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Lyceum of the Philippines University- Manila
The Claro M. Recto Academy of Advanced Studies
Intramuros, Manila

July 22, 2021

DR. SAMUEL S. CHUA
Dean, Graduate School
Claro M. Recto Academy of Advanced Studies

Upon the review of the paper of my advisee, JUSTINE MARIELLA ABRIGO, and after conducting constant consultation with her, I believe that she is now ready to present her paper entitled "THE COEXISTENCE OF SERVICE AUTOMATION AND HUMAN LABOR IN METRO MANILA IN THE FOOD AND BEVERAGE SECTOR OF TOURISM INDUSTRY".

I, am, therefore, respectfully, endorsing, Ms. Abrigo, to present her paper in the **final defense** and requesting that the same be scheduled on the earliest available date.

I am looking forward to your favorable response to this matter.

Thank you.

Sincerely,

(SGD) Dr. Ma. Pagasa Nanette Rotairo
Adviser

THE COEXISTENCE OF SERVICE AUTOMATION AND HUMAN LABOR IN METRO MANILA IN THE FAST-FOOD CHAIN INDUSTRY

A Thesis Proposal
Presented to the Graduate School
Claro M. Recto Academy of Advanced Studies
Lyceum of the Philippines University
Intramuros, Manila

In Partial Fulfillment of the Requirements
For the Degree of
Master in International Tourism Management

By

Justine Mariella T. Abrigo

2021

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LYCEUM OF THE PHILIPPINES
CLARO M. RECTO ACADEMY OF ADVANCED STUDIES

☑ Manila ☐ Cavite

APPLICATION FOR ADVISERSHIP

NAME : JUSTINE MARIELLA ABRIGO Date June 01, 2019

MASTERS IN INTERNATIONAL TOURISM MANAGEMENT
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TITLE OF APPROVED THESIS/DISSERATION:
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ADVISER DR. MA. PAUNA [signature] ROTAIKO DATE June 01, 2019

Accepted: SIGNATURE

ACTION BY THE DEAN: ________ APPROVED ________________ Signature and Date

________ DISAPPROVED ________________ Signature and Date

TITLE: THE COEXISTENCE OF SERVICE AUTOMATION AND HUMAN LABOR IN METRO MANILA IN THE FOD AND BEVERAGE SECTOR OF TOURISM INDUSTRY

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DATE OF DEFENSE: SEPTEMBER 14, 2019

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ISABEL D. SEBULLEN, PH.D

Note Hypothesis need to be revisited & clarified
↳ It impacts sampling & testing

SUMMARY OF MATRIX OF COMMENTS (REVISION TABLE)

PANEL	CHAPTER/SECTION	SUGGESTIONS/RECOMMENDATIONS	REVISIONS	REMARKS
DR. GONZALES	1	Indicate what layer of Automation is being looked to.		Done
	1	Define Automation in industry.		Done

Dr. Sebullen	1 / SOP	Add 4 SOP's	1.Is there a significant difference between service automation if food and beverage sector (front and back office) and human labor? 2. What are the effects of service automation and human labor in the tourism industry? 3. What are the advantages and disadvantages of service automation and human labor in the tourism industry 4. How automation will affect the future jobs after 10 years.	Done
	1	Focus on one specific sector		
		Used American English		Done
Dr. GONZALES	TITLE	Omit "Empirical Analysis"	Empirical Analysis of the Coexistence of service automation and human labor in Metro Manila in the Food and Beverage Sector of Tourism Industry	

Abstract

Title: **THE COEXISTENCE OF SERVICE AUTOMATION AND HUMAN LABOR IN METRO MANILA IN THE FAST-FOOD CHAIN INDUSTRY**

Researcher **: Justine Mariella T. Abrigo**

Adviser **: Dr. Ma. Pagasa Nanette Rotairo**

Degree **: MASTER IN INTERNATIONAL TOURISM MANAGEMENT**

Year **: 2021**

The study examined and analyzed the coexistence of service automation and human labor around Metro Manila, especially in the fast-food chain of the tourism industry.

Despite the tremendous advancements in service automation, research on service automation is still limited as of today, but that doesn't stop researcher from pursuing this study. This paper explains the potential and existing situation of the tourism and hospitality industries, particularly guests and employees, adopting service automation.

Determined the antecedents: demographic profile, effects of service automation, and perceptions of consumers, industry, and government-related to the tourism industry. The implications and impact will broaden the knowledge of higher institutions, education, and the government in developing intensive training, support, and new policies that will sustain the transitions in service automation intervention.

The study used a descriptive research design in which it described the phenomena that happened in the study. The method makes use of both qualitative and quantitative methods. Employees and guests were chosen at random and taken to the Top 10 food establishments in Metro Manila. The respondents provide their perceptions regarding the importance and their level of acceptance of both service automation and human labor. This study is regarded as the first step in continuing development in terms of services provided by the food and beverage industry.

The study focused on the Top 10 food and beverage establishments of the tourism industry around Metro Manila. A total of 400 respondents participated in the study. Findings reveal that service automation and human labor have significant differences that may benefit and have a huge impact on the tourism industry and expound the knowledge of the importance of this matter. By fully adopting automation, it may help the economy, industry, and community grow and will deliver great experiences as well as convenience to the guests/guests.

The study also explains what service automation all is about, with the coexistence of human labor in food and beverage establishments. From its meaning to the level of acceptance of the respondents, it only shows that people are slowly adopting service

automation at almost the same rate as human labor, which is given by data in this study. The majority of the articles in this study focus on service automation and its impact on the industry and people. How does service automation change the whole idea of service? It also provides insights into what the scenario will be in the coming years when service automation is fully adopted by the aforementioned industry. These article studies assist the researcher in ensuring that the study is valid, as well as the data gathered.

Everyone is still unsure about what the future holds when it comes to service automation, but one thing is for sure. Change is inevitable. Also, based on the articles and data gathered, we can slowly adapt service automation. In exchange, fast food restaurants should provide new training for their employees to improve their ability and capacity as employees, in collaboration with the government. The government can also create more opportunities and jobs for those who will be impacted by service automation. Institutions like states or universities should have a new curriculum in order to catch up with the advancements of this era.

Furthermore, with the guidance and new policies provided by the government and private sectors in the future, humans will experience job transitions or shifts, as well as other new opportunities that can help them sustain their lifestyles. The researcher expounds on how people accept the undeniable changes occurring in the said industry.

Keywords: *Service automation, human labor, tourism industry*

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Her relatives, for all the moral support, love, encouragement of pursuing his chosen career and financial support as well.

Most of all her beloved parent Mrs. Jean Abrigo, her sibling Jeanne Michelle Abrigo for giving her unselfish and untiring love, for all the moral support and encouragement of pursuing her chosen career and financial support as well; and

Above all, the **Almighty God**, the truth, for giving her life, for giving answers to her prayers, and all the blessings, knowledge, and wisdom she had bestowed upon him. This piece of work will not be possible and could not ever be done without you.

JUSTINE MARIELLA ABRIGO

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PROBLEM AND ITS BACKGROUND

THE COEXISTENCE OF SERVICE AUTOMATION AND HUMAN LABOR IN METRO MANILA IN THE FAST-FOOD CHAIN INDUSTRY

Introduction

Tourism is a vast industry that has various branches. To achieve sustainable tourism, according to the World Tourism Organization or UNWTO, means ″to maximize benefits such as job creation, foreign exchange earnings, and new infrastructure while safeguarding cultural heritage and living culture and minimizing negative environmental and social impacts, especially of mass tourism.″ In today's era, tourism plays a big role in one's country's economy through different sectors (accommodation, adventure/recreation, attractions, events and conferences, food & beverages, tourism services, transportation, and travel trade), that generate income and create jobs that will ensure the welfare of the community. According to the Tourism Board of Promotion (TPB, 2018), employment in the tourism industry is 1.8% higher than the previous year (5.3 million) and it is now 5.4 million.

Technology in today's generation plays a vital role in tourism that incorporates fast-paced innovation. It also offers automation, which will be a big help in our society. Moreover, automation is designed to build and implement automatic machines by which

a procedure or process is accomplished without human intervention. The use of automation provides high-quality and efficient operations in all economic sectors, especially in the tourism industry. Thus, both sides will benefit from advances in communication, reservation, and guest service systems.

Service automation is one of the main technologies that is now used by the industry. Under this, there is fixed automation, which is a system that has fixed steps for processing or assembling products. Coordination and integration of many operations into one piece of equipment simplifies a complex series of tasks, and flexible automation performs multiple or a variety of tasks without being reprogrammed from time to time (Britannica, 2019). This study aims to explore the fixed and flexible automation involved in food and beverages around Metro Manila.

(Encyclopaedia Britannica, 2019).

Figure 1. Automated Restaurant

(Eatsa, San Francisco, USA)

Source: Eatsa Wikipedia

Eatsa was the first automated restaurant in San Francisco, USA. This is a fully automated restaurant that executes a self-service campaign that offers healthy salad bowls with different combinations to match the consumer's taste. It starts by swiping their cards (credit or debit) on a touch-screen kiosk. Then, they can choose and build their preferred salad bowl. In addition, there is also information about nutritional data, like carbohydrates and calorie levels, provided for their chosen meal, since this is a generation of people who are conscious about their health. (Marks, 2016).

Once done with their meal, they can check the big board to find out their assigned Horn & Haradart's like window compartment and double-tap the door to get their meal. Today's era has been flashier with a video screen that entertains the customer by playing fun colors and cool animation (Marks, 2016 & Oberst, 2015).

Automation has outlived its usefulness. It is not only a for customer service and food distribution method but also a cooking process. This type of advancement in 3D printing paved the way for food 3D printing (Prisco,2014). Food "ink" cartridges containing sliced components are used to create edible meals. This type of technology enables not only the creation of sophisticated designs but also the customization of meals for customers depending on their nutritional requirements. 3D printing, coffee (Fowler, 2017), mixed beverages (Sloan, 2014), and burgers are among examples (Momentum Machines, 2016).

Full-service automation is now possible thanks to technological advancements. With the integration and advancement, completely automated restaurants and some enterprises that provide service automation could be created. This is akin to a Japanese Henn-na hotel that is automated. This entire automation encompasses the restaurant's front and back offices, where clients will use self-service to place their orders. Furthermore, various automation technologies will be used to serve the meals (e.g., roller coasters, conveyors, automated ovens, cutting and forming machines, sortation equipment, and other machines). Restaurants, on the other hand, require a human workforce for the whole operation, such as cooking meals, washing dishes, or accepting payment in terms of cash (Ivanov, Craigwebster, Berezina, 2017). Some of the activities of service automation fro front house are the ff: kiosks, Mobile App ordering system, Digital menu displays, chatbot and conveyor belt while for the back house service automation serves as machines, conveyors and etc.

Service automation plays a significant part in theme and amusement parks. Tickets are available at kiosks or online. Automated rides, LED screens, and other examples of automation can be found throughout the area. This type of automation is similar to that seen in bus and train stations in the transportation sector (Ivanov, Craigwebster, and Berezina, 2017).

The Philippines is now slowly adapting to automation in different sectors of the tourism industry. One good example is Genki Sushi Philippines, an automated restaurant from Japan located on the 2nd level of the Bonifacio Stopover Pavilion, 31st cor. Rizal Drive, Bonifacio Global City. Genki Sushi Philippines (The Original and Authentic

Kaiten Sushi from Japan) was known for its food being served through a conveyer belt and the entire order process is automated (Diaz, 2019).

In the Philippines, service automation is not yet visible in many food establishments, though we can tell that some fast-food establishments, such as Mc Donald's in Mc Kinley, Taguig, is gradually transforming into service automation, beginning with their kiosks, where people can order through a large touch screen and simply pay at the counter.

Service automation will have some advantages for the country. Because it establishes standards and competitiveness for fast-food restaurants in other countries. The Philippines must consider that, in order to set a standard as a tourist attraction, it may be necessary to welcome changes and modern technologies such as service automation.

Automation has been mainly used by customers as it provides convenience and has become one of the fastest innovations that get a favorable reaction from the end-user. However, the sustainability of human labor in the country still has not received much attention. The purpose of this paper is to provide an analysis of the coexistence of service automation and human labor, specifically the importance and difference between both in the food and beverage industry. Sustainable tourism in both human labor and automation (ISA, 2019). Lastly, the level of acceptance of both parties.

Background of the Study

Over the years, tourism has been one of the fastest sectors in the world in terms of economic impact. Continuous growth and an increase in diversification are some of the reasons why. The opportunity or business that tourism can offer today can be equally or even surpasses other industries like automobiles and oil exports that offer millions of direct income to the economy and its workforce, particularly for young people and women, and a diversity of opportunities for all entrepreneurs (Frechtling 2013).

Figure 2. UNWTO- Static for Economic Contribution of Tourism Industry (2018)

Since tourism has a big impact on the country as of this date, other sectors, such as transportation, accommodation, attractions, and entertainment, should already go along with the fast-paced innovation that is happening around the world. Providing excellent customer service and exceeding customers' expectations are the major focus of this advancement.

Automation has arrived and is here to stay. In recent years, the world has witnessed significant progress in artificial intelligence (AI), technologies, robotics, and service automation. It has been used in giving services, processing products and the like. Automation existed long ago. It started with a simple technology in the tourism industry. (ISA, 2019).

