CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Tropical AgriSciences

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Impact of COVID-19 on Food Consumption and Consumer Behaviour in Thailand

MASTER'S THESIS

Prague 2023

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Tropical AgriSciences

DIPLOMA THESIS ASSIGNMENT

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International Development and Agricultural Economics

Thesis title

Impact of COVID-19 on Food Consumption in Southeast Asia: Case study in Thailand

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Objectives of thesis

The thesis aims to research how the COVID-19 pandemic has affected food consumption and consumer behaviour in Southeast Asia, specifically Thailand which was chosen as a representative country of the region. It is thought that in general people became more aware of their health but what needs to be further looked into is what people actually did as a reaction to this. One of the main aims is to analyse whether these impacts from the pandemic would be long-term for consumers or if habits would return to what they were pre-pandemic.

The sort of habits investigated include finding out if individuals became more conscious of their health because of the pandemic and if they did more to look after it. This includes activities such as cooking at home more often, eating more healthily, or exercising more often. Furthermore, the issue of food safety and security awareness as a result of the COVID-19 pandemic will be explored. This is to find out what kind of knowledge individuals have on these topics before the pandemic and if this knowledge changed as a direct result of the pandemic.

Methodology

The main area of study will be the country of Thailand, specifically in four various regions in the country. To assist with data collection in these regions, the collection process will be done in cooperation with 4 higher education institutes in Thailand. The survey will be focused on four main aspects which include food consumption, food safety, purchase methods, and the socio-economic background of the respondents. The differences between students (representing the future generations of active consumers), and university staff (representing the traditional generation) will be explored.

The proposed extent of the thesis

50 pages

Keywords

pandemic, e-commerce, food safety, physical activity, health, payment methods

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Recommended information sources

Bracale R, Vaccaro CM. 2020. Changes in food choice following restrictive measures due to Covid-19. Nutrition, Metabolism & Cardiovascular Diseases 30: 1426-1426.

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Expected date of thesis defence

SS 2022/23 – FTA

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Electronic approval: 8. 4. 2023	Electronic approval: 12. 4. 2023
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Prague on 20. 04. 2023

Declaration

I hereby declare that I have done this thesis entitled Impact of COVID-19 on Food Consumption and Consumer Behaviour in Thailand independently, all texts in this thesis are original, and all the sources have been quoted and acknowledged by means of complete references and according to Citation rules of the FTA.

In Prague date

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Tendeukai Manase

Acknowledgements

First and foremost, I would like to thank my supervisor Mrs. Petra Chaloupková for her assistance during the writing on this thesis. Her empathy, commitment and willingness to help throughout the process will never be forgotten and cannot be understated. I would also like to thank my classmates who took this journey with me and were there to offer support when required. Finally, I would like to thank my family for making all of this possible. I would not be who I am without them.

Abstract

The COVID 19 pandemic which ripped through the world in 2020 had both immediate and long lasting effects. Many of these effects were negative but also some positive which maybe were not immediately realized when the pandemic first began. This was no different in Thailand who like most nations struggled to contain the virus. The paper aims to investigate what the effects the pandemic had on how consumers behaviour changed in Thailand during this period from the food they ate to their purchasing habits. Particular focus was placed on comparing the total sample with that of the groups of students and employees. This was done with the view of investigating potential differences between the groups as they may have reacted differently to the effects of the pandemic. Consumer behaviour was one of the areas or aspects that were greatly affected from the onset of the spreading of the disease. Food consumption patterns consumptions were greatly affected as people started to care more about their health and how food that their eating was affect their body and immune system.

Healthy lifestyles including eating healthier foods such as fruits and vegetables saw a significant rise in popularity as Thai people did all they could in attempt to fight the virus and its effects. Data for the study was collected online using the questionnaire method and in total 498 responses were recorded. Research showed however that as much as people tried to be healthier and look after themselves, the mental toll of having to stay at home for extended periods of time also had an effect. In some groups such as Students also saw increases in the consumption of unhealthy foods such as sweets or sugary drinks. Gender and level of education proved to have a strong influence on how individuals perceived food safety, quality, food products and purchasing habits. Emphasis thus has to be put in ensuring that the level of education of individuals is increased so that everyone is given an opportunity to lead a healthier lifestyle.

Keywords: Pandemic, COVID-19, Consumers, Purchase methods, Food safety

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1. Introduction

The agricultural sector has gone through a great transformation over the last several decades on a global scale. Increases in productivity, greater diversity of foods and less seasonal dependence together with increased food availability. This along with generally rising incomes and falling food prices have resulted in considerable changes in food consumption in Thailand (Kearney 2010). According to Poapongsakorn (2017) these improvements can also be linked to Government policies that also had to ensure that their exports matched the food quality standards set by two of the nation's biggest and most important importers. Namely, the United States of America and the EU. Poapongsakorn (2017) further stated that these increases in standards also had an impact on the nation, especially in regard to the rising middle class which also went through some dietary changes and an increase in demand for safer foods.

In late 2019, a virus appeared in Wuhan, China, spread globally resulting in the COVID-19 pandemic, which came as a new unseen factor that affected many aspects of people's lives the world over. Hooper (2022) highlight one important aspect that has experienced a notable change which is behaviour towards food consumption and its related features. Due to the pandemic, protective measures were applied in almost all countries worldwide. These measures, which often included border closures and quarantines, affected almost all micro and macroeconomic functions, including food and agriculture systems and consequently, food consumption patterns (Eftimov et al. 2020).

According to the FAO (2020), due to the various effects of the global pandemic, the overall consumption became limited resulting in changes to dietary patterns. Food availability and convenience were likewise negatively affected by restrictions and limitations of food in markets. Other places where readymade food could be purchased such as restaurants were also closed, which had a negative effect on peoples' incomes and livelihoods. The FAO (2020) improves upon this by stating that shortages were not caused by only local problems, but also the restrictions on imports and exports due to border closers to try reduce the spread of the virus. Restrictions on shipments have led to potential shortages of some food products further reducing their availability. This has especially made it hard to attain enough fresh foods such fruits and vegetables. During this period, earnings have become limited for many people while other forms of financial and economic distress negatively affect their purchasing power (Eftimov et al. 2020; Jámbor et al. 2020).

All these factors have affected food consumption in various ways. Some of the trends that have been observed are reduced purchases of fresh goods, increased purchases of canned, frozen, and durable goods. Home consumption and cooking increased as there has been more interest in home-cooking products. Further trends have been increased concern about healthy diet, increased food safety awareness, changes in frequency of shopping, changes of shopping locations, increase of online shopping and others (Bracale & Vaccaro 2020; Fei et al; 2020, Laguna et al. 2020). Majority of these changes are closely connected to the protective measures applied by local governments and the enforced changes to the lifestyle of individuals. Many people initially felt as though things may return back to the way they were pre-pandemic after a relatively short period of time. However, based on how long the pandemic has lasted to date, it is reasonable to assume, such a major disruption like the COVID-19 pandemic will bring some long-term changes in food consumption patterns and trends (Russo et al. 2021).

Numerous studies researched these short-term food consumption trends and changes, but due to the novelty of the situation, the possible long-term outcomes have not been fully analysed yet. This thesis aims to research the short-term changes caused by the pandemic and their possible long-term effects on food consumption in Southeast Asia, specifically Thailand which was chosen as a representative of the region. These changes will also be analysed in relation to students and employed individuals in the nation. This is in order to investigate potential or noticeable differences between the two in regard to their consumption patterns that stem from the impact of the pandemic.

2. Literature review

2.1. Overall Impact of COVID-19

In late 2019 and in early 2020, concepts such as lockdowns, mask mandates and social distancing were unknown to most individuals, not only in Thailand, but the world as a whole. However, once the virus started to spread at a rapid pace globally without any known way to prevent or even at least slow it down, these features all became part of our everyday lives. IMF (2021) suggest that its relative novelty has meant that governments world over have not always known how to handle the situation the further it developed. The COVID-19 pandemic is a threat that humanity has not had to face since the Spanish flu pandemic more than 100 years ago (FAO 2020). As such, the pandemic has caused many changes and disruptions in almost every field and industry all around the world. Not only has it influenced the health and the economy, but it has also had an impact on our lifestyles, eating habits and mental health.

It is evident, that although the initial COVID-19 restrictions certainly helped to stop the spread of the virus, they also had a very negative impact on the world economy. In fact, COVID-19 has triggered the deepest global recession since the Second World War, with essentially every corner of the globe being affected (IMF 2021). Even the Global Financial crisis of 2007–2008 did not cause such a major and rapid drop of the world economy (World Bank 2020).

Even though some economies have been recovering rather quickly since the recession began, the effects of it is still very much evident. Fei et al. 2020 highlights the fact that the effects of the pandemic can be considered to be disproportional when comparing low and high income countries. This can be related to the fact that low income countries often rely heavily on global trade, tourism, and remittances, all of which were affected drastically by the COVID-19 pandemic (World Bank 2020). Counter COVID-19 responses resulted in many people losing their jobs, increased debt of countries, companies and individuals. The IMF (2021) further state that micro, small, and medium enterprises especially suffered with many of them having to file for bankruptcy which damaged the backbone of many nations. Consequently, global poverty which after decades of a downward trend is expected to increase by up to 115 million people as a direct result of the virus, particularly in South Asia and Sub-Saharan Africa (World Bank 2020).

Even though the long-term policy implications of the pandemic for global food trade remain uncertain, it is of increasing concerns that the pandemic will ultimately lead to a long-standing food crisis. One of the inevitable impacts of the COVID-19 pandemic is on local and global food supply systems (Fei et al. 2020). There is a concern, that the global food trade might be restricted due to the experience with COVID-19. Export of foods may be blocked, and imports may be restricted to force local production as strategies to protect the food supply in future pandemics (Henry 2020).

In addition to this, the COVID-19 induced contraction in economic activity is projected to weaken global demand for agricultural commodities (Gay et al. 2020). However, the management of the current pandemic to date suggests little impact on global food demand due to human population loss (Henry 2020). Nonetheless, one positive that has been observed, similarly to businesses in other fields, the sector and its participants were also able to become more innovative and technologically savvy. The crisis catalyzed the digitalization of food supply chains and agricultural services, which contributes to diversification of food distribution channels and transformation of food systems (Fei et al. 2020).

One example of this is that, many consumers formed habits of ordering fresh food online to be delivered to their homes instead of going to the physical store in order the reduce the chances of coming into contact with the virus. Statista (2022) emphasizes upon this by alluding to the fact that online food delivery penetration will be at 20.4% in 2022. An almost 10% increase in the two years since the pandemic began. E-commerce platforms have further developed their supply chains in the agriculture sector, which encouraged more long-term strategies to closely collaborate with agricultural production and support farmers (Fei et al. 2020). This may allow for the quality and standard of food produced within the country for consumption to increase. It still however is not clear whether the long-term positive outcomes overweigh the negatives.

Nonetheless, Delta Group (2022) point out that the pandemic also forced businesses to be more innovative, apply more technologies and improve or find alternatives to their supply chain. All of which can be economically beneficial in the future as businesses learn how to adapt and improve during times of uncertainty. Delta Group (2022) further advises that although many of the repercussions were faced by a majority of countries in the world, some situations were more specific to certain countries or regions.

