CHAPTER 1: INTRODUCTION

1.1. Background

Soybean (*Glycine max*) is a high nutritional, Asian-originated plant food ingredient that belongs to the *Fabaceae* family (Rizzo & Baroni, 2018). Soybeans are known to contain a great amount of protein, unsaturated fats, fibers, B vitamins, calcium, iron, and other bioactive compounds, making soybeans a great functional food (Rizzo & Baroni, 2018). Over the last few years, increasing interest has been paid to soy legumes in which the substitution of protein-abundant foods rich in saturated fats with soy foods has been found to alter the fatty acid profiles of the diet, leading to the reduction of serum LDL-cholesterol level and coronary heart disease (CHD) risks (Messina, 2016; Rizzo & Baroni, 2018). The unsaturated fatty acids of soy are known to contribute to the protective effect of soy towards the development of cardiovascular diseases and other metabolic problems through the inflammatory parameters regulation (Messina, 2016; Rizzo & Baroni, 2018). Other than that, soy phytosterol and isoflavone contents have also been shown to exert a cholesterol-lowering effect, contributing to the protective effect of soy towards the development of metabolic problems, particularly cardiovascular diseases (Messina, 2016; Rizzo & Baroni, 2018). According to Messina (2016), every 1% reduction in LDL-cholesterol level will correspond to the reduction of cardiovascular diseases by 1% - 2%. Furthermore, the health claim of soy consumption towards the reduction of CHD incidences has also been authorized by the Food and Drug Administration (FDA) through a minimum intake of 25 g of soy protein per day (FDA, 1999).

In our country, Indonesia, soybeans have also become one of the most popular plant protein sources for consumption. Soybeans are usually consumed as bean curd (tofu) and tempeh, some of Indonesians' most popular side dishes (Krisnawati, 2017). Besides tofu and tempeh, in Indonesia, soybeans are also processed into other soy-based foods such as *gembus, kembang tahu* (tofu skin)*, oncom, tauco,* and *susu kedelai* (soymilk) (Koswara, 1997; Rukmana & Yuniarsih, 1996; Surono, 2016).

However, despite the potential heart-health benefits as well as the availability of various soy-based foods, the average soy protein intake in Indonesia is estimated to be only 7.18 kg/capita/year or around 20 g/capita/day (Pusat Data dan Sistem Informasi Pertanian, 2021), which was lower than the minimum recommended soy intake authorized by the FDA that is required to obtain the heart-health benefits from its consumption. Such a low soy protein intake of less than 25 g per day might become one of the contributing factors to the increasing CHD incidences in Indonesia, which was evidenced by the high mortality rate from CHD that reaches 1.25 million people out of 250 million people in Indonesia, making CHD as the highest cause of death at all ages after stroke, which is 12.9% (Kementerian Kesehatan RI, 2017). Based on the result from *Survei Kesehatan Rumah Tangga Nasional* (SKRTN), the mortality rate from CHD has significantly increased from 16% to 26.4% over the last ten years (Septianggi *et al.*, 2013). Furthermore, based on the data from *Riset Kesehatan Dasar* (*Riskesdas*), among other provinces in Indonesia, the highest prevalence of CHD was observed in North Kalimantan, Gorontalo, North and Central Sulawesi, East Kalimantan, as well as the capital city of Indonesia, Jakarta (Kementerian Kesehatan RI, 2021). In Jakarta, a case study conducted by Indrawati (2014) reported that as many as 63 patients suffering from CHD were administered to *Gatot Soebroto* Hospital each month. In addition, Pradono & Werdhasari (2018) also reported that CHD is one of the leading causes of death in both men and women, starting from the age of 25-29 years, steadily increasing with age, and causing the highest death incidences at the age group of 60-64 years old.

Considering the aforementioned heart-health benefits from soy consumption as well as the availability of various soy-based foods (e.g., tofu, tempeh, *gembus, kembang tahu, oncom, tauco,* and *susu kedelai*) in Indonesia, awareness and/or intervention programs involving soy foods could be developed as a potential strategy to overcome the increasing prevalence of CHD incidences in Indonesia. However, such an attempt would not be successful if the society has low levels of knowledge, attitude, and practice (KAP) towards soy foods and the potential heart-health benefits from its consumption. Furthermore, to the best of the author's knowledge, there have not been studies that assess the KAP levels regarding soy foods and its potential heart-health benefits,

particularly among adult population residing in Jakarta. The assessment of knowledge and behavioral levels through KAP study is essential since it will produce a representative survey that could elicit what is known (knowledge), believed (attitude), and done (practices) by the target population in regard to the topic of interest (Andrade *et al.*, 2020), which in this case, is a representative survey that could elicit what is known, believed, and done by the Indonesian adult population in Jakarta in regard to soy foods and the potential heart-health benefits from its consumption. Moreover, based on the baseline information obtained from the KAP study, the appropriate intervention programs could then be developed in the future to correct and/or improve the health-related knowledge, attitudes, and practices in the population of interest (Andrade *et al.*, 2020).

1.2. Objectives

The objectives of this study are:

1. To assess the levels of knowledge, attitude, and practice of adults aged 25-65 years living in Jakarta in relation to soy foods and potential heart-health benefits from its consumption.
2. To determine the correlation among knowledge, attitude, and practice levels in relation to soy foods and the potential heart-health benefits from its consumption among adults aged 25-65 years in Jakarta.
3. To determine the association between knowledge, attitude, and practice levels with the socio-demographic data of the target population.

1.3. Hypothesis

Based on the objectives of the study, it is hypothesized that:

1. The adult population (i.e., aged 25-65 years) in Jakarta will have fair to good levels of knowledge, attitude, and practice in relation to soy foods intake and the potential heart-health benefits from its consumption.

2. The knowledge, attitude, and practice levels of the target population will have a correlation among each other.
3. The socio-demographic data of gender, age, latest educational degree, occupation status, and monthly income will influence the levels of knowledge, attitude, and practice of the target population.

1.4. Research Significance

This research could provide baseline information and data in regard to the knowledge, attitude, and practice levels of adults aged 25-65 years living in Jakarta towards soy foods and the potential heart-health benefits from its consumption, which could be used by the governmental bodies as well as community organizations to plan and develop the appropriate intervention strategies in the future that could correct and improve the knowledge, attitudes, and practices of the target population towards soy foods intake.