As far back as the year 1902, the New York and Philly restaurant chain called Automat served a piece of apple pie and pre-packed "home-cooked" meals which were delivered through patented vending machines (Marks, 2016). And now history is repeating itself, as we are now living in a modern era that has advanced technologies that make things better and more efficient for everyone.

A fast food restaurant, also known as a quick service restaurant (QSR) in the industry, is a type of restaurant that serves fast food cuisine with little table service.

Fast food restaurants typically serve food that is part of a "meat-sweet diet," with a limited menu, cooked in bulk in advance and kept hot, finished and packaged to order, and usually available for takeout, though seating may be provided.

Fast food restaurants are typically part of a restaurant chain or franchise operation that distributes standardized ingredients and/or partially prepared foods and supplies to each restaurant via controlled supply channels. Merriam–Webster recognized the term "fast food" in a dictionary in 1951 (Wikepedia, 2020).

The Philippines' fast-food restaurants have been exposed to service automation as the food service market is growing. In line with this, service automation had a big impact

and has strong economic performance in recent years, which drives more to continuously evolve with automation. In addition, the increase in establishments is due to the rise in frequency that people tend to eat out, and the increase in busy lifestyles, together with the convenience and the availability of international brands in the Philippine fast food industry.

As claimed by Mordor Intelligence "Philippines Foodservice Market-Growth, Trends and Forecasts (2020-2025), fast food restaurants who are engaged in service automation dominate the market as it grows at a faster pace. It is more appealing with competitive prices and a wide variety of foods among chain restaurants that mass consumers were looking for.

In late 2018, McDonald's, one of the giant fast-food restaurants in the Philippines, started using service automation, specifically self-ordering kiosks and digital technology for cashless payment. As stated by Jueggo-reporter in her article "McDonald's Philippines goes high-tech, high-touch" Does this mean machines/service automation will replace human labor?

Conversely, Margot Torres, McDonald's Philippines managing director, says they are imposing a new store format, soon to be called NxtGen, where they will increase customer capacity, so for them to serve all the customers, they need to be prepared with their production staff.

Metro Manila is the setting for the study. It is the center of business, entertainment, and education, culture, arts, commerce, industry, and tourism. The

indigenous people of the Manila area were originally called Tagalogs, together with other native ethnic groups of the country, later inhabiting the region due to migration. Though it is the smallest region in the country, it is still composed of 12.8 million and counting as per the 2015 census. Since, Metro Manila is composed of 16 urban cities, which means a lot of new modern establishments will rise and will give more validation to the study as modernization comes first in urban areas. In addition, most government offices, private and public sectors are in Metro Manila. Lastly, hitting the top food and beverage establishments are all located in Metro Manila. (Encyclopedia Britannica Web, nd)

Figure 3. Map of Metro Manila

Cc: https://manilaopportunity.weebly.com/maps--location.html

According to Sigmund Freud, "food is one of the basic needs of humans to survive". This is where food and establishments started and until now it is booming, giving people employment that accounts for 50% of jobs and 44% of new openings and is used as one tool for economic growth (Tourism Resources, 2018). Below are the top food and beverage establishments around Metro Manila.

Table 1. Table of Top 10 Fast Food Restaurants around Metro Manila

TOP 10 BEST FAST-FOOD RESTAURANTS (Yoorekka, 2018)	
Mc Donald's	26th St. BGC Taguig
KFC	Salcedo Village, 109 L.P. Leviste Street, Makati
Jollibee	Sheridan, Mandaluyong, Metro Manila
Wendy's	Ortigas, Pasig City
Chowking	Agora Parking Plaza, N. Domingo Street, San Juan City
Goldilocks	SM Mall Of Asia, J.W. Diokno Blvd, Pasay

Mang Inasal	G/F Festival Mall Filinvest, Alabang
Pizza Hut	G/F SM City Bicutan, Dona Soledad Ave., Parañaque
Greenwhich	Trinoma, Quezon City
Bon Chon	Gov. Pascual Ave, Malabon

Statement of the Problem:

The study aimed to explore and analyze the coexistence of service automation and human labor in the field of fast-food restaurants. Considering the importance of different sectors, specifically in the food and beverage sector, empirical evidence will help gather necessary data by using senses through indirect and direct observation and documentation around Metro Manila. Particularly, this study sought to answer the following questions:

1. Is there a significant difference between service automation and human labor in the food and beverage sector?
2. What is the level of acceptance of service automation and human labor in terms of consumer perspective?

   2.1 Efficiency

   2.2 Consistency of standard quality services & products

   2.3 Time Phasing

   2.4 Small Capitalization

   2.5 Resolving issues and conflicts in dealing with the customers.

3. What are the effects of service automation and human labor in the tourism industry (fast- food chain)?
4. What are the advantages and disadvantages of service automation and human labor in the tourism industry (fast food chain)?
5. How automation will affect future jobs after 10 years?

Objectives of the Study

Tourism is a huge industry, and the main act is to provide service. The primary objective of this study is to analyze the level of importance of the coexistence of both service automation and human labor in the tourism industry while considering the multitude of factors that affect the industry. Since this study is determined by empirical research, gathering of knowledge/data through the senses can be easily executed. To seek the importance and perception of the performance of automation and human labor in the said industry. The research will strive to achieve the following objectives:

1. To establish the significant difference between service automation and human labor in the food and beverage sector (front and back office);
2. To identify the level of acceptance of service automation and human labor in terms of consumer perspective like efficiency, consistency of standard quality services & products, time phasing, small capitalization and resolving issues or conflicts in dealing with the customers;

3. To recognize the effects of service automation and human labor in the tourism industry;

4.To discover the advantages and disadvantages of service automation and human labor in the tourism industry; and

5. To conservatively forecast how automation will affect future jobs after 10 years.

Hypothesis

1. There's no significant difference between the existence of both service automation and human work in the food service sector (front and back office) when participants are grouped according to age, civil status, gender, highest educational attainment, employment status, and classification, ie., internal (officers or workers) & internal (guests).

2. There’s no significant difference in terms of the level of acceptance of service automation and human labor when participants are grouped according to age, civil status, gender, highest educational attainment, employment status, and classification, ie., internal (officers or workers) & internal (guests).

3. There's no significant difference between the advantages and disadvantages of the coexistence of service automation and human labor in the food and beverage industry.

Significance of the Study

Tourism plays an important role in one's country and as we go along, this modern generation established a wide range of advanced technologies that we are now using. The Philippines has slowly adapted service automation and most of the establishments are using this as these are beneficial to both company and guests. But still, seeking for human labor as there are task/s that service automation can't execute that needs human assistance or only human can do.

Knowing that service automation and human labor play a vital role in the industry, this should be sustained in the long run because service automation might replace most of the jobs of humans in the next decade. However, with proper planning and guidance by the concerning bodies (government, non-government organizations & private sectors) it will be prevented and will balance the transitions of tasks.

By slowly adapting to the advancement of technologies, service automation will provide benefits to everyone. Most specifically, to the establishment and the consumer, this will result in more appreciation for automation. In contrast, human will still be the most flexible worker and has compassion in their job (Webster, Ivanov, 2017).

Tourism Organizations / Affiliated Orgs. such as NGOs and private organizations (DOT, TPB, DOLE, 9 SECTORS OF TOURISM, CHED, DepEd) can help to continuously sustain the automation and human labor in developing alternative jobs and providing assistance and income while people are looking for their new jobs. In relation, we need to be ready for what automation can do in the near future.

Future Researchers can extend existing knowledge about automation and human laborer's roles, importance and the difference between service automation and human labor that will contribute to the tourism industry. Through this, they can construct new ideas which will serve as a future reference for the researchers (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

Scope and Limitations

The scope of the study is as follows: the research was carried out in various areas throughout Metro Manila. To conduct the survey, the top ten food and beverage sectors in the tourism industry were considered. Personal search was done to find respondents. These respondents have firsthand experience in the field of tourism and the hospitality industry, such as guests and workers. They can provide information and will contribute to this study.

The study is limited only in identifying the demographic profile of the participants according to age, civil status, sex, highest educational attainment, employment status, classification and determining the level of acceptance in terms of efficiency, consistency of quality, time phasing, capital and resolving of Issues/ conflicts, convenience and their opinion with service automation after 10 years in food and beverage under tourism industry.

The researchers could not cover all the fast-food chains in Metro Manila. As a result, the study was limited to 400 respondents from the top ten fast-food chains. The

researcher did not look at any gender differences. As a result, the respondents were all from different cities around Metro Manila.

Definition of Terms:

These terms will be utilized as the focal point of the investigation study theoretically and operationally.

Tourism- According to UNWTO "*Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes."*

Automation- It's a system/method that operates by a machine or electronic devices. This is automatically operated / functions without human interruption.

Human Laborers- It's a representation of humans by exerting effort physically and mentally to perform their assigned task/s.

Coexistence- Existing or living in the same place or time.

Food and Beverages Sector- This sector involved food and beverage products that execute operations and provide service to a specific location.

Efficiency- the proportion of useful work done by a machine or process to total energy expended or heat taken in.

Tourism Organization/s- these are the organizations (international, non-international, and non- governmental) that are responsible for continuously developing and manage tourism in one's country.

Acronym:

NGO- Non- Government Organization

DOT- Department of Tourism

TPB- Tourism Promotion Board

DOLE- Department of Labor of Employment

Dep Ed- Department of Education

CHED- Commission of Higher Education

CHAPTER 2

REVIEW OF RELATED LITERATURE AND STUDIES

In this chapter, foreign and local literature and studies that were found to be relevant to this research endeavor were presented. All resource materials gathered were purposed to support, explore and explain the variables under the study, particularly the coexistence of service automation and human labor in the tourism industry. Due to the lack of literature available in the local setting, the researchers utilized mostly foreign sources and studies to explain the constructs held as the main points of this investigation.

Foreign Studies

The study evolves on the adoption of robots and service automation by tourism and hospitality companies (Ivanov, Webster & Berezina, 2017). Researchers took the risk of doing this study despite the huge advancements in automation and social robotics. The research on automation and robotics has still been limited as of today. This explores the potential and current state of adapting service automation and robots by tourism and hospitality companies and, most especially, tourists. This paper specifically focuses on service automation in different sectors/companies of the tourism and hospitality industry. Here are the following sectors: hotels, events, restaurants, theme and amusement parks, car rental companies, airports, travel agencies, and tourist information centers on how these companies/sectors adapt to robots and service automation.

According to the study, entitled "Adaptation of Robots, Artificial Intelligence and service automation by Travel, Tourism and Hospitality Companies-A Cost-Benefit Analysis (Webster, Ivanov, 2017). There's a great degree of limitation in the research efforts on robots in tourism, even with the enormous movement in social robotics. This paper will partly bridge this gap. The value, welfare, and advantages of the adoption of RAISA by travel, tourism, and hospitality companies (hotels, restaurants, event organizers, theme and amusement parks, airports, car rental companies, travel agencies, tourist information centers, museums, art galleries, and others) will be investigated. In particular, the paper focuses on how RAISA impacts the competitiveness, quality of service, operations expense, the layout of hospitality facilities, processes and standards of service operations, and probes the conditions under which the adaption of RAISA would be of benefit to the company (Webster, Ivanov, 2017).

The study recognizes that the adaption of RAISA is reliant on labor and technology costs, the readiness of customers and openness to being served by robots, cultural characteristics of both customers and service providers, and the technological characteristics of RAISA solutions, among other factors. The study focuses on the basic challenges that tourist companies will face once RAISA is introduced (e.g. associated with resistance to change, redesigning of service procedures) and offers recommendations to both robot manufacturers and tourism companies on how to face these challenges.

In summary, this study shares the body of information by pointing out possible benefits and expenses associated with robot adaptation, service automation, and artificial

intelligence in tourism and hospitality businesses. It illustrates what needs to be considered before settling on whether to adopt or not adopt the new technology, given that the benefits and costs are very diverse (Webster, Ivanov, 2017).

In considering RAISA for a company, it is unwise to depend on hype, premonitions, and technophobia. It is very important to consider how people view and accept the introduction of RAISA in tourism, travel and hospitality companies for future research reference (Webster, Ivanov, 2017).

What's more important is that upcoming research should investigate how RAISA affects the public's mind in accepting new technologies. The public that will be using RAISA services will have to be surveyed to learn about what they would like and would not like to see in terms of the incorporation of RAISA technologies (Webster, Ivanov, 2017).

Consumers may reject certain types of technologies or accept other technologies for that matter. RAISA industries will need to learn about consumers, as their decision to embrace or reject the technology will create obstructions to using the technology. Research also needs to investigate if the technology will match their operations. How employees react to the new technology may be key in considering the adaptation.

However, a look at corporate culture and corporate identity will have to be investigated. A full understanding of employee attitudes towards RAISA and how RAISA fits into the corporate culture will teach a great deal with regards to how companies can incorporate new technologies into their operations while avoiding

employee resistance and enhancing, rather than undermining, corporate culture/values (Webster, Ivanov, 2017).

To end, RAISA, as discussed, is currently a giant step in technology being executed in industries. While the incorporation of some earlier RAISA technologies such as the ATM may have radically changed the way customers experience the banking industry and changed the workforce of banking, other technologies such as the massage chair and vending machines may not have had such a major impact upon other industries. We should expect massive change in the whole industry, potentially dividing the hotel industry into those in which RAISA is mandatory and others in which RAISA is a peripheral technological support system, the majority hidden from consumers if human labor in travel and tourism is replaced.