2.2. Food Consumption in Thailand

Thailand specifically, had been transforming rapidly over the last several decades due to fast economic growth, fast rate of urbanization and increasing globalization Yet the kingdom has struggled politically and economically in the recent years (World Bank 2020). Generally, Thailand saw increases in consumption of meat and fish products, prepared food, and food consumed away from home before the COVID-19 pandemic. These common trends often follow increasing wages and economic development in a country. Therefore, its influence is expected to grow exponentially (Gould & Villarreal 2006). Foods such as rice and noodles still represents a major part of Thai diet and its consumption was proven to be less responsive to price and income changes than other food groups (Wongmonta 2020). As people panicked due to future uncertainties linked to the pandemic, there was an increase in demand for rice especially as people anticipated potential issues that could arise in the supply chain (Guthrie et al. 2020).

According to the World Bank (2020), in Thailand, 8.3 million workers are estimated to have lost their employment or income as a direct consequence of the COVID-19 crisis. World Bank (2020) adds on to this by pointing out that general household consumption is projected to decline by 3.2% and the number of economically insecure, or those living below USD 5.5 per day, was projected to increase from 4.7 million people in the first quarter to 7.8 million people in the third quarter of 2020. In particular, the share of economically insecure middle-class households with workers in the manufacturing and services sector will rise from 6% to 20% (World Bank, 2020). This kind of economic unrest, together with other related attributes caused by the COVID-19 pandemic (quarantines, market restrictions, etc.) could further affect local consumer attitudes and behaviour.

In addition, several specific consumption trends appeared in Thailand in the recent years. Demand for small indulgences like crispy snacks, ice-cream, chocolate, bottled water and other have been increasing. It increased by 10 to 15% between 2013 and 2016 and, during the same period, demand for frozen meals in some cases even doubled (Bharadwaj et al. 2017). Experiences like dining out also gained on popularity, especially among middle and higher class of Thai society. These consumer trends correspond with other quickly developing countries; once consumers can meet their basic needs, demand for small indulgences tends to increase and later, demand for luxury goods and increased popularity of dining out usually follows (Bharadwaj et al. 2017).

Regarding Thai shopping locations, there are many variations of retailers and wholesalers, from traditional markets to modern supermarkets. In the recent years, the fastest growing channel of purchase has been convenience stores. Bharadwaj et al. (2017) suggest that this can be attributed to changing lifestyles. Many Thai consumers seem to be willing to settle for limited assortment of goods for the convenience that they receive from them. Additionally mentioned is that this is relation to the short distance that they have to travel and the 24-hour availability with which supermarkets nor traditional markets cannot compete. Going to these convenience stores however became greatly limited once the pandemic hit as shops had to go through forced closure. This meant that consumers had to find alternative means especially in the form of online shopping in order to attain even basic household goods (Hooper 2022).

Still, traditional markets are widely popular in Thailand as well as in the rest of the region and dominate especially in the selling of perishable goods (Gorton et al. 2009). Supermarkets have been gaining on popularity especially in urban areas, however not with such a rapid paste as it was predicted (Gorton et al. 2009). A 'supermarket revolution' in developing countries started in the early 1990s and has continued throughout the following decades (Reardon 2011). Nonetheless, even though supermarkets are present in most of the cities and towns in SEA, local populations still often prefer traditional markets and small retailers over these chain stores (Ortega & Tschirley 2017). Nonetheless, the appeal of supermarkets rests on a good atmosphere, convenience of having a large variety of goods and, on food safety, which can beneficial in the current times.

Food consumption changes in Thailand during this period generally correspond with the findings from various countries especially that neighbour them. Since most shops and restaurants were closed during this time period, Thais had to adjust their shopping patterns and consumption behaviour accordingly (Bracale & Vaccaro 2020). By and large, Thais were more interested in healthy lifestyle and home cooking due to restrictions (Chan 2021). Laguna et al. (2020) suggests that consequently, this projected itself into to the market demand as Thai consumers were buying mostly necessary foodstuffs, such as eggs, instant noodles, canned foods, frozen foods, and drinking water.

Nonetheless, the increased demand did not cause any major food supply shortages and articles were mostly available as always (Sirikeratikul 2020). Fronde (2021) although contrasts this by suggesting that it largely depended on where you lived. While people in the major cities continued to procure the same goods that they could before the pandemic, other areas or regions did not have the same experience. Fronde (2021) states that there was a 20% to 30% reduction in production observed by Thai processing plants. This negatively compliments the increase in demand from consumers.

2.3. Trends Seen in Students and Employees

Although all people in Thailand were going through the same experience, depending on your status the way that it affected you may have been different. Whether you were a student or employed Thai resident played a role in how consumption habits were altered. For students, the traditional way of learning was affected as students could not physically go to class anymore. Teaching turned to online form in order to still continue the education process of students during the pandemic (Santander 2021). The Asian Development Bank (2021) further states that students faced challenges in gaining access to educational resources, faced complications in adapting to online classes as well as potential loss in learning as a result of decreased classroom interactions. Rajkumar (2021) elaborates on this by highlighting that these elements had an effect on the consumption habits of students as they tried to cope. Despite the increased interest in healthy lifestyles, comfort foods such as sweets, chocolates or fast food became more popular as they tried to manage the study workload that they faced along through uncertain futures.

Rajkumar (2021) also states that students began to rely on technology even more than they did before. More time was spent staring at screen as it was not possible to go outside and spend time with friends. Huang (2021) however maintains that there were some positives associated with this as they were able to leverage technology for remote learning while developing self-regulation skills. This was not fair for everyone though as not everyone had the same access to technology depending on where you lived and your background. Wang (2021) clarifies this further with the notion that students from lower income families or that lived in rural areas faced challenges in gaining access to technology or did not always have access to internet. This made it more difficult for them to keep up with studies and as a result meant that they may not have been affected in terms of their motivation and performance (Rajkumar 2021).

This increased time spent on line did not mean only more time spent studying however. Huang (2021) speaks of how online shopping increased substantially amongst students as well which followed the trend which was seen for the entire population in general. It wasn't only shopping online that increased however. As there were restrictions put into place for social gatherings physically, other means of entertainment were sought after. PWC (2020) alludes to the fact that streaming services, online gaming and virtual events massively gained in popularity as students tried to find other ways to keep occupied and still socialize with their peers. Additionally stressed upon is the fact that students did use time in isolation outside to take part in new hobbies that they could do on their own. These hobbies included sports or other physical activities that could be done alone.

Students did also face increased financial concerns linked to the pandemic. Rajkumar (2021) points out that the economic impact of the pandemic lead to reduced income also for students as well as increased financial responsibilities. This lead to students making alterations to the way that they spend in order to save, cutting back on non-essential purchases and even coming up with financial plans for the future (Rajkumar 2021). Students became more price conscious as they started to seek for more discounts and promotions while they shopped. Huang (2021) also speaks of how the pandemic had an impact on brand preferences of students. Students were more likely to switch brands during this time as they wanted to try something new while also showing a preference to local community based brands that promote social responsibility.

In regard to employed individuals, changes were also seen with them as companies also had to make alterations in order to cope with the effects of the pandemic. Besides the fact that many people actually lost their jobs, even people that still had a job also became more price conscious (PWC 2020). One reason for this was that as remote work became common place, there were additional costs incurred for their home office set up, upgrades in technology and utility costs (PWC 2020). In order to also cope with the stressful situation being faced, employed individuals also sought unconventional means to cope with food being one of them (Huang, 2021). These financial challenges even lead to employees making changes to their retirement plans as well as saving habits due to uncertainties (Hooper 2022). Funds were saved more in case any further emergencies may appear, chances of mitigating these were increased.

Kniffin (2022) does however state that saving was not always top on the priority list once the pandemic hit. Increased levels of stress, anxiety and burnout in employees resulted in them at times resorting to impulse buying online as a coping mechanism. Furthermore, the problems faced also meant that employed individuals started to spend more on self-care products, eating healthier food and wellness related expenses (Kniffin 2022). Dwivedi (2020) emphasizes on this by suggesting that employees were focusing more on essential items as well as health and wellness products because of the pandemic. Spending on matters that were considered to not be essential such as travel, eating out and other forms of entertainment took a back seat as frequency decreased or even put to a halt when the pandemic hit. The Thai population in recent times, even before the pandemic, had been becoming more interested in living a healthy lifestyle. This trend was introduced mostly by the younger generation including students who became an advocate for healthier living. It has become a widely supported lifestyle across all generations since then (Santander 2021).

2.4. Attributes That Influenced Consumers

Thailand is a very diverse country and it is therefore difficult to identify attributes applicable for the whole population. However, some trends and behaviours seem to be more common than others are. Thais tend to be impulse buyers, who prefer spending over saving (Santander 2021). As a matter of fact, Thai consumers are considered as one of the most optimistic in the world, largely because of their increasing standard of living. Even though Thailand has seen political and economic turmoil in the recent years, which negatively influenced the overall economic growth, certain consumer categories and e-commerce have continued increasing swiftly (Bharadwaj et al. 2017). Experiences like eating out and travelling were becoming increasingly popular in Thailand before the pandemic, as well as the purchasing pf luxury goods (Santander 2021).

The key selling factors in Thailand are price, quality, and availability but typical Thai consumer also tends to be very brand oriented. Chavan (2020) states that to Thai consumers, brands matter much more than to any other consumers in Southeast Asia. While consumers in other countries are often motivated by discounts or promotions, Thais are often willing to pay more for their favourite brands. As data from a recent survey confirms; 75% of Thai respondents agreed with the statement "I look for my favourite brand and purchase that", which is a major difference when compared with 39% in the Philippines or 40% in Vietnam (Bharadwaj et al. 2017). This brand-based consumption is expected to further increase since the younger generation of Thais is even more inclined to make these types of purchase (Tangsupwattana & Liu 2017).

Not only food preference saw great changes due to the pandemic, the methods of purchasing goods themselves also had to be altered to be more suitable to the new pandemic reality. As mentioned, technologies like e-commerce, food delivery apps and E-payments became increasingly more popular especially during lockdowns, but many other shopping aspects were affected as well. Arora et al. (2020) even speak of how to reduce contact, it became more common to pick options such as curb side pickup when an item was ordered online or in store pickup without human interaction. Mckinsey (2021) alludes to the fact that the food delivery market grew by more than three times since 2017 with the biggest increases seen during the pandemic. Arora et al. (2020) tell that during this time, consumers were more willing to try new brands and channels as they discovered new options due to the increased variety on internet sites.

Namely, consumers' preference of physical stores often shifted. Data suggests increased popularity of supermarkets during the pandemic (Sirikeratikul 2020). This does not tell the full story as in contrast in was seen that many consumers tried to avoid these big chain stores for fear of meeting too many people. These people instead started to do their shopping in nearby convenience stores instead to decrease the chances of contact (Kessuvan & Thongpech 2020). Although in Thailand these stores usually tend to have slightly higher prices, they also offer relatively higher hygiene and food safety standards in comparison to traditional markets. Another advantageous element of this is that they are more easily accessible in comparison to supermarkets. This made them ideal for quick shopping during the times of lockdowns and restrictions.

