste from the in-flight services, could reduce much of the

waste from in-flight services. This is the reason for many airlines to be aware of the importance of waste reduction from the in-flight services by determining the amount of waste in each flight or set up a requirement for airlines to have commercial flights that are environmentally friendly, etc. (Siam Rat, 2019).

In order to study the awareness of the problems of waste from various airlines in the aviation business in Thailand, the researcher is of the opinion to study the situation of the waste, type of the waste, guidelines in reducing the waste and to find the results of waste reduction from in-flight services of the airlines in Thailand, where it will be beneficial and useful for the aviation administrators, in-flight service providers. To use in planning, waste management development, together with being beneficial for the other concerned departments related to management, to develop guidelines of waste management to be effective further.

### **1.1 Objectives**

1. To study the situation of waste from the in-flight services of airlines in Thailand
2. To study the type of waste from in-flight services of airlines in Thailand
3. To study the guidelines in waste reduction from the in-flight services of airlines in Thailand
4. To study the results of the operation in waste reduction from in-flight service of airlines in Thailand.

### **2. Methodology**

This is a qualitative research. A study from 2 model groups: 1) A group of 23 administrators of the airlines of both domestic and international aviation business in Thailand 2) A group of 34 flight attendants, giving in-flight services on board various airlines. Totaling 57 main informants. The data was collected between July 2019-November 2019 by document analysis

and in-depth interviews. The interview results that passed the triangular examination will be analyzed with content analysis techniques and further concluded.

## **2.1 The findings**

The findings from the study are as follows:

### **2.1.1 The study of the situation of waste from the in-flight services**

From the situation of waste from the in-flight services of every airlines, it is found that the amount of waste, tends to increase every year. Both in the type that is hard to be compostable or disintegrated such as plastic and waste that is easily compostable such as waste from food. The amount of waste depends on each trip, the waste increases according to the distance of the flight. Apart from this, it is found that competitiveness of in-flight services of each airline, is also the cause of unavoidable increasing amount of waste.

### **2.1.2 The study of the type of waste from the in-flight services**

It is found from the study with the flight attendants of various airlines and with the administrators of the airlines, concerning the type of waste from the in-flight services are: The waste from services given, could be categorized into 3 groups:

#### **2.1.2.1 Food and beverage waste from services given.**

This type of waste is of the highest amount of waste at 75%, consisted of food and beverages left over from eating, excess food that is not eaten, such as butter, sugar, coffee-mate, reserved food which is not used and has to be discard as waste. Most of them are compostable waste while containers of food, food wrap, water glasses, bottles, beverage cans, coffee or tea cups, knives, forks, spoons and other food containers, are mostly made of plastic.

**2.1.2.1.2** Waste from facilitation services which is 20% of the highest amount of waste and mostly are plastic wastes such as seat cover, headrest, pillow cover, socks, cloth-shoes, eye-patch for sleeping, tooth brush, tooth paste, cotton buds, children's toys, plastic bags for ear phones, blankets, pillows, etc.

**2.1.2.1.3** Waste from the working process of airlines is not a big amount, only 5%, consisted of both plastic waste and non-plastic material such as, packaging, baggage tags or tags for any checked luggage for loading. Tools and equipment for the crew to work on board, together with the material used to prepare the servicing of food, and sanitary appliance in the toilets on board.

### **3. The study of the guidelines in waste reduction of in-flight services on board the airlines**

The results of the study done with the administrators of the airlines; it is found that many airlines have similar guidelines in waste reduction of the in-flight services. The food and beverage waste, waste from facilitation services, and waste from the working process of the airlines. The waste reduction operation as stated above could be categorized into 3 guidelines:

3.1 Measures of behavior modification in reducing waste, is to be in the parts of both the recipients of the services and the behavior of the flight attendants. Aiming at reducing waste from excess food and beverages by setting up a requirement for customer, passenger to choose the food in advance, at the same time of reserving the flight ticket, to reduce the amount of food waste and avoiding the loading of excess food on board. The flight attendants are to serve only the requested flavorings, reducing the unnecessary, unwanted items such as, butter, jam, crème, sugar, together

with fruit juice in boxes, unnecessary decorated food wrappings, food container boxes, etc.

3.2 Measures of modifying the materials used in the working process of servicing. With the aim of waste reduction of food and beverage services and from facilitation services such as, modifying the plastic food containers, knives, forks, spoons, water glasses, bottles, coffee cups, etc. to use the bio-plastic materials instead. Some airlines have modified the materials to using materials from natural resources or edible material. The modification of facilitation services such as, from using plastic bags, to paper bags or degradable, compostable material instead, etc.