While we do not know what the future holds, RAISA in travel, tourism, and hospitality will change a great deal about the industry. That includes customer service, how human employees are utilized, and how corporate cultures will be affected. Ultimately, today is the best time to learn about how employers, employees, and customers see these advancements that may be helpful, efficient, or unfriendly to everyone.

According to this article, Travel and Tourism: Automation will be the industry's poster boy, written by Priyanka Ganwani (Feb.2017). In India, the tourism and hospitality industry is embracing automation to upgrade the performance of employees and, most especially, the customers' experience.

The hospitality, travel and tourism industries are always driven by tourists or customer engagement and experience. They have a distinct understanding of using advanced technologies/tools to automate their processes. The India Brand Equity Foundation has published a report projecting that the GDP contribution of this sector (hospitality, travel and tourism) is expected to grow by 7.2 percent yearly through the years 2015-2025. This means it will reach a massive USD 160.2 billion by 2026. Along with this, their aviation industry indicates total freight traffic reached 4.14 million tons, showing growth at a CAGR of 7.27 percent between the years 2016-2023, Meaning to say, India is one of the five fastest-growing aviation markets globally, associated with around 275 million new passengers.

As stated by Amit Mandha, "Travel and tourism are increasingly becoming a DIY platform. We will have to empower customers to do a lot of self-service".

The article noted How Automation Is Transforming the Hospitality Industry by Mitankur (Mit) Majumbar (April 2016). It connotes in the article that automation is here to stay. From hence forward, it is what we do with automation that matters. That includes supporting advanced technologies to make them more convenient for customers.

According to the article, automation has been living for about three thousand decades up until now. With the advancement of everything in different aspects, so much competition arises as well in hospitality, travel, and tourism and the need for them to

provide rich, unique, and personalized experiences for their guests. Customer experience is the main thing for hoteliers. They want to provide the best experience to gain loyal customers. And based on studies, it shows that automation and robots are not just for marketing aspects, but they show that whenever the customer enjoys the service, they'll become more loyal to the brand. Automation is now using artificial intelligence to profoundly change the reality of the workforce and rapidly transform jobs that were once impossible to change (Mitankur (Mit) Majumbar, April 2016).

Fast food restaurants are now taking big steps in considering automation or artificial intelligence and embracing the reality of the fast phasing development of technologies. Consumers will experience extravagant, mesmerizing, and overwhelming feelings in dealing with these innovations. Going forward, the staff will need to create a more memorable and unique experience together with these innovations. (Mitankur (Mit) Majumbar, April 2016).

According to Gravity Flow, a website on which they wrote an article about "How Automated Workflow Tools Can Help Travel" (GravityFlow, Dec. 2017). The article states that travel agencies are facing a lot of pressure to meet the demands of their customers and how to sustain those demands. It is now one of the fastest-growing industries in the travel sector. Tourists/travelers are considering booking or making travel plans online. This is much more convenient and efficient on their end. At the same time, since we are in a busy generation, it saves time because we don't need more time for doing bookings. With just one click, you can now book your preferred accommodation or plane tickets.

While travelers can easily book on their own, many still depend on travel agencies for reasons of more complex itineraries. Like booking connecting flights, traveling to multiple countries, etc. Mistakes are inevitable in travel agency-most especially in bills, payments, and confirmations, will lead to dissatisfaction with the customer and, at the same time, potential financial loss for the agency itself, vice-versa (GravityFlow, Dec. 2017).

That's why all travel agencies need to learn and understand the workflows by using automation that will save energy, time and mistakes that will cause harm to the business. Workflow automation can help the whole management back-office issues that plague travel agencies in today's era. Also, workflow automation can help with the problems faced by customers. Travel agencies may fall behind with other advanced technological solutions without automation. This will provide responsiveness that manual processes simply can't (GravityFlow, Dec. 2017).

Work by an Institution The McKinsey Global Institute (MGI) took the risk of seeking a study to develop a deeper understanding of the world of evolving automation. The study is entitled "Jobs Lost, Jobs Gained: Workforce Transitions in the Time of Automation" (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017). According to the study, automation has been living for a long time and its fears about transforming the workplace and affecting the employment rate way back in centuries. And now, with the advancement of technologies, automation and artificial intelligence have come out and adoption could be delivered.

This report goes beyond by examining potential sources of new labor demands that will create jobs for humans as automation will disrupt some of the potential market labor. They examine how work could be automated in the year 2030, and at the same time, new job opportunities will be created. The study has the following key findings: Automation technologies, including robotics and artificial intelligence, will provide important benefits for businesses, customers/users, and the economy. This will generate great growth in income for the whole economy. The extent to which automation will displace human laborers depends on the pace of their adaption and development of automation. The same goes for economic growth and the increase in demand for work. Even though it will cause a downline for some jobs, new jobs will be created that do not exist today (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

MGI built this report to assess automation and its impact on the workforce. They assess the types and number of occupations that will be displaced by automation. The result shows that there will be lots of shifting occupations and creating jobs that do not exist in the years ahead. The impact of these more skilled workers and high wages. This study covers only 46 countries/models. Their findings suggest that a lot of future demand for labor will create demand as well for millions of jobs by 2030. (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

According to the study, entitled "ASEAN IN TRANSFORMATION-The Future Jobs at Risk of Automation (Chang & Huynh, 2016). The world is now facing the fast acceleration of the advancement of technologies and their implementation. The entire sector, even the tourism industry, has been accommodating this phenomenon. These

innovations rendered several occupations redundant for humans. expect that in the near future, these jobs will be eliminated. Concurrently, some jobs will be in high demand and some occupations will change the skills they normally ask for.

This study foresees how automation will affect future jobs in 10 years. They used 5 ASEAN countries, namely: Cambodia, Indonesia, Philippines, Thailand, and Vietnam, to be the main focus of the study. They created 3 findings and a conclusion at the end of the study.

After studying the main jobs in each country, the distribution of employment by education and skill level, they came up with the findings that nearly 3 out of 5 jobs are at high risk of automation. They forecasted it based on the labor market structures of the countries. Among the 5-ASEAN countries, Thailand is shown to be the one that shares jobs with the highest probability of automation. It is lowest at 44 percent and the highest is Vietnam with 70 percent. The three countries (Philippines, Cambodia, and Indonesia) share 49 percent, 57 percent, and 59 percent respectively. Key Finding 2: Technologies will shape the future of manufacturing and services. The great potential of substation technologies varies widely across all sectors. For the ASEAN-5 countries, the key industries for automation are hotels and restaurants with 80.7 percent, wholesale and retail trade with 77.5 percent, construction with 70.8 percent and manufacturing with 60.1 percent. Nevertheless, the risk of automation will still depend on the structure of the specific industry in each country and the skill level that they will require in that sector. Key Finding 3: Workers with less education, workers in lower-wage occupations and women are more likely to be impacted by automation. This only means that with higher

education, people tend to get higher wages, while women are more likely to be employed than men in high-risk automation.

And to end the study, Chang and Huynh came up with the conclusion that automation has considerable opportunities and threats in each country. Low-wage jobs and workers with low educational backgrounds are most prone to facing high threats from automation. Other studies show that automation will most likely be high in developing countries since they have more jobs that require fewer skills but can easily be replaced by automation. The government, education and training should be ready to prepare for the impact of automation in the near future.

Based on the study entitled "Automation of management processes" (Halemba & Siguencia, 2019), the internet makes everything possible and easier these days. For the past years, the internet and technologies have been tying up to develop more services for people. With this, the tourism industry has been greatly affected because of new technologies like artificial intelligence (AI) and service automation. This has been the key to a service-related industry that will definitely help boost not just the industry but the economy as well.

In line with these happenings, fleeting growth is inevitable due to competition that needs to have a corresponding solution. It varies depending on the establishment, but one thing is for sure, they will rely on the advancement of technologies to cope with all of these (Halemba & Siguencia, 2019).

On the authority of the study, entitled "New Technologies for Tourist Services Market Development" (Koreneva & Shpyrnya, 2020), it claims that tourism nowadays is diligently after new technologies, specifically service automation, that will serve different levels of complications. Tourism in modern-day foresees that new technologies are the key ahead not just today but in the future. It was concluded that modern technologies are the solutions in terms of the products of tourism.

With this, a lot of activities will be easier for the guests/tourists. New technologies are simply the way to go these days (Koreneva & Shpyrnya, 2020).

The study explains "Ultimate Transformation: technologies disrupt the travel, tourism and hospitality industries?" (Ivanov,2019). Every generation has come to face a different generation of technologies. It started way back in the 19th century with the train invented by Richard Trevithick, a British engineer born in Cornwall (McNarra, 2017). This was the start of the tourist groups being able to organize the first trip. In the second half of the 20th century, cars were introduced and jet planes came into the picture in the second half of the said century. This helps more people to have longer trips that are affordable and accessible for middle-class people. And now, the 20th century is facing a whole new generation of advanced technologies from the internet, websites, social media, and mobile applications (Beckendorff, Sheldon, & Fesenmaier, 2014). The start of where tourism has become more powerful and is facing a new revolution. As we go along, we are now entering the world of the robotic era (Ivanov,2016).

In line with the article, Tourist Behavior Analysis Based on Digital Pattern of Life-An Approach and Case Study (St. Petersburg Institute for Informatics and

Automation of the Russian Academy of Sciences, 2020), this explains the rapid growth of the tourism industry together with the IT technologies that have greatly affected the situation throughout the years. The behavior of the guests/tourists towards the changes in terms of services of the industry. With more advanced technologies, the services differ in a lot of aspects. The behavior of people changes depending on the level of acceptance. The analysis of the article goes to the satisfaction of the guests/tourists.

The advancement of robotics, artificial intelligence, and service automation technologies simply raises the bar. (Bhaumik, 2018; Miller, 2017; Russell & Norvig, 2016). This allows companies in different sectors to consider using RAISA for multiple benefits they can enjoy. The following are some benefits the travel and tourism industry will benefit from: Streamline operations, decrease costs, consistency, eliminate costs, and increase efficiency and increase production, which will result in huge changes in companies/establishments' operations (Goldfarb, Agrawal & Gans, 2018; Davenfort, 2018; Mak, 2015 & et al., 2017). In terms of the travel & tourism and hospitality industries. The self-service technologies (e.g. check-in & out or even in information kiosks in airlines and train stations, automated scanners and baggage drop off counters at airports, for restaurants, the famous conveyer belt which demonstrates the self-ordering kiosks) have been executed way back due to early adaptation of automation (Ivanov, 2016). They are now widely used and less expensive than robots. Self-service technologies help customers to gain ease and convenience when in use (Susskind & Curry, 2016).

The study expounds on the body of knowledge we know about automation. By determining the impacts of robotics, artificial intelligence, and service automation (RAISA) on the travel, tourism, and hospitality industries. From their operations up to the whole management-human resources, financial management, supply chain, marketing, facilities and design. From a managerial aspect, not all processor tasks should be automated and be automated. It will still depend on the cost and the needs of the company. By doing so, employees should upgrade their skills and stop complaining that they will be replaced by RAISA. Though lessening of employment is inevitable, companies should provide training, online courses, or university degrees (e.g. masters, doctoral) for alternate solutions (Ivanov, 2016).

As stated by Khareva & Voronova in their study entitled, "Trends in Development of Technologies in the Hospitality Business in the Conditions of Economic Digitalization", it mainly focuses on the gradual development of modern technologies in the industry. With all the changes happening in a short period of time, automation in the hospitality industry improves the quality given to a guest/s. As they go along with the study, one of their main goals was to achieve is still how to understand their customer's behavior and how to cope with providing satisfaction to each guest/s (Khareva & Voronova, 2020).

The implications of RAISA go way beyond the tourism and hospitality industry itself. Higher education institutions would need to consider the amendment of the curricula they are providing for tourism and hospitality programs and include separate RAISA modules for students so they can fully understand and know what skills will be needed when they are working in a high-technological tourism industry soon. Therefore,

higher education, companies in the tourism industry, and the hospitality industry should be ready for this as we are now living in the new and advanced world of technology (Ivanov, 2016).

The study incorporates that digitalization and automation are already booming in the tourism sector, raising their roles and questions about how they have an impact on the industry and the holiday experiences of tourists. This study is entitled, "R-Tourism: Introducing the Potential Impact of Robotics and Service Automation on Tourism". This explains the potential impact given by robotics, artificial intelligence and automation on the industry. Apart from providing analysis for R-tourism applications, this study has a strong focus as well on how to incorporate this associated area into the mainstream of tourism research.

The concept of Henn Na Hotel in Japan-the first automated and robotic hotel that commits to a whole new state-of-the-art technology to get efficiency, comfort, and ease for the guests. This hotel is mainly staffed by robots. The reception area is staffed by 3 multi-lingual robots, responsible for assisting guests, including greeting and checking-in to the hotel. They also have porter robots that carry the luggage to the rooms and store the luggage of the guests. As we approach 2020, the development of robotics and artificial intelligence in services is involved in a debate. Could the efficiency, competitiveness and productivity of these technologies enable a 'dehumanization effect'? The answer is' no'. This is not just about the future; the future is already present (Alexis, 2017).

This study addresses the implications of automation in different aspects of tourism.

Tourism research in the development and implementation of robotics and artificial intelligence is still limited and experimental at this stage (Navarro et al., 2015). Nonetheless, tourism has grown to adapt to these changes. Embracing rather than resisting, the great potential of R-tourism to inspire more researchers to engage themselves in interdisciplinary areas of their activities (Alexis 2017).