More consumers furthermore started to prefer going to shops during the weekdays while simultaneously shopping frequency reduced. This had a negative impact on purchases of the most perishable food products such as fruits and seafood (Laguna et al. 2020; Bracale & Vaccaro 2020). However, Laguna et al. (2020) feel as though there is a low probability that this change will become a long-term pattern given the reasoning behind it is so closely connected with the lockdowns and restrictions. The impact varies among regions, countries, groups and even individuals. Factors such as age, gender, education level and other personal elements can majorly affect their experience and behaviour. Some of these changes were enforced due to government interventions while some were caused as a result of personal interactions.

As COVID-19 spread around the world, almost every country ordered or suggested the non-essential workers to work from their homes. This was no different in Thailand. According to Mckinsey (2021), remote work was a trend that was already occurring before the pandemic began but was then quickly accelerated. Mckinsey (2021) goes further by suggesting that 20% to 25% could work from home three to five times a week and still be productive which is five times more than pre pandemic levels. Many companies actually made it mandatory to work from home. Such numbers propose that many people will probably still continue to work from more from home once the pandemic is over. Even though this will still be to a lesser extent compared to peak pandemic levels. Due to the limited movement, E-commerce use sky-rocketed in popularity. E-marketplaces and food deliveries became common to use on a daily basis in a substantial amount of households. Bharadwaj et al. (2017) states that Consequently, E-payments also became more popular than ever before.

Xiao et al. (2021) states that a significant reason why it is expected that the continued trend of people working from home will persist after the pandemic, is the huge decrease that companies have experienced in operational costs. This is mostly because of the reduction in required office space. Xiao et al. (2021) go further by declaring that the direct benefits associated with employees eventually end up helping the company as well. One example of this is that working from home saves on time used for daily commutes which means that workers are much more flexible and able to balance their time with other activities more easily. Tavares (2017) additionally argues that by working from home, employees do not have to deal with distractions from co-workers and thus are able to focus more on their work.

HRMASIA (2021) at the end of the year reported how this trend of working from home was also followed in Thailand as even at the end of 2021 government officials were directed to work from home. This was done in order to curb the spread of the emerging Omicron variant. HRMASIA (2021) further state that they encouraged the private sector to follow this narrative in relation to people working from home whenever possible. Evanoff et al. (2020) does on the other hand highlight some of the negatives associated with working at home such as the fact that some individuals then find it harder to detach themselves mentally at work. The result of this was an increase in both stress and anxiety.

2.5. Lifestyle Changes

There is no doubt that there were significant changes in food consumption due to COVID-19 in the short-term period of lockdowns. As mentioned, these changes resulted in both positive and negative patterns. Currently, the main pattern changes can be summarized into two categories. What we consume is, alongside the physical activity, a major aspect of our lifestyle, which often determines our overall health. Together with the COVID-19 pandemic, many new foods related patterns began to emerge.

On the positive side, the fear of the virus resulted in some cases in increased focus on healthy diet; increased consumption of fruit and vegetables and increased demand for vitamins and other health supplements were recorded (Bracale & Vaccaro 2020). In addition to this, the pandemic also helped to increase hygiene and food safety awareness among populations not just in Thailand, but worldwide. Chan (2021) goes further by putting into consideration that since hygiene and food safety is one of the main ways to battle the virus, governments and institutions all over the world invested huge amount of time and resources into educating people about these issues. This was done in hope that this knowledge can be beneficial to us in the following years to come.

Another major positive novelty was the increased interest in home cooking, baking and even brewing. This was of course triggered by the restrictions and inability to dine out (Filimonau et al. 2021). Although home-made meals do not always mean healthy food, at very least it increases the awareness of what we consume and individual cooking skills which were declining in some countries before the pandemic (Coulthard et al. 2021). It is much easier to know what is going into your body and how it will affect you if you know exactly how it was made and what the meal consists of.

Unfortunately, during the pandemic many new negative consumption patterns appeared as well. The most common pattern was increased unhealthy diet despite the increased interest in healthy lifestyles. Even though some people began cooking at home, many inclined towards easier and less healthier options. Especially sweets and fried food became increasingly popular (Christofaro et al. 2021). Those who used delivery services, often consumed more fast-food meals and other types of junk food and consumers were commonly buying more snacks, canned, frozen and durable goods (Coulthard et al. 2021). At the same time, changes in the alcohol consumption appeared as well. As expected, many studies registered a consumption increase (Kowalczuk & Gebski 2021). However, in some cases, COVID-19 led to decreased alcohol consumption too (Pabst et al. 2021 & Rodrigues et al. 2021).

Generally, the year 2020 saw a major increase in sales of packaged goods that are overall perceived as more hygienic (Bracale & Vaccaro 2020). This fact by itself is not a negative thing, from the health perspective it can be considered a rather smart decision. However, depending on the type of goods, the packaged goods often tend to be more processed, potentially with added substances, which can mean a less healthy option. The fear of unpackaged goods also meant reduced consumption of fruit and vegetable in some cases since these goods are commonly sold without any packaging (Laguna et al. 2020).

The changes in individual consumption were significantly influenced by the closure of restaurants in order to reduce contact with people unless it was absolutely necessary. Vyas and Nantapong (2020) focus how people were for that reason forced to look for alternatives. Some chose to cook for themselves, some increased their consumption of fast foods, frozen goods and other unhealthy foods while some did both (Coulthard et al. 2021). Depending on the personal choices and influences that they faced, their lifestyle could either improve positively or negatively. Katewongsa et al. (2020) states that physical activity proved to be at its highest at the start of the pandemic but slowly started to decline as time went on with the government also taking more time to come up with new measures to reduce the spread as opposed to promoting the health of individuals.

The closure of many leisure establishments left many with a lot of free time at home. This often meant increased consumption of snack foods as well as increased demand for meal kits from restaurants, which consequently worsened the diet of many (Coulthard et al. 2021; Pertuz-Cruz et al. 2021). This was a problem exasperated by many sporting facilities being closed. Health levels dropped with the combination of unhealthy food and lack of exercise. Puccinelli, Da Costa and Seffrin *et al.* (2021) point out that physical activity dropped to (2.9 ± 1.1) as compared to pre pandemic levels (3.5 ± 0.8, $p < 0.001$). Spending more time with family had both positive and negative effects as well depending on how that time was used.

On the positive side, many started to be concerned about their health because of the pandemic. Therefore, they tried to introduce healthier lifestyle for themselves (Rawat et al. 2021; Coulthard et al. 2021). Due to the lockdowns and restrictions, common everyday activities became limited, and people often found themselves with more free time. Hence, many looked for new ways to exercise, new hobbies or ways how to improve themselves and their skills, which helped to keep their spirits up and even offered possible long-term benefits (Christofaro et al. 2021).

On the negative side, we could see many people changing their lifestyle for the worse. People's eating habits worsened, many exercised less and had less movement in general due to having to stay at home most of the time. This consequently worsened their physical and mental health as time went on. Puccinelli, Da Costa and Seffrin et al. (2021) address the fact that during the pandemic, 30% of people in a conducted study of showed moderate symptoms of severe depression. Some countries recorded increased cases of obesity and other food related health issues (Rawat et al. 2021). This was usually the case of people who were inclined to this kind of unhealthy diet even before the pandemic (individuals with higher BMI etc.) and the new situation further deepened the issue (Coulthard et al. 2021). In addition, the panic buying at the beginning of the pandemic and lower shopping frequency further increased this type of consumption as many people had more food at home and therefore easier access to it (Christofaro et al. 2021).

A study conducted by Katewongsa et al. (2020) found that males tended to exercise more than their female counterparts during the pandemic in Thailand. Moreover, it was advocated that the proportion of middle-aged adults who took part in the daily recommended amount of physical activity was consistently higher than that of young adults.

One topic that came to the fore during the pandemic is the number of harmful products that were consumed by consumers. Mostly in regard to alcohol and tobacco consumption. In order to try curb the increased consumption of alcohol as well as reduce the spread of the virus, the Thai government decided it was best to stop the sale of alcohol in both bars and restaurants (Guardian 2021). The government considered this to be a harsh necessary step in its fight against the virus. Huang (2021) does however point out that most of the establishments involved disagreed with this move as they felt as though it was damaging the economic position of businesses even further. This was especially a worry as the borders were soon to be opened to fully vaccinated tourists in November 2021 after 18 months of restrictions.

The other worry with this is that although this may have meant that less people were drinking alcohol in public places, it did not mean people were not drinking in their homes (IWSR 2021). Because of the decrease in tourism and less people going out the IWSR (2021) point out that it is difficult to tell whether locals were drinking more at home or less. In 2020 there was a decrease in volume of consumption by 8% in the SEA region in general. The prospected view is that the industry will only return to pre pandemic levels in 2025.

It is however thought that in situations such as this, substance abuse with products such as alcohol and tobacco usually increases as people attempt to cope with the stress they are experiencing (Hassanbeigi et al. 2013). There is a greater worry in relation to this when it comes to the use of tobacco and tobacco products to cope with stress. This is because smoking has been found to increase the severity and mortality rate amongst COVID-19 patients (Umnuaypornlert et al. 2021). There is thus grave concern of people smoking more during the pandemic in order to try attempt to reduce the stress caused by pandemic outcomes.

2.6. Food and Hygiene Safety

Understandably, the concerns about health, hygiene and food safety increased majorly. The OECD (2021) identifies that people become more aware of importance of safe food, safe packaging, safe delivery and traceability and the effects of foods on a person's body after ingestion. In some cases, they also preferred foods with natural ingredients and local products or even plant-based foods and beverages (Fei et al. 2020). All these new preferences and concerns lead to many significant lifestyle changes. Clearly, the everyday routine of most people in many nations was thrown off balance. Interestingly, the deviation from our old standards was seen to go on both sides of the spectrum, depending on individuals, groups or even regions and countries.

Filimonau et al. (2021) brings to our attention that the gender of consumers also seemed to play a role, as one study suggests, females were more likely to consume more snack foods and overeat in general during the pandemic. However, others found that females were more physically active (Christofaro et al. 2021), therefore, the conclusion is not clear. Some authors also pointed out connections with stress and overeating (Coulthard et al. 2021; Christofaro et al. 2021). The COVID-19 pandemic and most notably the periods of lockdowns were certainly mentally challenging for many. Snack foods often became a sort of stress reliever as people were trying to cope with the new situation. Chan (2021) also points out that gender played a role in food safety and hygiene as women more traditionally have roles associated with the cooking of food as well as grocery shopping. This may lead to them having greater concern on these topics as compared to male consumers.

Chan (2021) goes even further by stating that gender plays an important role in the outlook on sustainability concerns. Women tend to prioritize sustainability more as a result of the pandemic and this has an impact on their consumption choices. This was also the case with health and wellness products and home related expenses. Women tended to show greater interest and awareness on these topics and thus placed greater emphasis on them (Mckinsey 2021). Differences have also been observed in purchasing habits between the genders. As online shopping generally saw an increase during the pandemic, it was noticeable that women tended to be more likely than men to increase their online shopping. Chan (2021) however suggests that this increase was not usually for personal goods but rather for goods used in the household. The increase in online shopping was mainly for essential items and household goods given that they took on increased responsibilities linked to household management and caregiving. Sleet (2020) likewise relate this to the effect of food pricing. Women started to engage more in price comparison and discount seeking behaviour while online shopping. This may have been a reflection on increased budgeting concerns due to the uncertainties faced and increased job losses experienced during this period.