3.3 The measures of modifying the process of work in waste reduction, is aimed at reducing the waste from the airline services such as, using new technology of packaging, reducing the use of plastic. Modifying the tools, equipment used by the airline crew to be reusable. Instead of plastic luggage tags, use the small barcode for scanning, etc.

#### **4. The study of the results of reducing the amount of waste from the in-flight services in 2018**

The results of the study with the airline administrators and the flight attendants of various airlines, using the 3 measures as guidelines in reducing the amount of waste from in-flight services, during the 3 months in 2018, comparing to the same 3 months period of time in 2017, it is found that:

4.1 The results of waste reduction of the food and beverage waste of each airline, is reduced to be between 9-15%, depending on the distance and the number of passengers in the Business Class

- 4.2 The results of waste reduction of the facilitation services of each airline, is reduced to be between 5-8%, depending on the amount of stock of the material which is to be used up first.
- 4.3 The results of waste reduction of the working process of the airline, is reduced to be at 5%, depending on the amount of stock of the material to be used up first and the readiness to use the new technology on the modification of the materials.
- 4.4 Overall, of every airline, it is found that comparing the amount of waste from the in-flight services before and after the modification, the amount of waste from the in-flight services of airlines in Thailand, could be reduced by 10%.
- 4.5 The airlines in Thailand expect that the waste reduction according to the guidelines of reducing the amount of waste from the in-flight services, could be reduced by 50% by the year 2022.
- 4.6 Any airlines in Thailand do not as yet, has any clearly defined policy of becoming a zero-waste airline.

### **3. Conclusion**

1. It is found that the situation of waste from the in-flight services, tends to be continuously higher. The amount of waste depends on the distance of the trip and the servicing competition among the airlines.
2. The type of waste from the in-flight services could be categorized into 3 groups: 1) Waste from servicing of food and beverages which is of the highest amount of waste at 75%, consisted of organic waste which is easily compostable and plastic waste 2) The 20% of waste from facilitation services are mostly of plastic waste and 3) Waste from working process at 5% consisted of both plastic waste and non-plastic waste.

3. The guidelines in waste reduction of the in-flight services, the airlines have 3 similar guidelines as follows: 1) Modifying the behavior of the service recipients and the in-flight attendants on the waste from the in-flight services of food and beverages 2) Modification on the use of tools and materials in the facilitation services which creates waste and 3) Modification of the working process or services which creates waste.
4. The results from waste reduction of waste from the in-flight services of the airlines, during the 3 months of 2018, comparing to the same period of time in 2017, it is found that overall, the waste from the in-flight services of the airlines in Thailand, has a 10% reduction of all the amounts of waste, the most amount of waste reduced is the food and beverage waste. It is expected to be able to reduce 50% of waste by 2022. Concerning the guidelines in achieving to be a zero-waste airline, there has been no policy nor clear guidelines as yet.

#### **4. Discussion**

From the study it is found that the guidelines in waste reduction from the in-flight services in, modifying the behavior, modifying the tools and equipment used in the services and modifying the working process, it is shown that it is necessary to modify both the people's attitude together with using the advancement of the technology in managing the waste.

It is found from the study that the waste reduction from the in-flight services of the airlines in Thailand, overall, the waste has been reduced by 10%, it is shown that the airlines are aware of the problem and give the importance of finding a solution to the waste problem which tends to increase. But the reduction of only 10% of the amount of waste could be due to the insufficient public relation or campaigning of the reduction of waste, that the customers do not know nor being aware of the guidelines on waste reduction each airline.



## **5. Recommendation**

From the study, it is found that 75% of the waste from the in-flight services is from the food and beverage services, followed by the waste from facilitation services and waste from working process of the airline accordingly. Therefore, the airline administrators and those concerned, should develop guidelines in modifying the behavior, the tools and materials used in the services, and modify the working process, in compliant with creating an improvement in the services. Where, apart from reducing the amount of waste, it will be a cost saving which will increase the profit for the airlines in the long run and becoming a leader in the aviation business in the future.

Recommendation for further research: From the study, it is found that the guidelines in waste reduction of waste from the in-flight services by modifying the behavior, the tools and materials used in the services and the modification of working process could only reduce the amount of waste by 10%. Therefore, there should be an additional study regarding factors related to waste reduction of the in-flight services. To be used as information to improve the effectiveness in waste reduction of the in-flight services and to develop the services and quality of the airlines to become zero-waste airlines in the future.

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