According to this article, "The three technology trends will change the way you travel", which is part of the article Industry Strategy Meeting (Misrahi, 2018). In this generation, people tend to travel more than before. With all the whizzing through the air, traveling across countries, travelers have been more demanding than ever. They expect authenticity, speed, seamlessness, personalization and security (Misrahi, 2018).

To meet these high expectations of travelers, advanced technology is a must. It has been a part of our daily lives; it makes our lives more efficient and changes how we work and behave. Now that we are entering the industrial revolution, we witness how the mobile shift to digital boarding passes (Misrahi, 2018).

The following are the megatrends in technology and the tourism industry, specifically in the travel sector, which could transform the industry:

*Done for You (DFY)-this simply means how you do it yourself more than how much is done for you by automation. As automation developed, lots of technologies have been created and are no longer limited to a certain physical task. Automation is now existing on the back end of travel, from inventory to reservations and staffing to transactions. In short, automation is part of the whole system of the travel sector.

These technologies have a great impact on how they transform society even more. In addition, we need to consider the benefits and the downsides, so they can easily determine the latter. For instance, there will be certain tasks that are automated. How will the industry identify and provide transitions for those workers who will be affected to new, quality jobs by retraining with different high-standard skills? (Misrahi, 2018).

More job opportunities will continue to be created even with the existence of automation.

* # Nofilter experiences-people tend to travel to experience real moments. Today, the travel industry is offering new trips, from expedition-style vessels to boutique agencies offering vacations, to space tourism. This will be operated by Virgin Galactic and will start by late 2018 (Misrahi, 2018).

Furthermore, there's VR that can recreate experiences at no cost. This is to showcase an experience in a 3D setup. The author believes VR will not replace travel. Rather, it will inspire more people to experience traveling around the world and, at the same time, it will give people the chance to discover places that no longer exist (Misrahi, 2018).

*Blockchain-or also known as crypto currency, is a system where information is stored in a system that allows sharing of information but with the security of the information. Aside from finance, this can be applied to different fields. One example is travel security, more specifically biometrics, in which people need to verify their identity. This will make a huge difference.

To sum up the article, travel and tourism will need to continue embracing and using technology to keep competitiveness and to achieve its objectives that will project growth for the industry. By using automation, it will provide an authentic, speedy, seamless, personalized, and secure experience for all travelers around the world (Misrahi 2018).

In the Philippines, fast-food restaurants have been exposed to service automation as the food service market is growing. In line with this, service automation had a big impact and has strong economic performance in recent years, which drives more to continuously evolve with automation. In addition, the increase in establishments is due to the rise in frequency that people tend to eat out, and the increase in busy lifestyles, together with the convenience and the availability of international brands in the Philippine fast food industry.

As claimed by Mordor Intelligence "Philippines Foodservice Market-Growth, Trends and Forecasts (2020-2025), fast food restaurants who are engaged in service automation dominate the market as it grows at a faster pace. It’s more appealing with competitive prices and a wide variety of foods among chain restaurants that mass consumers were looking for.

According to an article entitled "The Benefits of Automation in the Food and Beverage Industry". It’s a well-known fact that the automation industry has helped the world innovate in vital sectors such as automotive, construction, healthcare, and many, many more. As modern technology carries industries to a whole new level, it’s no surprise that the food and beverage sector benefits from this as well. In a bigger picture,

we can group those benefits into four main factors: quality control, traceability, safety and efficiency.

Quality control is improved tremendously because it removes possible errors in processes and workers, such as food contamination since it lessens (if not eliminates) human and environmental contact. In addition, automation deploys appropriate temperature control and air compression systems, which contribute greatly to preserving food and ensuring quality all the way from production to consumption.

Traceability is a great asset when it comes to food production. Automation makes tracing strengths and weaknesses in food manufacturing a lot easier since everything is tracked by computers. Problems with production and health hazards are avoided before the problems even come in. Furthermore, data gathered from a certain season or duration can be used to improve overall production for the future.

Worker safety is essential. No matter how automated each process is in a certain industry, there is still a need for human intervention. Back in the day, a lot of problems could arise in food production, especially in those that require the operation of heavy equipment. Nowadays, those tasks can be performed through automation with just the touch of a button. This saves a lot in production costs, such as safety equipment and payables in healthcare in case of workplace incidents.

Efficiency multiplies greatly with the help of automation. A machine or computer can operate far better than manual labor, whether it’s in accuracy, quality, or overall performance. In most cases, the costs and time spent on pooling potential employees are

far more expensive than repairing a computer malfunction, and it is easier to prevent in the long run.

In conclusion, automation has greatly contributed to the growth of the food and beverage industry. Automation has made it possible to sustain the ever-growing needs of man for sustenance, which enables us to focus on other aspects of life as a whole (Nichols, 2018).

According to an article entitled "The Evolution of Automation in the Food Industry". For the past decades, we have seen how automation has bridged the gap between food supply and the ever-growing demand for sustenance, both in quantity and quality. From microwaveable dinner meals and canned goods to raw produce, there is no denying that automation plays a big role in ensuring that we have access to an adequate food supply without compromising food safety.

Nowadays, modern technology allows us to produce food that no one could have imagined in the earlier centuries. Food processing and packaging have undeniably come a long way, and the standards have never been raised higher before. Automation has taken place where human labor once was. A few examples are automated ovens, cutting and mixing machines, wrapping equipment, and so much more. In fact, it has become a necessity for food companies who plan on staying in the market for the long run.

Jobs in food processing are gradually shifting from humans to machines. However, the food industry can not be run by automation alone – it will always require

human intervention. Automation will not completely replace people but will improve worker skills so demands on the food supply are met (Breaux, Aug. 2018).

Based on the article entitled, "Best Fast Food Restaurants in the Philippines 2018", they have stated the top list of fast-food restaurants in the Metro. Since fast-food chains can be seen everywhere in the country, they serve us fast but delicious foods that are not expensive. Some of these fast foods have been operating for a long time that they have been a part of Filipino culture. Here are the top go-to spots based on their readers' choices. Listed here are from the top to the least. First, McDonald's, KFC, Jollibee, Wendy's, Chowking, Goldilocks, Mang Inasal, Pizza Hut, Greenwhich, Bon Chon. (Prado, July 2018).

According to an article entitled "Automation in the Food Industry: Past, Present and Future" (Breaux, 2018). If there's one industry that we can not live without, it is the food industry. Simply because people just have to eat every day. So, businesses like the food industry will consistently grow every year.

In a fast-growing industry. Most food processing companies are always looking for ways to improve their production efficiently. Sacrificing the quality of the product won't be the answer, but instead finding the correct automation that can help to produce good products and that suits perfectly factory automation. Whether it is in a plant or an actual food establishment (Breaux, 2018).

Today's food packaging and processing have been evolving. It has been different in a way that efficiency has been raised to a higher degree. Because of this, industry

decision-makers are being conscious of choosing automation to serve and meet customer demand/requirements. This means no stopping upgrading existing or new equipment that will help the food industry to continue giving customers good service. This might be expensive and the fixed base is costly but still considerable (Breaux, 2018).

In the modern era, with the new advanced automation of food processing and packaging plants. These include automated ovens, filling equipment, mixing and blending machines, mixers and blending equipment, and sortation equipment. That is why automation is considered a necessity in the food industry to meet the required levels in the food industry, like quality control, labor shortages, production speed, and overall profitability (Breaux, 2018).

Jobs in the food industry are inevitable because of the shift in automation to control production, speed, efficiency, and quality control. In contrast, the food industry is capable of running just by automation-it will still require human intervention to complete the production. (Breaux, 2018).

Available labor will continue to be one of the great challenges in the food industry, but this will not stop it from driving even more automation. From harvesting to production down to restaurants, automation is needed to provide quality products in a certain amount of time. Automation will not replace humans, but it will provide another level of training and a new standard for a new given set of skills to deliver new tasks by humans. They need to keep up with all these changes (Breaux, 2018).

No matter what product is being produced, automation will live and stay in the food industry (Breaux, 2018).

The study is entitled "How does self-service technology experience evaluation affect waiting time and customer satisfaction? A moderated mediation model". It explains the impact of self-service technologies (SSTs), which are becoming increasingly common, on consumer satisfaction is ambiguous and poorly studied.

In the retail industry, such technologies are frequently used to provide decision support, either as a primary function (information terminals) or as a side effect (self-scanning).

This study looks into how SST experience evaluation affects consumer happiness with the shop indirectly, via the mediation of waiting for time satisfaction and satisfaction with SSTs, and whether the SST type moderates these processes.

SST satisfaction strongly mediates the effect of SST experience evaluation on shop satisfaction; both cognitive and affective waiting time satisfaction influence the effect of SST experience evaluation on store satisfaction. The mediating influence of affective waiting time satisfaction on the SST experience evaluation–satisfaction with SST relationship is stronger for more interactive technologies with supplementary decision support functions, whereas the mediation of satisfaction with SSTs on the SST experience evaluation–store satisfaction link is stronger for less interactive technologies (self-checkout) (self-scanning).

If retailers or service providers want to improve the link between SST experience and SST satisfaction via perceived waiting time, they should explore increasing SST

interactivity by integrating interactive choice support services (even if decision support isn't the main goal) (Diallo, Djelassi, Zielke, July 2018).

Local Studies

The Philippine Information Agency created an article entitled Fear not innovation, automation, PH told (PIA, 2018). This article noted that the Philippines should not be afraid to embrace the new face of the Fourth Industrial Revolution (FIRe). According to Dr. Sayuki Sawasa, chief economist at the Asia Development Bank (ADB), these advanced technologies like automation, artificial intelligence, and robotics will help to uplift productivity growth by 1.5%. It was also stated by Sawada that emerging technologies will not replace the whole job, but will automate only the specific tasks that are associated with it. Also, she stated that this is a good opportunity for Filipinos because it will create new job opportunities in the industry.

Moreover, with all these benefits given above, Edzell advised the Philippine government to adopt these technologies. Since "most of our scientists and engineers live here in Asia", they take the opportunity to use their inventions. There have been studies on how the government supports this adaption by creating policies that will help this adaption work. This year, the APPC centered on the theme "harnessing the Fourth Industrial Revolution: Creating Our Future Today". It aims to promote a deep understanding and awareness of FIRe (Industry 4.0). This encourages not just the government but everyone to get ready to adapt to the changes brought by automation.

According to this article, "Automation and artificial intelligence: What it means for every citizen" (Busuan, 2017). The adoption of new advanced technologies in every industry has been booming across countries. Robotic Process or RPA, has taken the market strongly. This is to transform global companies and different industries to maintain competitiveness, be digitally enabled and stay relevant.

There's a wide range of spectrum under Intelligent Automation, together with Artificial Intelligence (AI) and other machines that can learn, such as chatbots and NLP (Natural Language Programming). A great impact has been felt across countries in multiple sectors: government, telecommunications, health care, automotive, financial services, aerospace, retail/consumer and even energy are included.

AI is now incorporated as "machine learning", which means it has the capacity to learn how to process data without the need to be programmed. This machine can execute the construction of algorithms and pattern recognition that can easily predict data-driven decisions. Artificial Intelligence is a diversifying technology that can be useful for different sectors. The following are some examples of AI in different fields: AI is part of Netflix on which it can generate, personalize and filter the content of your account. Uber uses AI to find the best route to your chosen destination and can now determine how much the customer is willing to pay for his/her fare (Busuan, 2017).

Chatbots with NLP capabilities are quickly used in BPO call centers. The use of this is that the customer can easily buy a ticket, choose their preferred flight seats, reserve and order at a restaurant, etc. They have been evolving with the possibility of reading emotions through facial recognition and the tone of your voice. Also, they can easily

assess if you're depressed by scanning your feed on your Instagram account (Busuan, 2017).

The next 5 years are indeed full of excitement to gage with more advanced technologies, but thus challenging as well. So every Juan should learn and understand and make a stand to embrace the new system that more technologies will have a great impact on our jobs and economy, and on the rest of the world (Busuan, 2017).

The article, entitled "Seizing the automation opportunity in the Philippines", says the Philippines will face extreme changes in adapting to automation. The rapid growth of changes over the years, even in the nature of work and jobs, will still partially be eliminated when automation comes in. According to McKinsey Global Institute (MGI), almost half of the tasks/activities humans are paid to do could be automated by using robots, artificial intelligence, data analytics, and other forms of technology (Moraje, 2017).

There will be a great impact of acquiring automation in our industry. Philippines-the largest share of automatable work will go to agriculture-related sectors (6 million jobs), where jobs involve a big percentage in physical activities and different environments. Others are retail (3.4 million jobs) and manufacturing (2.4 million jobs). Manufacturing has been the leading the highest proportion of work that can be done by automation, at 61 percent (Moraje, 2017 & MGI, 2017).

In late 2018, McDonald's, one of the giant fast-food restaurants in the Philippines, started using service automation, specifically self-ordering kiosks and digital technology

for cashless payment. As stated by Jueggo-reporter in her article "McDonald's Philippines goes high-tech, high-touch" Does this mean machines/service automation will replace human labor?

Conversely, says Mc Donald's Philippines managing director, Margot Torres, as they're imposing a new store format, soon to be called NxtGen-this means they will increase restaurants' capacity, so for them to serve all the customers, they need to be prepared with their production staff.