Many people, especially the elderly became more isolated, which together with possible financial troubles further deepened the mental hardships of the already negative pandemic situation (Kasar & Karaman 2021). This financial hardship made it more difficult for people to eat healthier even if the consumer was more concerned about the quality and standard of the food they consume. This is because they could not always afford the more nutritious and healthy food due to in most cases to loss of income during the pandemic.

This is highlighted by the World Economic Forum (2021) who state that during the pandemic, essentially one in two people lost income. It is undisputable, that the COVID-19 pandemic is a great challenge with many negative short-term and possibly long-term aspects. However, the World Economic Forum (2021) argue that like in the business sphere, if handled well, the crisis can also offer some opportunities, which could improve our lifestyles in the long-term.

According to Kasar & Karaman (2021) these factors also point to the importance of age in relation to some consumption habits and consumer attitudes. Elderly people proved to be more susceptible to suffering the effects of the virus due to weaker immune systems possessed by the older generation. The CDC (2021) stated that older adults, particularly those over 60, were seen to be high risk and may face more severe impacts from the virus. Access to health care and services proved to likewise be a problem during the pandemic as there was an increased strain on the healthcare system. In some cases, there accessing necessary medication, medical care and preventative services was not possible or very limited (Filimonau et al. 2021). This meant that issues such as health and hygiene is more important to them seeing that contracting the virus for them could lead to severe illness, hospitalization and even mortality (Kasar & Karaman 2021). This lead to an impact in consumption behaviour as well as this increased vulnerability that they were facing meant that there was greater priority placed on health related expenses and reduced physical contact even with loved ones (CDC 2021). This was difficult for older people as not seeing their loved ones for extended periods of time had a negative impact mentally on them. They had to however persevere as the risks associated if they did not social distance heavily outweighed the benefits of seeing family in a physical capacity.

There was also an impact or differences seen with respect to the use of technology. The older generation found it difficult to adapt to the increased reliance on online platforms for work, education, communication and access to required goods and services (Hooper 2022). Some of the older generation at times lacked access or were simply less familiar new and existing technologies (Anderson & Perrin 2021). This meant that the way that they shopped was influenced as they had to now adapt to the situation especially with online purchases.

Food safety has been a major issue worldwide, especially in Southeast Asia. The region has the second highest burden of foodborne diseases after the region of Sub Saharan Africa, with more than 150 million cases and 175,000 deaths annually (World Health Organization 2020). There has been a series of contaminated food crises over the past decades all around the world; the Dioxin Affair in Belgium in 1999 (Hoogenboom et al. 2015), the melamine powdered baby milk scandal in China in 2007 (Qiao et al. 2012). In Thailand, one of the most recent events was an outbreak of type B botulism from bamboo canned shoots in 2014, which caused 129,000 Thais to fall ill from food poisoning (Bureau of Epidemiology 2015).

Such events raised concerns among the public health officials and consumers alike. Therefore, governments have become increasingly interested in the issues of food safety and food safety awareness for the people in their countries (Chaoniruthisai et al. 2018). Recent studies state that as compared to previous generations, the modern global consumer is now more aware of food safety issues (Fotopoulos et al. 2009; Trienekens & Zuurbier 2008) and their importance in the food supply chain (Wilcock et al. 2011). However, the recent events of the COVID-19 pandemic pointed out many shortcomings of consumer food safety awareness.

In Thailand, a food-safety policy was declared in 2004, primarily to promote Thailand as the “kitchen of the world,” and a food-security policy was issued in 2008 to secure safe agricultural and food products. To achieve these goals, effective collaborations have been implemented among multiple organizations as networks in Thailand, including government agencies and the primary-production, food-manufacturing, food-supply and consumer sectors (Sribuathong & Trevanich 2010). Nonetheless, studies made in recent years brought mostly unsatisfactory results of consumer food safety knowledge. Malai (2011) who conducted a study of Thai food store and street food vendors, found only 13 percent of them showed food hygiene knowledge. Rodmanee, Srayut, and Wen-Chi (2013) and Jenpanich et al. (2016) stated that food sellers in Thailand often did not wash their hands after contact with money and Tomaszewska, Trafialek, Suebpongsang and Kolanowski (2018) who compared food safety awareness of Polish and Thai consumers also found that while consumers from both countries had incomplete knowledge, Thai respondents generally showed a significantly lower level of food hygiene knowledge.

Many authors have indicated a positive correlation between education level and knowledge of food hygiene and food safety awareness (Akabanda et al. 2017, Carbas, Cardoso, & Coelho, 2013; Martins et al. 2012). The COVID-19 pandemic majorly increased the importance of these topics, it is therefore expectable that the food safety awareness will increase. Food safety, hygiene and other related issues were thoroughly debated throughout 2020 by world leaders and experts to spread awareness among populations that could possibly improve the situation in the future, the most recent findings further support this suggestion. A recent study found that Thais were more concerned about food safety during the COVID-19 pandemic (Kessuvan & Thongpech 2020). Nonetheless, it is not clear whether this trend will continue to have a long-term impact on Thai consumers or not.

3. Aims of Thesis

Given the significant impact of the worldwide COVID-19 pandemic, issues related to food consumption and food safety were more relevant than ever before. The main aim of the thesis was to analyze how the COVID-19 pandemic impacted food consumption patterns and how awareness of food safety and related topics changed in Thailand from a consumer perspective. Furthermore, differences between changes in consumer behaviour between students and employees were analyzed to compare the possible differences in perceptions amongst the two groups.

Previous studies showed many new food consumption and food preference trends appeared worldwide during due to the impact of the pandemic. Changes were observed not only in respect to food consumption but also how this food was acquired. Shifts in attitudes were seen with differences being observed in both students and employees. Furthermore, some socio demographic characteristics played a role in how behaviour may have been altered. The following research questions were formulated based on previous research.

Food consumption habits and food preference of Thai consumers

The food consumption pattern changes that have been witnessed during the COVID-19 pandemic have mainly been attributed to lockdowns and restrictions, which were applied in various forms in most of the countries around the World (Laguna et al. 2020; Bracale et al. 2020). What has not yet been totally clear however, is whether these changes can possibly become habits that have a long-term impact on the market. The manner and the level of importance of these changes on food consumption and the market is yet to be specified. Nevertheless, changes in food preference, diet and food supply chains were all recorded in countries hit by the COVID-19 pandemic (Fei et al. 2020; Henry 2020). All these changes could possibly influence the market in the future.

Key Research Questions:

- ✓ Were there differences in behaviour between students and employees when comparing the same factors that had an effect on both as a result of the pandemic?

- ✓ In comparison to the time before the COVID-19 pandemic, which food products were consumed more and which are less by both students and employee consumers?
- ✓ Was there more emphasis placed on hygiene and sanitation by both employees and students due to the effects of the pandemic?

Food safety awareness in Thailand

Food safety has been a major issue in Southeast Asia. The region has the second highest burden of foodborne diseases after Africa, with more than 150 million cases and 175,000 deaths annually (World Health Organization 2020). COVID-19 further proved the urgency of this problem. Food safety, hygiene and other related issues were thoroughly debated throughout the pandemic by world leaders and experts to spread awareness among populations. Nonetheless, the long-term impact of these actions on consumers and the market remains unclear. That is why it is important to ask, has the importance of food safety increased in Thailand during the COVID-19 pandemic.

Methods of purchase in Thailand

Given the fact that stores and restaurants were closed when the virus started to spread, alternative means had to be sought in order to purchase necessary essentials. Companies had to find ways in which they could not only stay afloat but still expand operations during these uncertain times. Online food shopping has become an influential part of the food industry in the recent years in Southeast Asia. While the customer base in the region is still limited due to the high price and availability, this part of food industry is expected to grow in the upcoming years and related technologies like E-payment are expected to grow with it (Statista, 2020). The COVID-19 pandemic possibly further accelerated its adoption, which could affect the rest of the market.

Therefore, in line with the above-mentioned research questions, the following hypotheses were established:

H1: The importance of food safety and quality became more significant amongst Thai consumers because of the COVID-19 pandemic.

H:2: Online shopping/food delivery services became more popular amongst Thai consumers during the COVID-19 pandemic.

H:3: Socio-demographic variables such as age and gender had an influence on changes in consumer attitudes and purchasing habits of Thai consumers

4. Methodology

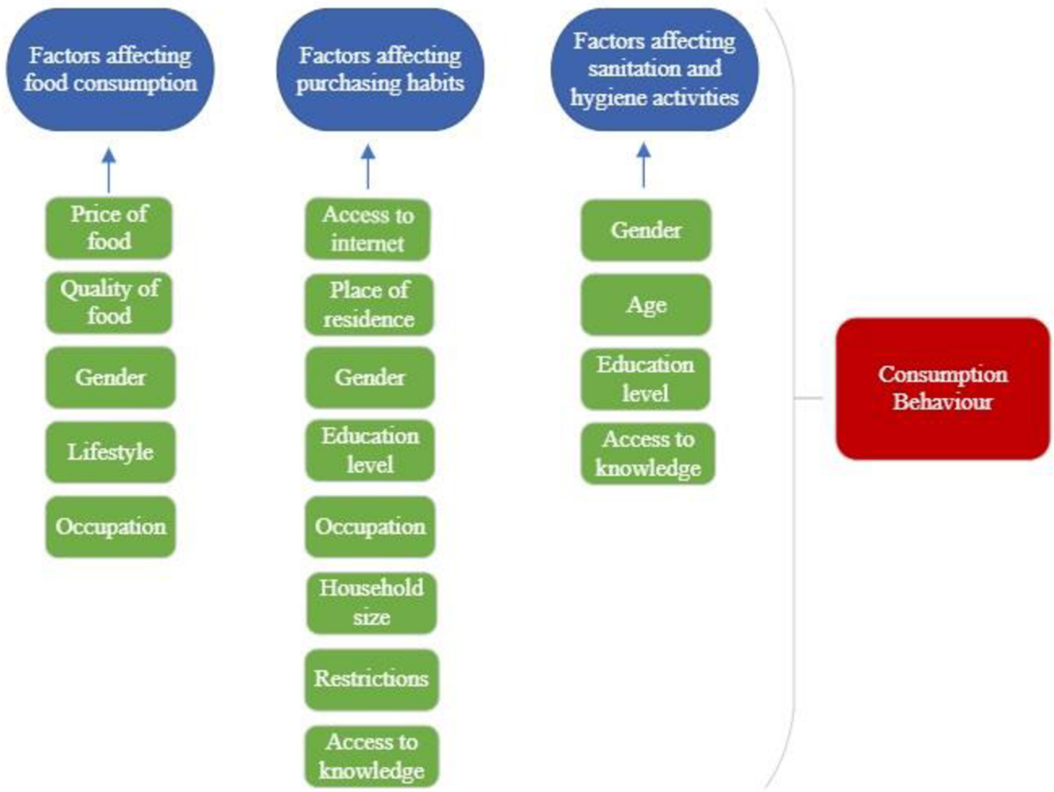
4.1. Research Design

The thesis focused on consumers, their food preferences, changes in food consumption due to COVID-19 and their purchasing habits. Furthermore, changes in perceptions of hygiene and sanitation were also focused upon. The target groups were mainly students of Thai universities from four different regions. Their responses were then compared to those of older employed individuals to see if there are differences amongst the two different groups. This country was selected as a representative of Southease Asia for its varied specifications, diversity and availability to conduct the research even during the COVID-19 pandemic through the partner universities in the country. Figure one below shows a conceptual design that was created based on the literature analyzed.

The conceptual design describes factors that have an influence on topics that are analyzed within the study. Based on the literature, food consumption saw noticeable changes because of the pandemic and variables that affected this are shown below. Independent variables which include price of food, quality of food, gender, lifestyle and occupation all have an effect on the dependent variable which is food consumption. Purchasing habits which is a dependent variable similarly has independent variables that influence its outcomes for Thai consumers. These independent variables include access to internet which not everyone may have or at different levels. Place of residence with people living in areas that may be considered rural possibly having less. This can also be linked to access to knowledge as even if the technology may be available, the user may not know how to make use of it. Household size also plays a role as depending how many people share the household there may be different requirements for the household.

Sanitation and hygiene which saw an increase in importance during the pandemic also saw changes. This can be considered the dependent variable which has independent variables that influence it. These independent variables include gender, age of individual as older people had to be more careful to avoid the virus effects. Education level as well as this had an impact in regard to awareness and knowhow of how to go about improving both sanitation and hygiene and access to knowledge as well.

Figure 1: Conceptual Design



The data collection was conducted in cooperation with four Thai universities; Chiang Mai University, Kasetsart University, Khon Kaen University and Prince of Songkla University, covering the four main parts of Thailand (North, Central, East and South). Figure 2 below shows a visual representation of these areas. In addition to this, the survey was shared amongst various social media platforms such as Facebook, Whatsapp, Instagram and Twitter in order to allow for a further reach of the population and increase the number of potential respondents. A structured questionnaire was designed and used to collect responses which were in the end collected online using google forms. In total 498 responses were collected. 273 of these were students and 210 proved to be employed individuals. In total, the target population was of all the number of students studying in

Thailand which according to Statista (2022) was about 1.7 million in 2020. At a confidence level of 95% with 5% margin for error and 50 population proportion the required size, the sample size calculation showed that 385 respondents were required as a minimum.

In relation to how the survey process was followed, once the survey was populated in English it then needed to be translated to Thai language to ensure that all respondents would be able to understand. This was done by the assistance of a native Thai speaking person who has also studied linguistics majoring in English language. This person was chosen due to their distinguishably high grasp of grammar in both languages allowing for more accurate translations. Once this first step of translation was done, the survey was then passed on to a reliable coordinator from one of the partner universities who then checked over the translations to ensure their accuracy and make changes where necessary. Updates were then made based on the suggestions given and in addition to this the survey was passed out to other native Thai speaking individuals who could assist in confirming that there were no errors present.

Once the accuracy in translation of the survey was ensure, the consumer survey was then pre-tested by a representative sample. This representative sample included some of the people who also assisted in ascertaining that the translation of the document was correct. Furthermore, native Thai speaking individuals living in the Czech Republic had an opportunity to answer and give feedback as to where improvements could be made. This concluded the pre-testing phase which was then followed by the actual collection of data. This was done over the months of August to November 2022. This was later than the planned initial dates due to the uncertainties linked to the ability to travel to collect the data in in person, translation of the survey and delayed communication between some parties involved. Participation in the survey was on a voluntary basis and self-administrated to all the participants, who were given the opportunity to answer it anonymously in their local language without any influence from the administers of the data collection.

Figure 2: Study Area

4.2. Data Collection

The structured questionnaire consisted on 12 questions in total. The first two questions asked about their personal experience with COVID-19 as well as asking if they felt as though the pandemic had influenced their long term food consumption habits. Questions three and four elaborated on these food consumption patterns by asking which foods specifically they consumed either more or less during the pandemic measured by Likert scale. Question three asked about 16 different types of foods ranging from rice and noodles to alcoholic beverages and herbal drinks. Question four focused more on types of meals that they consumed with 7 options being given which ranged from pre-prepared meals and fast food to vegetarian dishes. All questions were also answered with the use of a Likert scale to measure their relevance.

Question 5 focused on how their awareness changed on topics such as food safety and quality. Furthermore, their perception on hygiene and sanitation was also examined. Question 7 concentrated on purchasing habits. Likert scale once again was used to measure the importance placed on methods such as online shopping and mobile payments. 6 options were given here as well in respect to various purchase methods. The final section asked about the respondent's background information 6 questions related to this topic being asked. These questions included the respondents gender, age, number of people sharing a household with, which region of Thailand that they live in, what is their current profession and what their highest level of education is. A comprehensive structure of the questionnaire can be found in Annex 1.

4.3. Data Analysis

The main software that was used to analyze the collected data is Microsoft Excel as well as IBM SPSS. Descriptive statistics such as means and standard deviations for each dependent variable which includes the changes patterns of food product consumption. The same was done for other factors such as buying behaviour, changes in attitudes and purchasing habits. For questions based on Likert scale, p-value was calculated for each dependent variable to see find out whether or not there was statistical significance between the means of students and employees. Furthermore, to test the hypotheses that include socio-demographic influence, regression analysis was used to check which of these independent variables had the biggest influence on the required dependent variables. Dependent variables that were used included gender, level of education, number of people sharing a household and age of respondents. These were tested against independent variables that are linked to behavioural changes in topics linked to food safety and hygiene. These independent variables included the price of food, food quality, food safety itself sanitation. These same dependent variables were used to test changes in purchasing habits based on which they used more. The independent variables here were online grocery or food shopping, food delivery services, online payments and payments in cash.

A cross sectional design was then used to investigate the relationship with factors such as price level of food, food quality, food safety and purchasing habits. Unstandardized coefficients (B), standardized coefficients (Beta), standard error and significance levels (Sig.) were all calculated in order to measure the significance as well as strength of the relationships between predictor variables and food related behaviour and purchasing habits. Significance level was set at $\alpha = 0.05$ to investigate the relationship between independent variables and the tested dependent variables were statistically significant.

5. Results

5.1 Socio-demographic Characteristics of the Respondents

Female respondents proved to be more willing to take part in the questionnaire with 65.3% of the total being women. Table 1 below displays the sociodemographic characteristics of the respondents that took part in the questionnaire. In relation to the gender of both students and employees the number of female respondents was relatively similar as well with both students and employees being about 30% female. This in contrast to the male respondents of students compared to employees as there proved to be a difference of about 8% with male respondents proving to be more significant in response rate.

The majority to respondents proved to be part of the younger population in the nation as Thailand as the most commonly occurring answer or mode from the collected surveys was 21 years of age. As would be expected more than 50% of students under 25 years of age were students at the time of response. This also proved to be the most popular category when considering the total population of respondents. Although students proved to take the largest share of responses, individuals who are either employed or self-employed demonstrated to also show significance in the replies logged. Employed or self-employed responders stood at 42.2% of all responders who took part in the survey.

This proves to be in stark contrast to employed respondents as only 3 % of respondents fell into this age category. Most of the employed respondents fell into the category of 46-55 years of age followed by the two preceding categories which had similar response rates at approximately 10%. The category that proved to have the least number or respondents was the one the one with the oldest respondents at 56 years of and older. Of the almost 500 respondents that took part in the survey, 65.3% lived in the South of Thailand which proved to be the most representative area. About half or the respondents were students from the South. More employees were represented in central Asia in contrast at 25%. The first table in Annex 3 further shows that more than 80% of respondents at some point had personally contracted the virus at some point.

In relation to the living situation of respondents, about half, of the respondents said that they live in house or flat that consists of 3-4 for people at most. This also proved to be the most popular category with both students and employees with students being about 10% more than employees living with this many individuals in a shared living space. People living in a shared space with 5-6 people followed on as the second most popular category as just over 20 % respondents attested to living amongst this number of people whether it be family members or other people. This percentage is almost evenly split between both the students and employees which proved to have similar statistics in this sense.

When it came to the education level. the bulk of respondents attested to having attained a Bachelor's degree at the time of response. In numerical terms Bachelor's degree holders took up 65.5% of responses which moreover was signified by the mean and mode of the responders. Master's degree holders followed as the second most frequent response from respondents. Only a small rate of respondents was able to go even further than this to attain a post graduate degree. About a tenth of respondents either did not have the will or opportunity to attain higher education as 10.4% of respondents did not study further after attaining their high school. Less than 5% of respondents did however manage to attain a diploma after finishing high school.

Table 1: Sociodemographic characteristics of respondents

Socio-demographic characteristics	Total Sample		Students		Employees	
	N = 498		N = 273		N = 210	
	N	**%**	**N**	**%**	**N**	**%**
Gender						
Male	168	33.7	104	20.9	64	12.2
Female	325	65.3	170	33.5	155	29.3
Prefer not to say	5	1.0	2	0.4	3	0.6
Age						
Under 25	289	58.03	266	53.4	15	3.0
26 - 35	58	11.65	7	1.4	50	10.0
36 - 45	48	9.64	0	0.0	47	9.4
46 - 55	93	18.67	0	0.0	91	18.3
56 and Older	10	2.01	0	0.0	7	1.4
Number of people sharing living space						
1-2 people	94	18.9	41	8.2	50	10.0
3-4 people	253	50.8	147	29.5	98	19.7
5-6 people	113	22.7	59	11.8	50	10.0
>6 people	38	7.6	26	5.2	12	2.4
Region of residence						
North	23	4.6	12	2.4	10	2.0
Northeast	10	2.0	3	0.6	6	1.2
East	5	1.0	0	0.0	5	1.0
Central	135	27.1	6	1.2	125	25.1
South	325	65.3	252	50.6	64	12.9
Level of education						
Non formal	1	0.2	0	0.0	1	0.2
High school diploma	52	10.4	47	9.4	4	0.8
Diploma	18	3.6	13	2.6	5	1.0
Bachelor's degree	326	65.5	204	41.0	111	22.3
Master's degree	86	17.3	7	1.4	76	15.3
Postgraduate	15	3.0	2	0.4	13	2.6

5.2. Buying behaviour attitudes and habits

The results observed showed various trends in three areas including food consumption habits, food safety awareness and methods of purchase. Once again students and employed individuals were analysed more in depth to observe which differences are most prominent between the two. The first category to be examined in table 2 was the changes that were seen in terms of food safety. Within this category there was a difference observed in relation to the amount of pre-prepared or semi-finished goods consumed because of the pandemic. Students proved to show a strong increase at 3.06 mean in this variable as compared to both the total sample mean and even more so compared to the mean of employed respondents. The p-value for this variable further shows that there is statistical significance between students and employees.

Following on from this trend, students once again displayed that they also started to eat more fast food as a result of the pandemic. Employees once again had the lowest mean in this variable at 2.19 which suggests that they generally at less fast food as a result of the pandemic. It is important to mention however that although students had a higher mean, at 2.89, this does not mean that a significant number of students started to eat fast food more often as it is close to but still not quite suggest that the students agree with the fact that they eat more fast food. Once again with this variable though there is statistical significance between both students and employees.