The government and some employees worry that automation will increase the unemployment rate. It will not be the case, since then, history has shown that adopting technology tends to provide great welfare to people, and as it goes along, new upcoming jobs will come. For the Philippines, having low labor costs has given companies the ability to invest in technologies. This could mean slower adaption of automation while advanced economies can easily achieve and get the reward for using automation. This would not mean just investing in technologies, but rather it's a way of transforming organizations and retraining humans for new tasks. Furthermore, the government or policy makers should focus and prepare for this to help the whole community to adapt to automation (Moraje 2017).

The article states, "Driving the future of manufacturing in the Philippines through automation." Being said, this article explains the use and benefits of automation that will trigger the Philippines as a larger manufacturing hub (Gotfredsen, 2018).

To obtain this, the country should consider adapting automation in the field of manufacturing. However, the Philippines' adaptation is too slow to surpass its regional counterparts. This is derived from the direct shortage of skilled workers as employees are not exposed to new technologies and automation (Gotfredsen, 2018).

It also stated that "automation is no longer an option but a must-do for the manufacturers." This will lead to continuing to be competitive throughout the years. Here are some benefits that can be gained when the Philippines fully considers automation in the manufacturing field: Automation will keep humans from dangerous, repetitive tasks, together with the compliance of the company for the safety and wellness of their employees. Easy programming: automation can easily be installed and figuratively used right away, or in short, it's user-friendly. And lastly, this will help to equip the Philippine workforce for the future (Gotfredsen, 2018).

According to the article, entitled "Philippines' slow 'automation shift may lead to a job, investment losses: analyst." This explains why the Philippines will lead to lower competitiveness and will have fewer job opportunities in the coming years as the country has a slow movement in adapting to automation. As the government continues to push businesses to invest in AI (artificial intelligence) and upgrade the skills of workers (Domingo, 2018).

Automation is slow in the Philippines and will remain slow as business owners are reluctant to change. "Your workforce is changing, your technology is changing, so it is slightly difficult to digest change," said Depender Kumar, a partner at accounting and advisory giant Grant Thornton.

Government, industry and higher education should be in charge of doing so, providing guidance with new policies and training that will produce skilled workers in the future. The Philippines can adopt automation by producing great talents and investing in advanced technologies (Domingo, 2018).

As stated in the article from Inquirer. Net, entitled "Automation and AI is seen killing more PH jobs", (Camus, 2019). Advance technologies, including automation and Artificial Intelligence, are a risk for low-skilled and manual labor for the next few decades. This might be a threat to them that existing automation will displace their jobs.

According to Oxford and Cisco Economics, a technology giant that did an extensive study, approximately 1.1 million human jobs will be replaced by rapid technological innovations, forcing workers to be unemployed or adapt by shifting jobs or undergoing training (Camus, 2019).

In the Philippines, the major areas that will be affected by automation or displacement of jobs are manufacturing (380,000), retail/wholesale (880,000) and, most especially, agriculture (1.2 million). In total, almost 4.5 million jobs will be displaced, approximately 10% of the overall workforce (Camus,2019).

"The government needs to do more and so do citizens. Citizens also need to acknowledge that this is an investment that they are making toward lifelong learning, "Naveen Menon, Cisco president for ASEAN, told reporters in a recent briefing.

Furthermore, with the slow transition to adapting automation by the Philippines, some factors, such as regulatory constraints, "pro-labor" policies, and the low cost of

labor compared to regional counterparts. The progress and readiness to transition could affect the country. It stated that for the ASEAN countries, including Malaysia, Indonesia, Singapore, Thailand, Philippines, and Vietnam, across these 6 countries, almost 1.9 million workers should learn interactional skills, such as persuasion and negotiation, while 1.7 million workers lack knowledge of writing and speaking skills that should be enhanced by the government, higher education, and companies (Camus, 2019).

"Youth workforce faces high risk from automation-study" (Reyes, 2019). According to the study, the Asian Institute of Management (AIM) revealed that young Filipino workers are at risk of adapting to automation.

According to one study, entitled "Mapping Philippine Workers at Risk of Automation in Automation in the Fourth Industrial Revolution,". One of the authors, Tristan Canare, stated that the risk will come depending on one's job. He connotes, "Our findings suggest that younger workers, relative to older ones, are mostly employed in jobs with the possibility of automation,".

The International Labor Organization (ILO) released a report in which they estimated that about 56 percent of human jobs in five ASEAN countries-Indonesia, Cambodia, Thailand, the Philippines, and Vietnam-are at high risk of automation. The organization specifically stated in their report that in the Philippines, 49 percent of jobs can be automated.

The study shows all age groups will face risk in adapting to automation, but younger workers (ages 15-24) will face a higher risk of 76 percent (Reyes, 2019).

In addition, higher educational attainment is not a guarantee of getting a job that will not be displaced by automation. The study emphasizes that the result is given an important majority to young ones because most of the workers in the Philippines are young. Given this information, young workers have an edge and tend to be trainable rather than their older peers. A higher unemployment rate will tend to result in crime and intense social unrest that will weaken economic progress (Reyes, 2019).

On top of that, the authors recommended that the government and the private sector should be prepared to quickly act to adapt to automation. Execute workforce training and higher-level skills while providing policies and a safety net for workers. They should focus on giving special attention to those people who are at great risk of automation (Reyes,2019).

As published on the Rappler website, "DICT: 48% of employees will be affected by automation" (Gonzales, 2017). In line with the fast pacing of automation. The statistics study underlined getting fast improvement in terms of accessibility to the internet and information (Gonzales, 2017).

Approximately 18.2 million jobs will be displaced by automation. The highest form will come from agricultural areas, where approximately 6 million and 2.4 million will come from the manufacturing sectors. In addition, the assignments of tasks in automation will affect the 48% workforce of the Philippines, completely taking away the jobs and replacing them with automation. This statistic was presented to the I-Summit together with the Department of Information and Communications Technology (DICT) Secretary Rodolfo Salalima (Gonzales, 2017).

The Industrial Revolution has not been likened since it would result in a higher unemployment rate, but this prediction turned out to be accurate as it opened great opportunities. Automation will play a big role in the upcoming years, and so the government and private sectors should not lie around, but instead be prepared to get into transitions with new policies and guidelines that will ease the transition. All sectors are part of the transitions-employees should undergo training that will help them prepare for shifting of tasks (Gonzales, 2017).

Technologies were part of the industry even before the first phase of modernization. Industries. Now, that we're entering the Fourth Industrial Revolution, the fear of development displacing and substitution of human jobs by automation is widespread. Historically, technologies have been disruptive to the industry, given the fact that even before they had a great impact on labor and the production of the company. But also, technologies create new industries that lead to creating new opportunities for humans. It has become the source of growth and development of the economy (Secson, 2017).

Automation can simply raise comparative advantages for jobs that only humans can execute. Thus, automation may add more jobs than it displaces. Economics is simply defined as, "only humans can determine the extent of the use-value of goods and services and the jobs associated with their production". This means, when the demand is high with the use-value, the overall demand will increase and it will turn into an opportunity to create more jobs that only humans can do (Secson, 2017).

One of the published journals by David H. Autor stated that automation does not literally reduce employment, but instead reduces the requirements of the operation to produce output. This has a huge effect on how it provides a high demand for labor that only workers can uniquely supply. Automation in jobs happened to low-middle skilled jobs, including sales, back-office tasks, manufacturing and repair, laborer, and fabricator. Jobs that require abstract thinking or intensive (high-skilled) or manual tasks are hard to displace or automate. In line with this, high education attainment corresponds with high wages and vice versa. While middle educational attainment will result from "job polarization" which will result in inequality (Secson, 2017).

Since the Philippines is the primary sector for Business Process Outsourcing, robotic process automation or software robots are a huge threat to the BPO industry. But software should be more developed and intelligent before it can fully replace humans. About 89 percent, or 600,000, are high risks of automation, stated by the ILO study.

To end this, transitions to more automated production will lead to harmful effects on those workers for a short period of time. Given this, a lot of opportunities should focus and provide higher value to industries like medicine, health, education, culture, arts, and housing that will complement automation in industrial production of goods and services that will lead to human-centered development (Secson, 2017).

Synthesis

In previous studies, human labor and service automation have coexisted in the past, but only with minor automation. With continual developments and a vast spectrum

of new technology, this is steadily changing. As a result, service automation adaptation is almost unavoidable across the industry. The fundamental issues that fast food restaurants will encounter once service automation is completely implemented (e.g., resistance to change, revamping of service operations), as well as recommendations for both manufacturers and companies on how to address these challenges (Ivanov, Webster & Berezina, 2017).

However, a deep understanding of how employees feel about these changes in relation to corporate culture can teach us a lot about how companies can incorporate new technologies into their operations while avoiding employee resistance and enhancing, rather than undermining corporate culture and values. (Breaux, 2018).

As previously said, service automation is a significant technological advancement that is now being implemented in several industries. While earlier automation, such as the ATM, may have significantly altered how customers interact with the banking industry and the workforce, other technologies, such as the massage chair and vending machines, may not have had the same impact on other industries.

If human labor in travel and tourism is replaced, we should expect a huge change in the entire business, perhaps dividing the hotel industry into those in which RAISA is necessary and others in which RAISA is a peripheral technical support system, the bulk of which is hidden from consumers (Webster, Ivanov, 2017).

Furthermore, the hospitality, travel, and tourism industries are always driven by the involvement and experience of tourists or customers. They have a firm grasp of how

to use advanced technology and tools to automate their procedures. (Webster, Ivanov, 2017).

Another study emphasizes the importance of gaining a better understanding of the world of growing automation. According to the report, automation has been around for a long time, with concerns about how it would disrupt the workplace and affect employment rates dating back generations. And today, as technology advances, automation and artificial intelligence emerge, with adoption potentially delivering "(Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

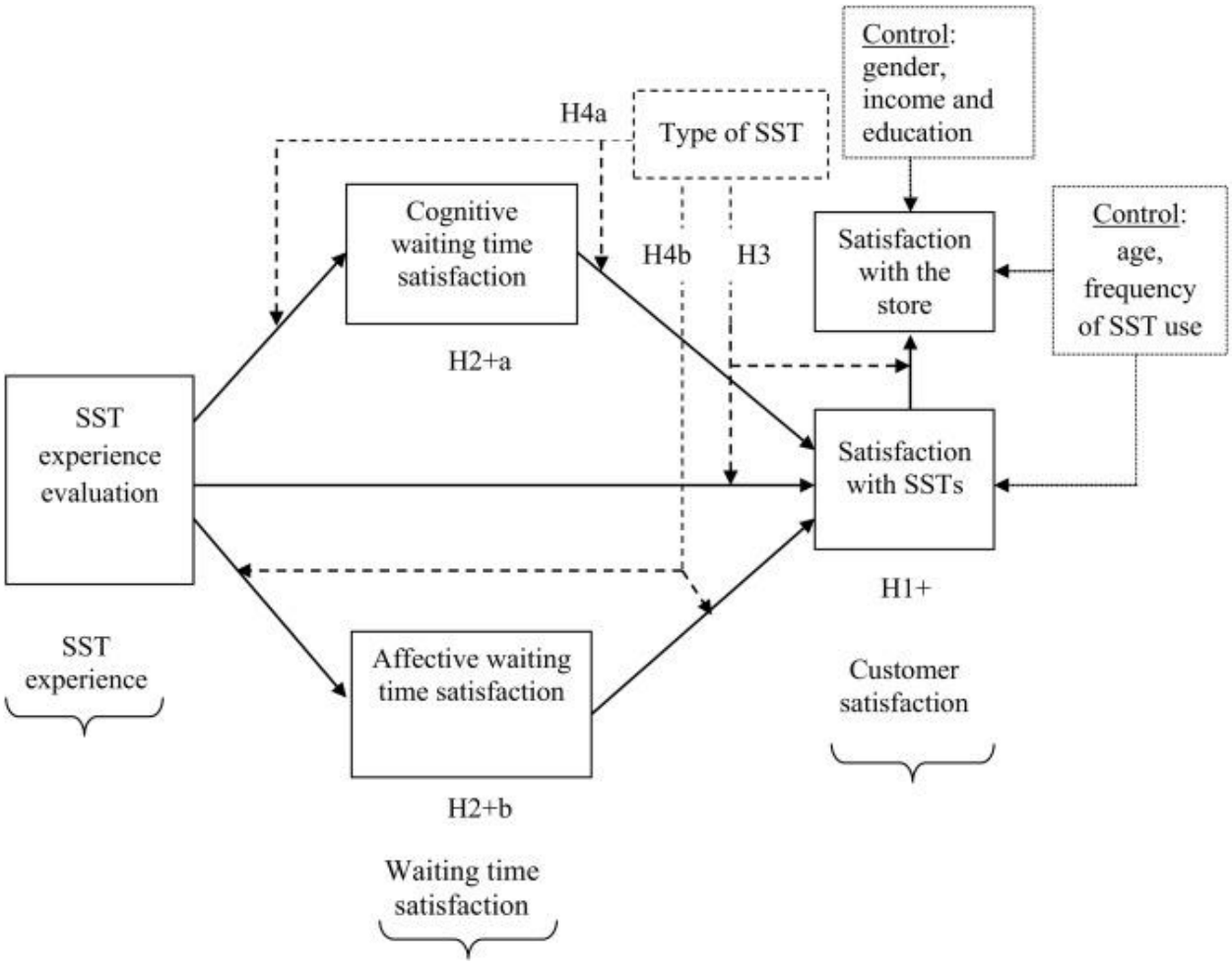
This article goes even further by looking into potential sources of new labor demands that would provide jobs for humans while automation disrupts some of the market labor. They are investigating whether work may be mechanized in 2030 while also creating new career prospects. The following are some of the study's significant findings: Businesses, customers/users, and the economy will all gain from automation technology such as robotics and artificial intelligence. This will result in a significant increase in income for the entire economy (PIA, 2018).