When it came to street food, students at a mean of 3.04, once again proved to have the highest mean when comparing to both the total sample and employed respondents. Employed respondents showed the lowest mean here as compared to the other two. The standard deviation for both students and employees is above 1 suggesting that data points are respectively above the mean. Restaurant made food furthermore showed to be prevalent for students as they had the highest mean in this variable as they purchased food more from restaurants as a result of the pandemic.

There were not many significant differences when it came to the category of changes in attitudes of respondents. In general, for both students and employed respondents the mean was relatively similar to each other and that of the total sample. You can however observe that with most of the variables such as cooking from home more often, more awareness in concern to how they social distance and sanitation habits, there was a visible increase in each of these due to the pandemic. This brings further light to the trend of people being more careful in terms of what they eat, how they spend time with people and how they pay more attention to habits of cleanliness.

Spending time with family additionally proved to be important for respondents but less so when you relate this to the other variables in this category. Food quality and price did nevertheless show some statistical significance. Students assert that the price of food became more important to them as compared to employed respondents. This may be due to the fact that students may not have as many funds available to them to purchase the food they want. They still do nevertheless feel as though the quality of food still plays an important role to them more so than their employed counterparts.

The category of purchase habits demonstrated to not have much of a statistical significance difference between students and employees. Mobile banking did however prove to be the variable that had the most significant level of agreement from both students, employees and the total sample as well. Respondents would rather use their phones more to purchase goods or services as this was the most readily available option as well as the fact that it was the safer option. Online payments concurrently matched this as it also had a high mean for students and employees at 4.17 and 4.16 respectively. Payments in cash proved to be the least popular form of payment compared to other purchase habits as these increases in physical contact consequently increasing chances of disease transfer amongst people. The second table in Annex 3 showcases that about a third of respondents were unsure as to the impact that the pandemic had on their consumption habits. More than 40% of respondents however either agreed or strongly agreed that it did have a direct influence.

Table 2: Observed behavioural pattern changes in food consumption habits, food safety awareness and payment methods amongst Thai students and employees resulting from COVID-19 pandemic

Variable	Total Sample N = 498 Mean	Students N = 273 Mean	Employees N = 210 Mean	p - value
Food consumption habits				
Pre-prepared meals and semi-finished products (e.g. frozen meals from shops)	2.73(1.191)	3.06(1.141)	2.28(1.094)	**<0.001**
Fast food (e.g. KFC, McDonald)	2.59(1.144)	2.89(1.159)	2.19(0.999)	**<0.001**
Street food	2.76(1.129)	3.04(1.098)	2.40(1.081)	**<0.001**
Organic and farm products	3.06(1.182)	3.09(1.185)	3.03(1.184)	0.379
Vegetarian or vegan dishes	2.62(1.167)	2.65(1.163)	2.60(1.179)	0.493
Market brand produce	2.95(1.145)	3.29(1.086)	2.53(1.099)	**<0.001**
Restaurant made food	3.16(1.159)	3.47(1.061)	2.78(1.194)	**<0.001**
Food safety awareness				
Price of food	3.79(1.033)	3.98(0.913)	3.52(1.121)	**<0.001**
Food quality	3.98(0.943)	4.01(0.874)	3.93(1.026)	**0.028**
Food safety	4.16(0.846)	4.12(0.866)	4.18(0.833)	0.144
Sanitation (hand washing before eating, etc.)	4.26(0.823)	4.22(0.819)	4.28(0.843)	0.135
Spending more time with friends and family	3.78(1.023)	3.92(0.958)	3.56(1.084)	**0.028**
Home cooking	3.95(1.025)	3.95(0.997)	3.92(1.066)	0.533
Social distancing	4.16(0.865)	4.15(0.844)	4.15(0.882)	0.077
Payment methods habits				
Online grocery or food shopping	3.76(1.013)	3.86(0.941)	3.62(1.096)	0.396
Food delivery services	3.90(0.989)	3.97(0.901)	3.78(1.094)	0.113
Payments with credit/ debit card	3.91(0.985)	3.87(0.991)	3.95(0.922)	0.203
Payments in cash	2.86(1.154)	3.03(1.139)	2.64(1.146)	**0.023**
Online payments	4.16(0.846)	4.17(0.823)	4.16(0.880)	0.774
Mobile banking (e.g. payment via bank application)	4.23(0.802)	4.24(0.789)	4.22(0.184)	0.870

*Bold annotates statistical significance (p<0.05)

5.3. Food Consumption Habits During the COVID-19 Pandemic

Variables under food consumption proved to display the most differences in the study when comparing students with employed respondents which were altered during the COVID-19 pandemic. Rice which is an admired staple food in Thailand saw a steady increase in consumption during the pandemic, especially for students at 3.12 mean. This could be expected as Rice has been part of the history of Thailand and is eaten on a daily basis not only in Thailand but most of Asia. This is a similar notion when compared with noodles which are also a staple in the nation. This is further emphasized by the fact that noodles attained a similar result to rice. Values were similar across the board for students, employees and the total sample. Moreover, they both exhibited statistical significance in table 3.

In order to be healthier however as a way to battle the effects of the pandemic, both students and employees showed an increase in consumption of fresh fruits and vegetables. Students found the fresh fruits and vegetables as well as supplemental products to be more important as they had higher means as compared to employees. Fresh fruits and vegetables showed that there was statistical significance between the two sets of respondents while. Although students showed that they do care about their health by eating more fruits and vegetables, they did also in contrast show a higher increase in the amount of sugary drinks consumed during the pandemic. Their mean of 2.65 proved to be higher than that of employees and also the total sample.

A noteworthy difference may also be observed in the amount of salty snacks as well as sweets consumed as a result of the pandemic. Students displayed a higher mean in both of these variables with more time spent at home resulting in increased consumption of these kind of easy to consume high caloric foods. Both of these showed statistical significance compared to employees.

Table 3: Changes in food preferences amongst students and employees as a result of the COVID-19 pandemic

	Total sample N = 498	**Students** N = 273	**Employees** N = 210	
Food Products	**Mean**	**Mean**	**Mean**	**p - value**
Rice	2.86(1.073)	3.12(1.015)	2.51(1.050)	**<0.001**
Noodles	2.9(1.101)	3.11(1.037)	2.60(1.104)	**<0.001**
Cereal, oatmeal or porridge	2.65(1.079)	2.75(1.023)	2.52(1.150)	**0.042**
Fresh fruits and vegetables	3.48(1.114)	3.51(1.058)	3.43(1.193)	**<0.001**
Supplemental products (e.g., vitamins, minerals, herbs)	3.36(1.236)	3.42(1.171)	3.27(1.315)	0.076
Sugary drinks such as Coca-Cola or Fanta)	2.40(1.063)	2.65(1.008)	2.07(1.047)	**<0.001**
Legumes (e.g., beans. lentils. Soybeans)	2.88(1.081)	2.87(1.010)	2.89(1.164)	**0.018**
Meat or meat-based products	3.13(1.059)	3.38(0.959)	2.79(1.100)	**<0.001**
Milk and dairy products (e.g., cheese, yogurt)	3.00(1.099)	3.16(1.052)	2.77(1.126)	**0.003**
Pastries (e.g., bread, rolls, buns)	2.78(1.053)	3.05(0.991)	2.40(1.022)	**<0.001**
Fish or seafood	3.19(1.108)	3.24(1.074)	3.09(1.158)	0.137
Sweets (e.g. chocolates, biscuits, cakes, pastries, ice cream)	2.65(1.107)	2.98(1.057)	2.23(1.047)	**<0.001**
Salty snacks (e.g. potato chips)	2.48(1.123)	2.81(1.074)	2.03(1.039)	**<0.001**
Alcoholic beverages (e.g. beer, wine)	2.05(1.066)	2.22(1.136)	1.82(0.931)	**0.007**
Fruit juices	3.03(1.202)	3.22(1.140)	2.76(1.241)	**<0.001**
Herbal drinks (e.g. Chrysanthemum juice, Roselle Juice, lemongrass juice)	3.16(1.229)	3.24(1.201)	3.03(1.250)	0.406

*Bold annotates statistical significance (p<0.05)

5.4. Factors Affecting Perception of Food Quality Aspects

Multiple regression analysis was decided upon to be used in order to have a deeper understanding of how the analyzed independent variables have an impact on dependent variables. Four independent variables which consist of gender, household size, level of education and age were selected. The dependent variables which were then used to test them against were based on the hypotheses introduced earlier in the study. In order to test the hypotheses that are linked to importance of food quality and its importance as a result of the pandemic and food safety and its importance, independent variables were tested in conjunction with variables connected to these.

Respondents were asked directly about how their perception of food quality changed during this period. The table below shows that there was statistical significance linked to gender in this aspect. This was the only independent variable that showed statistical significance associated with food quality. When we look closer at the unstandardized coefficient of gender which is 0.259, when other variables remain constant, women tend to have a higher perception of food quality and its importance as compared to their male counterparts. The standardized coefficient (Beta) is 0.135, which means that gender accounts for a moderate amount of variance in food quality perceptions. The price of food can also closely be linked to the quality. By examining the standardized coefficients in table 4 below, we can find that the largest correlation between age and food prices exists for this group (-0.222). This implies that the price of food decreases by 0.222 standard deviations for every one standard deviation increase in age group

Also, there is a substantial link between education level and food price with a standardized coefficient of -0.089. This means that for every standard deviation rise in education level, food price decreases by 0.089 standard deviations. While their standardized coefficients are minor and their significance levels are higher than level of the level of significance used. Moreover, gender, the number of persons sharing a living space, and occupation do not appear to have a meaningful association with food price. Overall, this research reveals that the most crucial variables to take into account when analyzing the relationship between food price and other variables are age group and degree of education.

When further analysing other unstandardized coefficients, the number of people sharing a living space also has a positive value. which shows that for every additional person sharing the living space, there is a slight increase in the perception of food quality. However, the effect is not statistically significant as its p-value is high. Conversely to this the opposite can be said about occupation, level of education and age group as these all have negative values. This means that they have no on food quality and its importance as a result of the pandemic in relation to the index. Looking closely at occupations unstandardized coefficient of -0.032, this alludes to the fact that as the level of education increases, the perception on food quality decreases. The same can be said of the age of respondents.

When it came to food safety, gender once again proved to be statistically significant. Women once again tend to place a higher importance or perception of food safety as compared to male respondents. None of the other factors proved to be statistically significant. When it came to level of education, table 4 shows that although not statistically significant, the unstandardized coefficient of 0.018 proposes that as the level of education increases, the perception or importance of food safety concurrently increases. Age or respondents as well as the number of people sharing a household proved to not have an impact on the perception of respondents to food safety. Sanitation and hygiene proved to be a lot more focused upon when COVID-19 began to spread within the nation. Gender proved to be statistically significant in for this aspect as well. Women yet again demonstrated to place higher importance on hygiene and sanitation. The only other independent variable that revealed an effect on the perception and importance of hygiene and sanitation was the respondents level of education. The unstandardized coefficient showed that as the level of education increases, higher importance is placed on hygiene and sanitation.

Table 4: Socio-demographic factors influencing changes in consumer attitudes as a result of the COVID-19 pandemic

	Unstandardized Coefficients		Standardized Coefficients		
Variables	B	Std. Error	Beta	t	Sig.
Food Price Level*					
Gender	0.162	0.092	0.077	1.770	0.077
Household size	0.085	0.054	0.068	1.558	0.120
Level of education	-0.105	0.057	-0.089	-1.849	0.065
Age	-0.181	0.053	-0.222	-3.414	**0.001**
Food Quality*					
Gender	0.259	0.086	0.135	3.001	**0.003**
Household size	0.021	0.051	0.018	0.405	0.686
Level of education	-0.032	0.053	-0.030	-0.601	0.548
Age	-0.036	0.050	-0.049	-0.726	0.468
Food Safety*					
Gender	0.257	0.077	0.149	3.325	**0.001**
Household size	-0.067	0.046	-0.065	-1.455	0.146
Level of education	0.018	0.048	0.019	0.382	0.703
Age	-0.003	0.045	-0.004	-0.058	0.954
Sanitation* (hand washing before eating, etc.)					
Gender	0.234	0.075	0.140	3.112	**0.002**
Household size	-0.016	0.045	-0.016	-0.352	0.725
Level of education	0.032	0.047	0.034	0.681	0.496
Age	0.011	0.044	0.017	0.250	0.803

Note: * annotates dependent variables and bold represents level of significance ($p<0.05$)

Note: Summary of models are provided in Annex 2

5.5 Factors affecting changes in purchasing habits

Purchasing habits as mentioned earlier were also affected by the pandemic. This was further analysed in table 5 below to assess how respondents may have altered their habits in relation to how they purchase goods and services. Table 5 shows that statistical significance was witnessed in connection with gender with a beta value of 0.097. This indicates that there is a significant positive connection between gender and the use of credit/debit cards. In addition to this the implementation is that that males are more likely to utilize these payment methods than females. The other demographic factors were not found to be significantly related to credit/debit card payments.

A beta coefficient of -0.114 ($p = 0.020$) shows that there is a significant negative link between education level and cash payments, indicating that people with higher education levels are less likely to use cash payments than people with lower education levels. Moreover, in table 5 there is an adverse correlation between age groups and cash payment usage although insignificant. For online payments displayed in table 5, once again gender is found to have a significant positive relationship with this payment method, as indicated by a beta coefficient of 0.094 ($p = 0.038$). this suggests that male respondents are more likely to use this payment method as compared to female ones

Table 5: Socio-demographic factors influencing changes in purchasing habits as a result of the COVID-19 pandemic

	Unstandardized Coefficients		Standardized Coefficients		
Variables	B	Std. Error	Beta	t	Sig.
Online grocery or food shopping*					
Gender	0.234	0.093	0.113	2.520	**0.012**
Household size	-0.015	0.055	-0.012	-0.273	0.785
Level of education	0.049	0.057	0.042	0.848	0.397
Age	-0.087	0.054	-0,109	-1.616	0.107
Food delivery service*					
Gender	0.172	0.091	0.085	1.890	0.059
Household size	-0.049	0.054	-0.041	-0.913	0.362
Level of education	0.048	0.056	0.042	0.850	0.396
Age	-0.100	0.053	-0.128	-1.898	0.058
Payments in cash*					
Gender	-0.044	0.104	-0.019	-0.421	0.674
Household size	0.080	0.062	0.057	1.293	0.196
Level of education	-0.150	0.064	-0.114	-2.336	0.020
Age	-0.116	0.060	-0.128	-1.927	0.055
Online payments*					
Gender	0.162	0.078	0.094	2.076	**0.038**
Household size	-0.065	0.046	-0.063	-1.400	0.162
Level of education	0.007	0.048	0.008	0.153	0.879
Age	-0.041	0.045	-0.061	-0.901	0.368

Note: * annotates dependent variables and bold represents level of significance ($p<0.05$)

Note: Model summaries are provided in Annex 2

6. Discussion

The results of the study showed several trends amongst the respondents with one of the firsts ones noticed being present in the characteristics of the sample size. More women participated in the study as compared to their male equivalents. This outcome from the study conducted is verified the claim by Fisher (2016) who states that women in general have higher response rates in survey participation compared to men. Fisher (2016) elaborates on this by stating that a reason for this is women have a higher likelihood of taking part in activities that involve the communities that they live in as well as having higher social interaction rates. Furthermore, women may as well harbor greater inclination to express their emotions and share the experiences that they have been through making them more likely to take part in surveys such as this one (Schouten 2007).

When distinguishing between students and employed respondents as expected a majority of the students were in the youngest category of under 25. Employed respondents were more spread out in this aspect which would also be expected. Concerning the number of people sharing a household, the most frequently specified ratio of 3-4 people made sense as it is in line with the Thai average quantified by the World Bank (2021) who pinpoint that it stands at 3.6. This proves to be lower than some other countries in Southeast Asia such as Indonesia and the Philippines who have average household sizes of 4.8 and 5.1 respectively (World Bank 2021). Kasar et al. (2021) expands upon this by stating that the reason for having multiple people sharing a living space in many cases in Southeast Asia is economic constraints. This plus the need for mutual support from family members mean that spaces are shared at a higher rate than what may be seen in certain other parts of the world. The presence of extended family living in the same space is also a common occurrence as culturally it is expected that as the elderly find it more difficult to look after themselves, the younger members are expected to look after them (Chant 2016).

Education is a topic that has been discussed with high intensity within Thai governments as they try to increase the education level of individuals. This is because of the relatively low number of people who have attained a degree at tertiary level with the National Statistical Office (2020) stating that 20.9% of the population had been able to achieve Bachelor's degree status or higher. This is low compared to the respondents that took part in this study as many of them had achieved bachelors or master degrees. This may suggest that plans put in place by the government may be moving in the right direction. The Ministry of Education (2017) have previously stated that their aim is to increase the number of students enrolled in higher education to 50% by the year 2030.

On the topic of food consumption and changes in buying behaviour, one interesting finding in the study showed students had a noticeably higher inclination to the purchase and consumption of pre prepared meals during the pandemic. Employed respondents scored relatively low here as this was not popular or as relevant to them during the pandemic. Dahl (2022) suggests that there was a general increase in consumption of pre prepared meals due to several factors such as concerns about food safety, not being able to eat out anymore at restaurants or similar establishments and convenience. Bloomberg (2020) furthermore states that online grocery retails decided to put a greater focus on these kind of offerings. Most online retailers increased their catalogue of such options making it easier for shoppers to purchase these meals at the same time as they bought groceries. Bloomberg (2020) suggests that another reason for this was the increase in popularity of online shopping during the pandemic. Pre-prepared meals being more popular with students may also be put down to the fact that students may have less time to cook meals due to time spent studying while employed respondents may be able to do so after work or even cook while working from home.

A similar pattern could be seen when looking closely at the consumption of fast food. Although not significantly high, still tended to consume more fast food compared to employed respondents. Euromonitor (2021), states that although there was an observed increase in online ordering and delivering of fast food during the pandemic, there was an overall decrease in consumption of fast-food consumption in Southeast Asia. This is in line with the study conducted here and the earlier findings that showed that individuals became more concerned about their health. Nielsen (2020) moreover suggests that this is not only because of a concern for health but also because of reductions in income and job losses. Less availability of funds meant that cutbacks needed to be made on spending and ensuring that only essentials were acquired (Laguna et al. 2020).

Dahl (2022) highlights why students may have consumed more fast food compared to employees. Closures of schools meant that students were spending more time at home while options were also limited as to what they could eat outside of home. Overall students did feel as though that eating healthier was important and this was reflected in the menus of even fast-food restaurants. Many fast-food outlets began to offer healthy options as well which promote fresh ingredients alongside their traditional offerings to better match the requirements of their market (Euromonitor 2021).

Even street food, which is a very popular way to purchase food in Southeast Asia, saw that in order to combat the inconveniences caused by the pandemic, they had to also find ways to sell their food online (World Food Programme 2021). This was mostly done by selling their food on food delivery apps (Kozak et al. 2022). This further shines a light upon the results of the study where an increase was seen in the use of online delivery apps by both students and employees. In accordance with the conducted study however, vegetarian and vegan food consumption did not see a particular change during the pandemic. This is despite an increase in health consciousness. Thiager (2022) suggests that a disruption in supply chain due to transport restrictions may have also contributed to this as acquiring necessary ingredients became more difficult.

There were also significant changes witnessed in the attitudes of the respondents. Price level of food saw the biggest statistical difference. The price of food proved to hold significantly increased importance for respondents as they attempted to be more frugal with their spending. Euromonitor (2021) suggests that this was largely due to losses of jobs which meant a decrease in available funds. With students usually not having a notable source of income, price of food proved to be even more important to them as they looked to save where they could. Moreover, this is reflected by the fact that there was an increase in awareness of attention put onto the price paid for food when the number of people sharing a living space increased. Euromonitor (2021) puts this down to the fact that with a high number of people to feed in the household and reduced income from bread winners, funds were more closely looked after. Budgets were tighter than they were before the pandemic while food prices for certain items simultaneously increased.

Food safety and quality as well showed significant increases in importance as a result of the pandemic. The results from the study are accordance with findings from the IFIC (2021) who conducted a survey that found that 85% of consumers in Southeast Asia felt as though they were more concerned about food safety, quality and hygiene because of the pandemic and its effects. This is further reflected by the findings from the study conducted here that saw substantial increases in concerns for sanitation and hygiene for both students and employees. Food safety and quality in particular saw greater awareness from female gender roles. Kozak et al. (2020) states that this is linked to both cultural and societal norms that are present in Southeast Asia. Usually activities such as cooking, food preparation and grocery shopping are done by the woman which leads to them having an increased concern and awareness on practices of food safety and the quality of the food they feed the family. Mintel (2021) emphasizes on these statements by suggesting that there was an increased emphasis on food safety as individuals made sure to pay proper attention to how they cooked, handled food as well washing of the food before it being cooked to reduce chances of contamination.

In addition to this, education level also proved to play a role as showcased in the study. The higher the level of education the greater the awareness of especially food safety. This is in line with the findings of Hooper (2022) who utters the notion that individuals that have superior levels of education as compared to what may be the average in general have better access to information about food safety. This access plus the ability to think critically in order to properly understand changes and guidelines put in place by health authorities lead to a better grasp of what information is important to them and their lives.

The study undertaken here showed that gender furthermore proved to play a role here as women proved to be more concerned about sanitation and hygiene. This is in accordance with findings from Zhao et al. (2021) who alludes to the fact that females have a higher chance of following social distancing guidelines as well as using hand sanitizer. Haque et al. (2020) suggests that this difference may be attested to the traditional role that women have as care givers of their family and community as a whole. Zhao et. (2021) goes further by signifying that female tend to be more risk averse than males therefore being more careful as to how they may avoid coming into contact with the virus.

The level of education also proved to play a role in this with the higher the level of education the increase in awareness and importance placed into sanitation and hygiene. Cheng et al. (2020) elaborates on this by proposing that individuals with higher education levels also have more information and knowledge about the virus and how it spreads. This means that they also have more knowledge and are consequently more likely to ensure that they participate in preventative measures. Norman et al. (2021) expands upon this by stating that education levels also play a role in perceptions and attitudes towards sanitation. A higher level of education is associated with an increase in the level of health literacy resulting in understanding the importance of hygiene and sanitation for disease deterrence.