The extent to which automation will displace human laborers will be determined by the speed at which they adapt to and develop automation. " (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

In line with this, the study's goal is to explain how service automation and human labor coexist in the fast-food business.

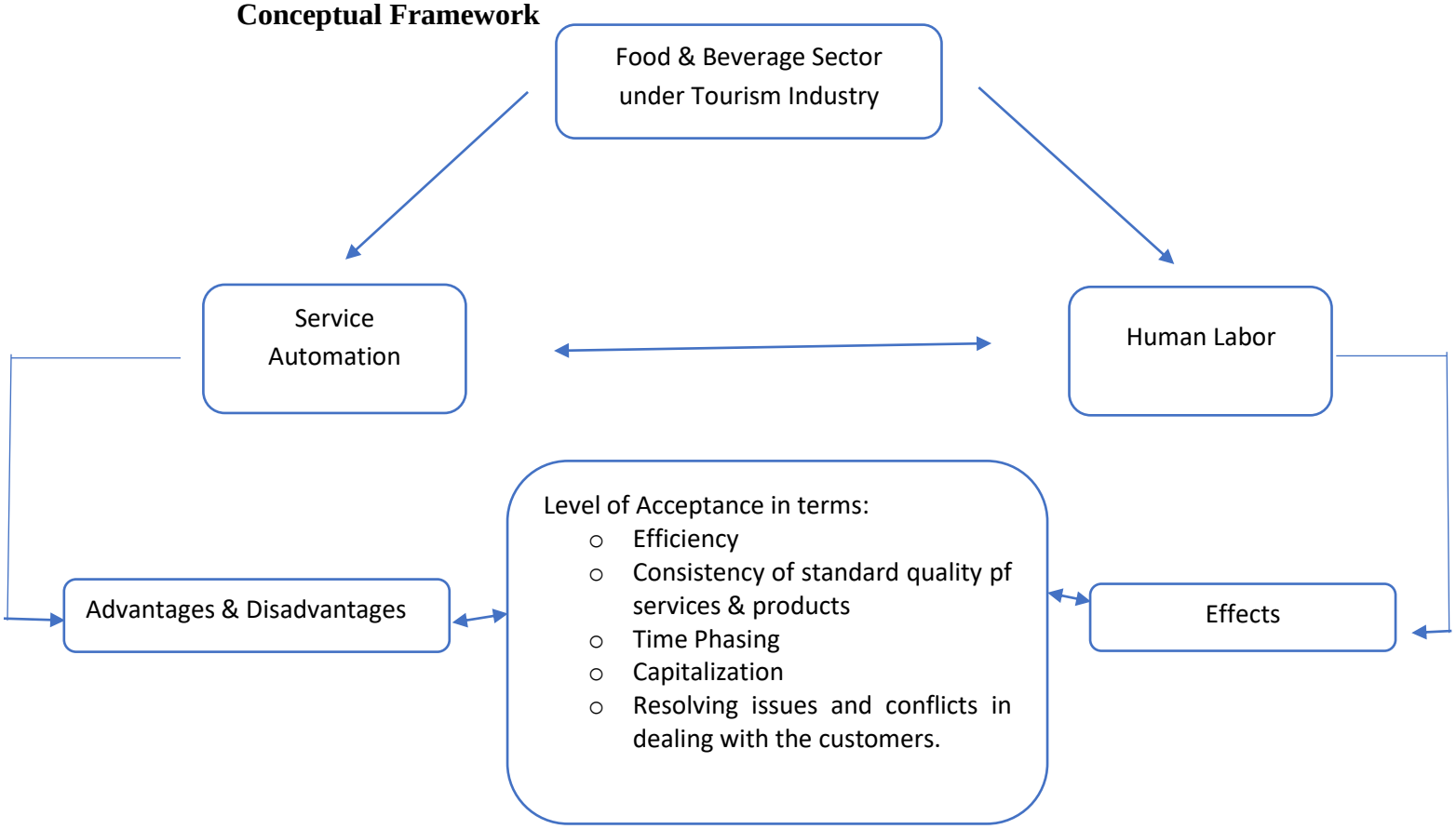
Along with the consumer's level of approval based on efficiency, consistency of standard quality services & products, time phasing, minimal capitalization, and resolving difficulties and disagreements as they arise to improve our understanding of how new technologies are being adopted "(Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

Theoretical Framework



The theoretical framework shows how service automation/technology affects the overall service performance of an establishment, specifically, the waiting time of the customer. It covers the effects of unseeingly increasing service automation on customer satisfaction and which is uncertain and poorly by most people (Diallo, Djelassi, Zielke, July 2018).

Conceptual Framework



The framework shows the coexistence of human labor and service automation in fast-food restaurants in the level of acceptance of the consumers based on the efficiency, consistency of standard quality services & products, time phasing, small capitalization and resolving of issues and conflict when happens. This framework portrays the qualities of human labor and service automation by providing its advantages and disadvantages throughout the years (Webster, Ivanov, 2017) & (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

CHAPTER 3

METHODOLOGY

This chapter presents and discusses the research methods used and applied by the researcher in gathering, analyzing and interpreting the data.

Research Design

The scientific goal of the study is to describe the coexistence of both automatons and human laborers in the food and beverage industry in Metro Manila in terms of its importance and impact on the industry and the people affected by this coexistence. The Descriptive research method was used to effectively execute the research problem analytically and as clearly as possible. Descriptive research design is a scientific method that involves describing the behavior of a subject without influencing it in any way. It is used to gather a general overview of the subject (Shuttleworth, 2008).

Table 2. Methodological Matrix of the Study

Statement of the Problem	**Review of the Related Literature**	**Method of Data Analysis**	**Instrument**
1.Is there a significant difference between service automation if food and beverage sector and human labor?	*Jobs lost, Jobs Gained: Workforce Transitions in a Time Automation *Adaptation of robots and service automation by tourism *Ultimate Transformation: How will automation technologies disrupt the travel, tourism and hospitality industries? *Automation in the Food Industry: Past, Present and Future *The Evolution of Automation in the Food Industry	Descriptive narrative analysis	Survey Questionnaire
2. What is the level of acceptance of service automation and human labor in terms of consumer perspective? 2.1 Efficiency 2.2 Consistency of standard quality services & products 2.3Time Phasing 2.4 Small Capitalization 2.5 Resolving issues and conflicts in dealing with the customers.	*ASEAN TRANSFORMATION The Future Jobs at Risk of Automation *Jobs lost, Jobs Gained: Workforce Transitions in a Time Automation *The Benefits of Automation in the Food and Beverage Industry *The Evolution of Automation in the Food Industry *Automation in the Food Industry: Past, Present and Future	Test on Two Population Mean	Survey Questionnaire

3.What are the effects of service automation in the tourism industry (food and beverage sector).	*Adaptation of Robots, Artificial Intelligence and by Travel Tourism and Hospitality Companies- A Cost-Benefit Analysis *How Automated Workflow Tools Can Help the Travel *The three technology trends will change the way you travel	Descriptive narrative analysis Thematic Analysis	Secondary Data
4. What are the advantages and disadvantages of service automation and human labor in the tourism industry? (food and beverage sector)	*Automation in the Food Industry *Fear not innovation, automation, PH *Automation and artificial intelligence: What it means for every Juan *The Evolution of Automation in the Food Industry *The Benefits of Automation in the Food and Beverage Industry	Descriptive narrative analysis	Secondary Data
5. How automation will affect the future jobs after 10 years?	*Seizing the automation opportunity in the Philippines *Automation, AI seen killing more PH Jobs *Youth workforce faces high risk from automation *Mapping Philippine Workers Risk of Automation in Automation in the Fourth Industrial Revolution	Thematic Analysis	Secondary Data

	*DICT: 48% of employees to be affected by automation		

Participants of the Study

In this study, the participants are people who work in fast-food restaurants (stated in Chapter 1). Specifically, the guests and workers of the top fast food around Metro Manila. These people are relevant to the field of study to provide reliable data.

The researcher used a multi-stage stratified; this is a sampling-based formula.

Table 3. Population that was used for the study.

TOP 10 BEST FAST-FOOD RESTAURANTS				
(Yoorekka, 2018)		**Number of Respondents**		**Date**
		Employees	Customer	
Mc Donald's	26th St. BGC Taguig	19	21	Nov. 16, 2019
KFC	Salcedo Village, 109 L.P. Leviste Street, Makati	23	17	Nov. 16, 2019
Jollibee	Sheridan, Mandaluyong, Metro Manila	20	20	Nov. 17, 2019
Wendy's	Ortigas, Pasig City	15	25	Nov. 17, 2019
Chowking	Agora Parking Plaza, N. Domingo Street, San Juan City	18	22	Nov. 17, 2019
Goldilocks	SM Mall Of Asia, J.W. Diokno Blvd, Pasay	16	24	Nov. 23, 2019

Mang Inasal	G/F Festival Mall Filinvest, Alabang	24	16	Nov. 24, 2019
Pizza Hut	G/F SM City Bicutan, Dona Soledad Ave., Parañaque	13	27	Nov. 30, 2019
Greenwhich	Trinoma, Quezon City	22	18	Dec. 01, 2019
Bon Chon	Gov. Pascual Ave, Malabon	16	24	Dec. 07, 2019
		Total: 400		

Instrumentation

Instrument Used

For the researcher to obtain necessary information and to justify the scope of the present study, certain researcher instruments were used.

Sampling Technique

In getting the sample size, purposive sampling was used to determine the number of participants from each department and rank. For the selection of participants in each department, simple random sampling will be utilized.

The sample size will be based on the level of acceptance of the internal and external variables once gathered.

It was decided to use Slovin's formula. It is used to determine the sample size (n) based on the population size (N) and the margin of error (M) (e). -It's a formula for estimating sampling size using the random sampling approach. -n = N/(1+Ne2) is the formula.

Questionnaire. The survey questionnaire serves as the main tool in gathering the data. It is a list of planned and written questions related to a particular topic, with space provided to indicate the response to each question intended for submission to a number of persons for reply so that the answers could be used as an answer to the problem or solution to the study. This is developed to utilized and discover the different perceptions of the respondents to given questions.

Construction of Instrument. The survey questionnaire on the importance and the level of acceptance of automation and human labor in the tourism industry was self-constructed by the researcher. The questionnaire was composed of three sections. The first section was composed of the profile of the respondents including age, gender, marital status, educational attainment, occupation and employment status. The second section was focused on the importance, factors and how automation and human labor make an impact on the tourism industry. And the last section was focused on their own perception of automation and human labor if it helps the advancement of providing service in the industry.

In order to have a result, the researcher had 400 respondents that served and help the study to gain a good result. Those are the people who are involved in food and beverage establishments (public or private) and other government organizations that are relevant to the tourism industry. To make the responses easily understood by the respondents and to ensure simplicity. The questionnaire was designed by was design in a Likert scale and the nos. 2 & 3 are will be answered by their perception.

According to McLeod (2008), various kinds of rating scales have been developed to measure attitudes directly (i.e. the person knows their attitude is being studied). The most widely used is the Likert Scale. Likert (1932) developed the principle of measuring attitudes by asking people to respond to a series of statements about a topic, in terms of the extent to which they agree with them, and so tapping into the cognitive and affective components of attitudes. Likert-type or frequency scales use fixed choice response formats and are designed to measure attitudes or opinions (Bowling 1997, Burns & Grove 1997). These ordinal scales measure levels of agreement/disagreement. A Likert-type scale assumes that the strength or intensity of the experience is linear, specifically on a continuum from strongly agree to strongly disagree and assumes that attitudes can be measured. In its final form, the Likert Scale is a five (or seven) point scale that is used to allow the individual to express how much they agree or disagree with a statement. Each of the five (or seven) responses would have a numerical value which would be used to measure the attitude under investigation.

The interpretations of the data gathered from the respondents were made with the aid of scales and descriptions.

Points	Interval Range	Verbal Interpretation
5	4.01-5.00	Strongly Disagree
4	3.50-4.00	Disagree
3	2.50-3.49	Undecided
2	1.50-2.49	Agree
1	1.00-1.49	Strongly Agree

Interview. It is the process of obtaining information through conversation and discussion. An interview is considered as an expert or knowledgeable source of the subject matter in consideration.

Data Gathering Techniques

The researcher used the questionnaire and interview guide to gather data and information to find out the level of acceptance of the internal (officers) & external (guests) of the Top 10 Food & Beverage establishments. Before the actual conduct of this study, a letter requesting permission to conduct the study was sent to the respective manager covered by the study. Once a permit will be secured, the distribution of survey questionnaires will be done.

The researcher explained the instructions and the purpose of the study. The collection of the completed questionnaire was done a day after the distribution. This is to provide the participants with enough time to answer the questionnaire.