This is in relation to both hygiene as well as social distancing. Social distancing as expected saw substantial increases for both students and employed individuals as people were restricted in their movement and physical contact. Findings in this study did however show that level of education did not play a role in the importance placed on social distance during the pandemic. This is in contrast to the research by Sooksri et al. (2021) who remarks that persons with higher levels of education similarly to the outlook on sanitation and hygiene, have a higher likelihood of placing greater importance on social distancing. Euromonitor (2021) amplifies upon this by implying that these of sanitation and social distancing are heavily linked to each other. Compliance with rules and laws put into place as well as knowledge about how to try best avoid contracting the virus increases with education levels.

The older individuals get the more that they will also look after themselves. In agreement with the study embarked upon, Norman et al. (2021) advocates that older adults tend to place more importance on hygiene and sanitation compared to younger age groups. This because of the awareness that they have that the body becomes more susceptible to viruses or diseases the older you get as the immune system weakens. Furthermore, older generations may have lived through previous health crises or pandemics which play a role in shaping their awareness and the importance they place on sanitation and hygiene (Cheng et al. 2020). Respondents did also see a noticeable increase in the importance of time spent with friends and family. This was however difficult to do due to the restrictions put in place as well as the fear of passing on the virus to loved ones. These findings linked to socio-demographic factors all but confirm the third hypothesis.

Changes in consumption of food products and their consumption were observed with the findings showing that respondents became more conscious of whether or not the food they were eating was healthy or not. In line with findings from the study conducted here, a similar study that was conducted by Sooksri et al. (2021) which investigated the impact of COVID-19 on food consumption behaviour amongst Thai consumers. The by study Sookrsi et al. (2021) found that Thai consumers increased their consumption of rice, noodles, and fresh fruits and vegetables during the pandemic. As consumption of these food types increased, consumption of sugary drinks, pastries, and salty snacks decreased significantly. The study that was conducted here showed that this was the case for not only the total population but for students and employees as well which is in line with the first hypothesis. The authors attributed these changes to increased health consciousness among consumers. The reason for eating more fruits and vegetables as well and supplementary products was due to the increased awareness of the importance of a healthy and balanced diet in boosting the immune system and staying healthy during the pandemic consumers (Chunthawodtiporn, et al. 2021). Furthermore, the closure of food establishments during lockdowns, meant that more people had to resort to home-cooking.

A notable point brought up by Thaiger (2022) however, in the case of food products such as rice, noodles and pastries was that the increase was also attributed to panic buying. Consumers purchased these products at increased rates as fear of the unknown of the pandemic set in and these foods were seen as safe and practical due to their long shelf life. Apidechkul et al. (2020) however highlights the fact that this lead to shortages of such staple foods in some areas. In addition to this, Chunthawodtiporn, et al. (2021) proposes that these type of food products were also popular due to how affordable they are, how easy they are to prepare and how easy they were to find.

Apidechkul et al. (2020) study also revealed that students had a greater preference for meat or meat-based products than employed respondents. This is in line with the study that was conducted here as this variable showed statistical significance with students attaining a noticeably higher mean. This would suggest that students may have had a stronger inclination towards comfort food during the pandemic.

Similar findings were seen in relation to the consumption of sweet foods such as chocolates or cakes. Statistical significance was seen with students enjoying these so called guilty pleasures more during the pandemic. Thaiger (2022) once again associated this with the desire for comfort during the stressful times that were being faced with students having the added pressure of needing to study as well. Furthermore, baking during the pandemic gained popularity as people found it to be a good way to alleviate stress while simultaneously passing time while at home (Fronde 2021). Students were also observed to consume slightly more alcohol than employed individuals during the pandemic. The numbers for both however are relatively low. This is in accordance with what Chan (2021) had to say suggesting that alcohol consumption is generally not that high in Southeast Asia compared to other countries such as in the UK which saw increases in alcohol consumption. In addition to this, the closure of bars and restaurants meant that access to alcohol and social drinking was also limited (Beckers et al. 2021).

Changes were also witnessed linked to purchasing habits of consumers with the study showing a significant increase in use of online services. Statistical significance was generally not observed here between students and employees but in general you still see that there was a substantial increase. This is in line with the second hypothesis tested in the study. Brouder (2021) links this to people wanting to minimize contact to reduce the spread of COVID especially with cash notes as these are known to be on to harbour bacteria and viruses. This was apparently brought even more to the forefront during the pandemic as banknotes increase the chances of passing these germs along to other people as they may also touch their face, mouth or eyes after touching cash (Biranjia-Hurdoyal et al. 2020; Ansari et al. 2021).

Digital transformation and e-commerce in addition quickly accelerated during the pandemic which as a result saw improvements in online delivery platforms and other such required services (Zhao 2021). Businesses took this opportunity in order to not only stay afloat but also expand their business with product lines being expanded online to match demand of consumers (Brouder 2021). This in tandem with the forced closure of shops and restaurants convened to impact the online consumer landscape resulting in changes that that are still being seen today.

As with all studies though it has to be mentioned that there may have been some limitations that were present. One such limitation is the fact that the study mainly focuses on students and employees which may not give a proper representation of the entire population. This potential none representation of the entire population may also be present due to the fact that a majority of the respondents were living in the South of Thailand. Furthermore, given the fact that the data was collected via online questionnaires, this could mean that some bias may have been present or respondents may not have been completely honest in their responses. Not being able to go collect the data in person due to circumstances meant that it was difficult to limit this.

7. Conclusion

The main objective of this study was to investigate how the COVID-19 pandemic affected consumer behaviour in Thailand. Furthermore, the study sought to examine and compare patterns and differences that existed between two groups namely students and employed respondents who took part in the study. The results section showcased that differences were observed in some aspects in relation to both groups and these differences go further in some cases to aspects such as gender or age groups for instance. Questions and analysis were made in connection with they tested hypotheses specified for the study.

One of the most noteworthy changes that was observed was that consumers including both students and employees became a lot more health conscious and as a result began eating healthier than before. This was done in order to combat the effects of the virus. Students did seem to struggle a bit more than employees to keep up with these healthy habits as they still enjoyed some guilty pleasures such as fast food, sweets and alcohol. Health was still however the main focus as food products such as fruits, vegetables, fruit juices and supplemental products saw more significant increases. This also meant that people became more conscious of the importance of food safety and quality as well. Encouraging individuals to continue with the trend of healthy living by supporting healthy lifestyle habits which may be done by government increasing the number of sporting facilities available to the public and regulating the price of healthy foods. Furthermore, the dangers associated with unhealthy foods should be conveyed to the public to increase awareness and educate the people of the nation.

The fact that individuals were not able to go out to restaurants or other such establishments however also had an effect on consumption habits. An upward trend could be seen in online purchases for already cooked food, groceries and other goods and services. Technology became an essential as physical contact was restricted in the nation. This meant that purchasing habits saw changes with increases seen in use of food delivery services, online payments and online shopping, while in contrast cash payments experienced a significant decrease. It is thus important to ensure that everyone in the country has adequate access to these technologies regardless of background or place of residence.

Socio-demographic proved to likewise have an impact on factors such as purchasing methods and levels of awareness in relation to aspects such as food safety, quality and hygienic practices. Gender especially showed noteworthy influence as women in general tended to show higher awareness on these topics. Level of education moreover had an influence on these topics as well as purchasing habits with a higher level of education increasing both awareness and interest. Increasing levels of education amongst Thai individuals should that be placed high on the priority list so that everyone is able to take part and improve their own situations in regards to these aspects.

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Appendices

List of the Appendices:

- Outline of Questionnaire
- Summary of Models
- Question 1 and 2 from Questionnaire Frequencies

Appendix 1: Outline of Questionnaire

1. Have you or anyone in your family tested positive for COVID-19?

Yes

No

2. Do you believe the COVID-19 pandemic influenced your long-term food consumption habits?

Yes

No

3. Did you start to consume the foods listed below more as a result of the COVID-19 pandemic? *

Rice

Noodles

Cereals, muesli, porridge

Fresh vegetables and fruits

Food supplements (e.g. vitamins, minerals, herbal products)

Sugary drinks (e.g. Coca-Cola, Fanta)

Legumes (e.g. peas, lentils, beans, soybeans)

Meat

Milk and dairy products (e.g. cheese, yoghurt)

Pastries (e.g. bread, rolls, buns)

Fish and seafood

Sweets (e.g. chocolates, biscuits, cakes, pastries, ice cream)

Salty snacks (e.g. chips)

Alcoholic beverages (e.g. beer, wine)

Fruit juice

Herbal drinks (Chrysanthemum juice, Roselle Juice, lemongrass juice)

4. Did you consume the food products listed below more because of the COVID-19 pandemic? *

Pre-prepared meals and semi-finished products (e.g. frozen meals from shops)

Fast food (e.g. KFC, McDonald)

Street food

Organic and farm products

Vegetarian or vegan dishes

Curry and rice

A la carte restaurant

5. Did the COVID-19 pandemic make you more aware or concerned with the aspects and activities listed below? *

Food price

Food quality

Food safety

Sanitation (hand washing before eating, etc.)

Spending more time with friends and family

Cooking at home

Social distancing

6. Did you find the following services to be more important as a result of the COVID-19 pandemic? *

Online grocery shopping

Food delivery services

Payments with credit/ debit card

Payments in cash

Mobile payment

Mobile banking

Continue to next section

Personal background

7. Gender

Male

Female

Prefer not to say

8. Please state your age

Short answer text

9. How many people live in your household?

1-2

3-4

5-6

More than 6

10. Which region on Thailand do you live in?

North

North East

East

Central

South West

11. What is your profession?

Student

Self Employed/ Er

Unemployed

Pensioner

12. What is your highest level of education?

Non formal

High school diplo

Diploma

Bachelors

Masters

Post Graduate

Note: Questions containing * were answered according to Likert scale from Strongly disagree to strongly agree.

Appendix 2: Summary of Models

Food Price		
R	R Square	Adjusted R Square
.945[a]	0,897	0.892

Food quality		
R	R Square	Adjusted R Square
.936[a]	.882	.869

Food safety		
R	R Square	Adjusted R Square
.887[a]	.798	.790

Hygiene and sanitation		
R	R Square	Adjusted R Square
.812[a]	.774	.665

Online shopping		
R	R Square	Adjusted R Square
.952[a]	.899	.888

Food delivery services		
R	R Square	Adjusted R Square
.802[a]	.726	.719

Cash Payments		
R	R Square	Adjusted R Square
.326[a]	.512	.501

Appendix 3: Question 1 and 2 Frequencies

Have you or anyone in your family tested positive for COVID-19?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	420	84,3	84,3	84,3
No	78	15,7	15,7	100,0
Total	498	100,0	100,0	

Do you believe the COVID-19 pandemic influenced your long-term food consumption habits?

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly disagree	50	10,0	10,0	10,0
Disagree	65	13,1	13,1	23,1
Unsure	163	32,7	32,7	55,8
Agree	109	21,9	21,9	77,7
Strongly agree	111	22,3	22,3	100,0
Total	498	100,0	100,0	