The significant difference in the level of acceptance of the coexistence of human labor and service automation when they group according to the demographic profile will be determined using t-test Statistics.

Documentary analysis was used as an additional technique to gather information. Published and unpublished dissertations, circulars, books, handbooks, articles, periodicals and research journals were pursued to gain intensive background of what is automation and human laborers in the tourism industry.

Statistical Treatment of Data

Primary and secondary data were processed and evaluated in accordance with the research requirements. However, raw data was collected, and descriptive statistics were used to calculate the results. Descriptive statistics are a set of short descriptive coefficients that summarize a data set, which might be a representation of the complete population or a sample of it. Measures of central tendency and measures of variability are two types of descriptive statistics (spread) (Hayes, 2021). Measures of central tendency, particularly the mean, are used to describe the entire set of data as a single measurement. The mean of the N measurements of x is represented by the symbol $\bar{x}$ and is defined by:

$$\bar{x} = \frac{x_1 + x_2 + x_3 + \cdots + x_N}{N} = \frac{\sum_{i=1}^{i=N} x_i}{N}$$

To compute the standard deviation:

$$\sqrt{\frac{\sum(X - \bar{X})^2}{n-1}}$$

To report the differences of each score, population standard deviation will also be calculated.

$$\sigma = \sqrt{\frac{(x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + (x_3 - \bar{x})^2 + \cdots + (x_N - \bar{x})^2}{N}} = \sqrt{\frac{\sum_{i=1}^{i=N} (x_i - \bar{x})^2}{N}} \quad (2)$$

Validation of Instrument

Validation of Questionnaire. The draft of the questionnaire was presented to the thesis adviser, Dr. Hero Toloso and Mr. Erl Orenza after getting feedbacks, the researchers incorporated the suggestions and recommendations to improve the instrument. The approved questionnaire was pretested to 20 respondents. The people who validated the questionnaire were not included in the final group of respondents. The dry run was done to find out if there were items in the questionnaire which were not

understood.

To obtain relevant information necessary for the study, the researchers went to the setting of the study.

To avoid confusion, the researchers also gave instructions to the respondents regarding the study and on filling up of the questionnaires were immediately retrieved from the respondents. The data were tabulated and analyzed to come up with a reliable interpretation.

CHAPTER 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

I. Introduction

This chapter presents the study's findings, which the researcher analyzed and iterated on. The presentation follows the order in which the study's areas of concern were stated.

In this quantitative study, the coexistence between service automation and human labor is assessed. The significance of service automation and human labor, the level of acceptance of the consumer towards service automation, the effects, the advantages and the disadvantages of both service automation and human labor in the food and beverage sector. The following research questions and hypotheses were used to assess the coexistence of service automation and human labor in food and beverage establishments.

Profile of the Participants

As stated in chapter 3, only guests and employees ages 18-60 years were invited to participate in the study. Most of the guests and workers around Metro Manila are reported to be in the age bracket of 18-30 years old (63.3 %) these are the young people who appear to work and can easily adapt to new technologies, and who spend the majority of their time eating at fast food restaurants., mostly female (58.0%) most of the respondents shows female working and eating in a fast food, single (87.8%) respondents are single primarily because their salaries are lower when compared to other office jobs,

and single people spend more money on fast food rather than cooking because their responsibilities are lower than those who have a family, as demonstrated. in Table 4. The participants attained have a college degree (83.5%), with regular work (64%) and with rank and file position (83.0%) as shown in Table 5. A total of 400 respondents from the Top 10 food and beverage establishments around Metro Manila.

Table 4. Number of Respondents

TOP 10 BEST FAST-FOOD RESTAURANTS					
(Yoorekka, 2018)		**Service Automation**	**Number of Respondents**		**Date**
			Employees	Customer	
Mc Donald's	26th St. BGC Taguig	Self- ordering Kiosks, Digital Payment & Chatbot	19	21	Nov. 16, 2019
KFC	Salcedo Village, 109 L.P. Leviste Street, Makati	N/A	23	17	Nov. 16, 2019
Jollibee	Sheridan, Mandaluyong, Metro Manila	Automated food conveyor system, Wireless Charging pads & Self-ordering Kiosks	20	20	Nov. 17, 2019
Wendy's	Ortigas, Pasig City	Self- ordering Kiosks	15	25	Nov. 17, 2019
Chowking	Agora Parking Plaza, N. Domingo Street, San Juan City	Automated machines & retort machine	18	22	Nov. 17, 2019
Goldilocks	SM Mall Of Asia, J.W. Diokno Blvd,	N/A	16	24	Nov. 23, 2019

	Pasay				
Mang Inasal	G/F Festival Mall Filinvest, Alabang	N/A	24	16	Nov. 24, 2019
Pizza Hut	G/F SM City Bicutan, Dona Soledad Ave., Parañaque	Automated pizza- making	13	27	Nov. 30, 2019
Greenwhich	Trinoma, Quezon City	N/A	22	18	Dec. 01, 2019
Bon Chon	Gov. Pascual Ave, Malabon	N/A	16	24	Dec. 07, 2019
			Total: 400		

Table 4. The number of Respondents was scattered with the Top 10 Best Fast-Food Restaurant across Metro Manila. It was divided equally into 40 and sub- group into two (employees and customer) per establishment to achieve the 400 respondents.

The fast-food chains show some service automation. Those are self-ordering kiosks, digital payment, chatbots, food conveyors, wireless charging pads, and automated pizza-making, but some establishments don’t show this advancement.

Table 5. Age Group

Descriptive Statistical Table					
Age Group	**Count**	**Min**	**Max**	**Mean**	**Standard Deviation**
30- 51 years old and above	400	9	253	100	110.30

Age Group	Frequency	Percent
30 years old and below	253	63.3
31-40 years old	107	26.8
41- 50 years old	31	7.7
51 years old and above	9	2.2
Total	400	100.0

Table 5. Age Group shows that the highest age bracket of the respondents both employees and guests to the chosen food and establishment around Metro Manila came from 30 years old and below with 63.3 % that corresponds to 253 frequency this means respondents are mostly young and capable of adapting changes and spend young people tend to spend money with fast food chain , followed by 31- 40 years old with 26.8 %- 107 frequency, next is 41- 50 years old with 7.7%- 31 frequency and last, the lowest is 51 years old and above with only 2.2% - 9 frequency, this is understandable given that older people tend to stay at home and the Philippine retirement age is 60 years old.

Table 6. Civil Status

Descriptive Statistical Table					
Civil Status	**Count**	**Min**	**Max**	**Mean**	**Standard Deviation**
Single & Married	400	54	346	200	206.46

Civil Status	Frequency	Percent
Single	346	86.5

Married	54	13.5
Total	400	100.0

Table 6. Civil Status shows that most of the respondents are single with 86.5% that corresponds with 346 frequency, respondents are single primarily because their salaries are lower when compared to other office jobs, and single people spend more money on fast food rather than cooking because their responsibilities are lower than those who have a family and just followed by married correspondents with 13.5%- 54 frequency..

Table 7. Gender

Descriptive Statistical Table					
Gender	**Count**	**Min**	**Max**	**Mean**	**Standard Deviation**
Male & Female	400	168	232	200	45.25

Gender	Frequency	Percent
Male	168	42.0
Female	232	58.0
Total	400	100.0

Table 7. Gender shows that most of the respondents are female with 58% that corresponds with 232 frequency, this shows female tend to explore this kind of industry and male correspondents with 42%- 168 frequency.

Table 8. Highest Educational Attainment

Descriptive Statistical Table					
Highest Educational Attainment	**Count**	**Min**	**Max**	**Mean**	**Standard Deviation**
High School- Graduate School	400	18	334	100	156.06

Highest Educational Attainment	Frequency	Percent
High School	20	5.0

College	334	83.5
Graduate School	28	7.0
Vocational	18	4.5
Total	400	100.0

Table 8. The highest educational attainment shows that the majority of the correspondents earned a college degree with 83.5% that corresponds 334 frequency, this shows most of the workers and guests are ten to finished their studies and afford to eat to a fast food. This has been followed by graduate school degree holders with 7%- 28 frequency, next is high school graduate with 5% - 20 frequency and last, vocational degree holder with 4.5% - 18 frequency, as for being a worker in a fast food restaurant, they need to have a degree or have a vocational degree, most especially those aiming for high positions. Furthermore, the majority of people who were unable to complete or attend their undergrad school tend to have financial issues, which include being unable to afford these fast food restaurants.

Table 9. Classification – Internal (Officers/ Workers) & External (Guests)

Descriptive Statistical Table					
Classification	**Count**	**Min**	**Max**	**Mean**	**Standard Deviation**
Internal (Officers) & Guests (External)	400	156	244	200	62.22

Classification	**Frequency**	**Percent**
Internal (Officers)	156	39.0
Guests (External)	244	61.0
Total	400	100.0

Table 9. The classification table shows that the majority of the correspondents are guest/s with 61%- 244 frequency, this means there's a lot of people eat in a fast food and

39%- 156 frequency are the officers/ workers of food and beverage establishments, as there's a limited worker in every chain.

Table 10. Employment Level

Descriptive Statistical Table					
Employment Level	**Count**	**Min**	**Max**	**Mean**	**Standard Deviation**
Rank & File- Managerial	400	28	332	133.33	172.15

Employment Level	Frequency	Percent
Rank & File	332	83.0
Supervisory	40	10.0
Managerial	28	7.0
Total	400	100.0

Table 10. Employment level shows that many of the correspondents are in the rank & file position with 83% that corresponds with 332 frequency, most of the repondents are crew that serves in front and back office of the fast food, this is being followed by supervisory level with 10%- 40 frequency and last, managerial level with 7%- 28 frequency, we all know, in the fast food chain, there are just fewer high positions, and those who have managerial positions tend to eat at more prestigious restaurants rather than fast food, which is mostly for the middle class.

Table 11. Significance Difference of Level of Acceptance of the coexistence of service automation and human labor in terms of workers & consumers perspective.

Significant Difference Comparison	Classification	Computed Wilcoxon Signed Rank Test	Computed p-value	Decision	Remarks
HL_EFFICIENCY - SA_EFFICIENT	Customer	0.1355	0.0440	Reject Ho	Significant
	Employee	0.0536	0.6984	Fail to Reject Ho	Not Significant
HL_CONSISTENCY - SA_CONSISTENCY	Customer	0.8192	0.0412	Reject Ho	Significant
	Employee	0.3285	0.4130	Fail to Reject Ho	Not Significant

HL_TIMEPHASING - SA_TIMEPHASING	Customer	0.1463	0.0385	Reject Ho	Significant
	Employee	0.0131	0.5130	Fail to Reject Ho	Not Significant
HL_CAPITALIZATION - SA_CAPITALIZATION	Customer	0.6468	0.5907	Fail to Reject Ho	Not Significant
	Employee	0.4320	0.0249	Reject Ho	Significant
HL_RESOLVINGISSUES - SA_RESOLVINGISSUES	Customer	0.9444	0.0241	Reject Ho	Significant
	Employee	0.3829	0.1715	Fail to Reject Ho	Not Significant

The result shows the significant difference between service automation and human labor in the food and beverage sector. Based on the results, the difference between the efficiency, consistency, time phasing, and resolving issues from human labor and service automation is significant from the customers, with a p-value less than the level of significance, which is 0.05 (0.0440, 0.0412, 0.0385, 0.0241 < 0.05); this means that there is a statistically significant change and effect in the efficiency, consistency, time phasing, and resolving issues between human labor and service automation for the customers while capitalization is not substantial since the p-value calculated is more significant than the level of significance which is 0.05 (0.5907 > 0.05); therefore, we fail to reject the null hypothesis. However, the difference between the efficiency, consistency, time phasing, and resolving issues from human labor and service automation is not significant from the employee, with a p-value greater than the level of significance, which is 0.05 (0.6984, 0.4130, 0.5130, 0.1715 > 0.05); this means that there is no statistically significant change and effect in the efficiency, consistency, time phasing, and resolving issues between human labor and service automation for the customers while capitalization is statistically significant for the employees since the p-value calculated is less than the level of significance which is 0.05 (0.0246 < 0.05); therefore, we reject the null hypothesis.

Descriptive Statistics of the Likert Scale Level of Perception Questionnaire.

The scale was used to measure the level of consumer perception of service automation and human labor. The purpose of this questionnaire was to provide the participants with the opportunity to share their feelings about the coexistence of service automation and human labor in food and beverage establishments. Descriptive statistics were calculated to determine the central tendency and dispersions of the scores of the questionnaires. Descriptive statistics were computed all the total scores for all participants and on the research question specific questions for all participants. Table 10 provides the central tendency and dispersion of the total combined scores of all participants.

Table 12. Descriptive Statistic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SA_EFFICIENT	400	1	5	3.91	.768
SA_CONSISTENCY	400	1	5	3.89	.879
SA_TIMEPHASING	400	1	5	3.94	.962
SA_CAPITALIZATION	400	1	5	3.52	.988
SA_RESOLVINGISSUES	400	1	5	3.49	.993
HL_EFFICIENCY	400	1	5	3.86	.827
HL_CONSISTENCY	400	1	5	3.81	.821
HL_TIMEPHASING	400	2	5	3.61	.823
HL_CAPITALIZATION	400	1	5	3.64	.849
HL_RESOLVINGISSUES	400	1	5	4.03	.877
Valid N (listwise)	400				

Table 13. Level of acceptance of service automation and human labor in terms of worker & consumer perspective.

	1.00-1.49	1.50-2.49	2.50-3.49	3.50-4.49	4.50-5.00				
Level of acceptance of service automation and human labor in terms of consumer perspective:	**Strongly Disagree**	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**	**Mean**	**Standard Deviation**	**Rank**	**Verbal Interpretation**
	Frequency								
	1	**2**	**3**	**4**	**5**				
SA_EFFICIENT	1	10	31	118	37	3.91	0.770	3	Agree
SA_CONSISTENCY	3	11	37	100	46	3.89	0.879	4	Agree
SA_TIMEPHASING	5	13	28	94	57	3.94	0.962	2	Agree
SA_CAPITALIZATION	10	19	48	98	22	3.52	0.984	9	Agree
SA_RESOLVINGISSUES	8	20	64	77	28	3.50	0.995	10	Agree
HL_EFFICIENCY	2	12	35	111	37	3.86	0.829	5	Agree
HL_CONSISTENCY	1	11	49	99	37	3.81	0.823	6	Agree
HL_TIMEPHASING	0	18	65	89	25	3.61	0.823	8	Agree
HL_CAPITALIZATION	2	13	67	86	29	3.64	0.847	7	Agree
HL_RESOLVINGISSUES	2	10	31	92	62	4.03	0.877	1	Agree
Averaged Weighted Mean						**3.77**	**0.879**		**Agree**

The result shows the level of acceptance of service automation and human labor in terms of consumer perspective.

The result shows the level of acceptance of service automation and human labor in terms of consumer perspective.

As you can see in the result, the efficiency of service automation has a mean of 3.91 while the efficiency of human labor has 3.86, this means that the verbal interpretation is agree. In terms of consistency, service automation has a mean of 3.89 while human labor has 3.81, verbally interpreted as agree. In terms of time phasing, serivce automation has a mean of 3.94 while human labor has 3.61, verbally interpreted as agree. In terms of capitalization, serivce automation has a mean of 3.52 while human labor has 3.64, verbally interpreted as agree. In terms of resolving issues, serivce automation has a mean of 3.50 while human labor has 4.03, verbally interpreted as agree.

This implies that the average weighted mean is 3.77 which is verbally interpreted as Agree.

In addition, Time phasing is set to be a material requirement in the planning process, and future demand, supply, and stocks are expressed by time period or in short it is the span of time on how fast customer service can serve in a fast food while revolving issues are the problems or conflict arises in a fast food. Like the following:

- Dirty utensils,
- Dirty or ill-equipped restrooms
- Impolite or condescending servers
- Servers with a sloppy appearance or poor hygiene
- Meals or beverages served at incorrect temperature
- Meals are not what you ordered
- Feeling rushed to finish or leave by the server
- Server removing your plate or beverage before you finish (59%)
- Food does not look or taste as described in the menu (54%)

- Slow service (51%)
- Table not ready more than 15 minutes past reservation (50%)
- Gratuities of 18% or higher automatically added to the bill (50%)
- Inaccurate calculation of check by server (48%)
- Tables that are too close together (39%)
- Poorly situated table -- near door, kitchen, etc. (38%)
- Loud or distracting diners at other tables (38%)
- Diners nearby talking or texting on cell phones (30%)
- Servers not bringing water until asked (27%)
- Server referring to you as pet names such as "honey" or "dear" (24%)
- Server confusion about who gets which meal (17%)
- So much nutritional information available that it's a turn-off to eating (16%)
- Not enough nutritional information available (14%)

Issues are inevitable in a customer service sector. In that way, the fast food can develop solutions and improve the service they’re offering to their guests (Hunt, 2014).

Table 14. Service Automation convenient than human labor interpretation.

Does service automation give more convenience in customer service than human do? Yes or No. If NO, kindly explain why.	**Classification**	**Frequency**	**Percent**
Yes	Customer	167	41.75%
	Employee	68	17.00%
No	Customer	39	9.75%
	Employee	126	31.50%
Total		**400**	**100.00%**

Practicality and convenience are two of the significant effects of weighing the effects of human labor and service automation. According to the result, 167 (41.75%) customers agree that service automation will improve convenience customer service rather than human labor while 68 (17.00%) employee says the same. In comparison, 39 (9.75%) customer states that service automation won't give more convenience in customer service than human labor while 126 (31.50%) employee states the same.

The advancement of robotics, artificial intelligence and service automation technologies or simply raise. (Bhaumik,2018; Miller, 2017; Russell & Norvig, 2016). This allow companies under different sectors to considered using RAISA for multiple benefits they can inhabit. The following are some benefits travel and tourism industry will benefit: streamline operations, decrease the cost, consistency, eliminate cost and will increase efficiency and increase production which will result huge changes in companies/ establishments operations (Goldfarb, Agrawal & Gans, 2018; Davenfort, 2018; Mak, 2015 & et al., 2017).

Advantages are higher production rates and enhanced productivity are typically credited to automation, as are more efficient material use, better product quality, improved safety, shorter labor workweeks, and shorter factory lead times. Higher output

and higher productivity have been two of the most important justifications for the adoption of automation. Despite promises of excellent quality from human craftsmanship, automated systems often complete the production process with less variation than human employees, resulting in greater control and consistency of product quality. Furthermore, improved process control allows for more efficient use of materials, resulting in less scrap.

The safety of workers is a major motivation for automating an industrial operation.

Automated systems frequently remove workers from the workplace, protecting them from the hazards of the working environment.

The Occupational Safety and Health Act of 1970 (OSHA) was enacted in the United States with the national goal of making work safer and protecting workers' physical well-being.

OSHA has had the impact of encouraging the use of factory automation and robotics.

Another advantage of automation is that manufacturing workers work less hours each week on average.

Around 1900, the average workweek was around 70 hours.

This has gradually been decreased to a regular workweek of roughly 40 hours in the United States. Mechanization and automation have played an important influence in this decrease.

Finally, automation reduces the time required to process a normal production order through the factory.

Worker relocation has already been mentioned as a major downside of automation.

Regardless of the social gains that may result from retraining displaced workers for other employment, the worker whose job has been taken over by a machine will nearly always experience emotional stress.

Aside from being displaced from job, the worker may also be relocated geographically.

An individual may have to relocate in order to find other work, which is another source of stress.

Other disadvantages of automated equipment include the high capital expenditure required to invest in automation (a fully automated system can cost millions of dollars to design, fabricate, and install), a higher level of maintenance required than with a manually operated machine, and a generally lower degree of flexibility in terms of possible products when compared to a manually operated system (even flexible automation is less flexible than humans, the most versatile machines of all).

There is also a possibility that automated technologies would eventually dominate rather than help humanity. The concerns include the prospect that labor would become slaves to automated machines, that massive computer data networks will breach human privacy, that human error in technology management will harm civilization, and that society will become economically dependent on automation.

Aside from these risks, automation technology, when applied properly and successfully, can provide significant opportunities for the future.

There is a possibility to free humans from all sorts of repetitious, harmful, and unpleasant labor. Furthermore, future automation technologies have the potential to create a rising

social and economic environment in which humans can enjoy a higher standard of living and a better way of life (Britannica, 2020).

These technologies have great impact on which it transforms the whole society even more. In addition, we need to consider the benefits and the downfall, so they can easily determine the latter. For some instance, there will be certain tasks are automated, and how will the industry identify and provide transitions to those workers who will be affected to a new, quality jobs by retraining with different high standard skills (Misrahi, 2018). More job opportunities will continue to drive even with the existence of automation and new jobs will be identified in the future that doesn't exist now.

The COVID–19 epidemic has had a detrimental influence on a variety of industries, none more so than those involved in food packaging, preparation, and service.
The influence on consumers has been extensively discussed. Many restaurants continue to operate at or near capacity because to social distance and other safeguards relating to employee and customer health and safety. Others have ceased operations; six out of ten will not reopen. However, it is not just restaurants and bars that have suffered

(Casey & Smith, 2020).

With majority of the world's population being requested or obliged to stay at home and adhere to physical-distance limitations, once-bustling eateries and cafés are now deserted. Although a few fast food or quick-service restaurants (QSRs) are experiencing increased demand for takeout and delivery—for example, numerous US pizza chains are recruiting thousands of workers as orders increase—the majority of other QSRs have seen substantial sales decreases. Some have closed their doors for good (Becker, Haas, Kuehl & Marcos, 2020).

The coronavirus pandemic is a humanitarian disaster with potentially significant economic consequences. “The compulsory ‘lockdowns' of the populace and other efforts to control the virus are expected to lead to the greatest quarterly loss in economic activity since 1933,” our colleagues noted in a recent article. They anticipate a historic 40 to 50 percent drop in discretionary spending, resulting in a 10% drop in GDP (For the most recent information, visit McKinsey.com/coronavirus.). The fast-food business has been particularly heavily struck.

A few eateries have already declared bankruptcy, while others say they will soon be unable to cover their rent and labor bills. According to the National Restaurant Association, up to seven million restaurant workers in the United States alone could lose their employment by June. Without a doubt, fast food or QSRs will have to make difficult decisions in the coming weeks and months (Becker, Haas, Kuehl & Marcos, 2020).

However, depending on their starting point and the measures taken by their leadership teams, some fast food or QSRs will perform better than others. This essay outlines a set of strategies that can help fast food or QSRs not only survive the current crisis, but also position themselves to prosper in the “next normal.” These activities are crucial for “navigating the now,” preparing the comeback, and molding the future (Becker, Haas, Kuehl & Marcos, 2020).

In many nations, fast food or QSRs are either closed completely or operate on a restricted basis, offering only takeout, pickup, delivery, drive-through, or a combination of those choices.

Even among fast food or QSRs that have remained open, there has been a significant decline in business.

According to consumer-sentiment surveys performed by McKinsey in late March across Europe and the United States, most customers plan to lower their spending on all restaurant food—takeout and delivery, fast food or QSRs, and other types of restaurants—during the crisis.

Meanwhile, in China, where physical-distance constraints have already been relaxed, consumer-sentiment surveys suggest the three tendencies (display) that could play out in other geographies:

- Consumers are still afraid of being in highly populated public spaces, thus post-crisis expenditure on in-restaurant dining is projected to be lower than pre-crisis levels.
- Takeout demand is projected to swiftly rebound to pre-crisis levels.
- Consumers will most likely spend more on meal delivery, prepared foods, and groceries after the epidemic than they did before the outbreak.

Again, due to budgetary constraints and persistent concerns about eating in crowded locations, people are likely to prefer eating at home for the foreseeable future.

Hospitality, travel and tourism industry are always driven by the tourist/s or customer engagement and experienced. Have a distinct understanding of using advance technologies / tools to automate their processes. The India Brand Equity Foundation has published a report projecting that the GDP contribution of this sector (hospitality, travel and tourism) is expected to grow at 7.2 percent yearly, through the year of 2015- 2025. This means it will reach a massive USD 160.2 billion by 2026. Along with this, their aviation industry indicates total freight traffic reach 4.14 million tons to show growth at a

CAGR of 7.27 percent between the year of 2016- 2023, Meaning to say, India is one of the five fastest- growing aviation markets globally associated with around 275 million new passengers.

The fast food restaurants is now taking big steps in considering the automation or artificial intelligence and embrace the reality of the fast phasing development of technologies. Consumers will experience extravagant, mesmerizing and overwhelming feeling in dealing with these new innovations. Going forward, the staff will need to create more memorable and unique experience together with these innovations (Mitankur (Mit) Majumbar, April 2016).

This will generate a great growth of income for the whole economy. To the extent on which the automation will displace the human laborer's depending on the pace of their adaption and development of the automation, same goes with the economic growth and the increase of demand for work. Even it will cause a downline for some work, still new job will be created that do not exist today (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

MGI Builds this report to assess the automation and its impact to the workforce. They assess the types and number of occupations that will displaced by automation. The result shows that there will be lots of shifting occupations and creating jobs that are not existing in the years ahead. The impaction of this more skill full workers and high wages. This study covers only 46 countries / models. Their finding suggests that a lot of future demand in labor will create demand as well for millions of jobs by 2030. (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

SUMMARY OF THE FINDINGS

This chapter summarizes the study's highlights, providing a methodical and comprehensive summary that led to the formulation of conclusions and recommendations.

The study aimed to analyze the perception and the level of acceptance of guests and employees to the coexistence of service automation and human labor in the food and beverage sector of the tourism industry in terms of their demographic profile and perceived level of acceptance through efficiency, consistency of standard quality service and products, time phasing (can serve faster for a given span of time), small capital and the ability to easily resolve conflicts or issues. To recognize the importance and effects after 10 years of both service automation and human labor in the top 10 accredited and famous food and beverage establishments. And how the result can be used as a tool or guidelines for higher institutions, tourism organizations, and government to be prepared to fully adapt to service automation while balancing the human workforce.

The study measures the importance and level of acceptance of the coexistence of service automation and human labor through a survey questionnaire. The study was based on a quote of 400 respondents on the top 10 selected foods and beverages around Metro Manila. Participants are those who work in food and beverage establishments and their

guests based on the top 10 establishments. The descriptive statistical tools were frequency and percentage distribution, weighted mean and a sampling-based formula.

The study reveals and shows how people accept service automation in terms of costs, the readiness of customers and openness to be served by service automation, cultural characteristics of both customers and service providers, the technological characteristics of service automation solutions, and other factors. It also provides some glimpses of basic challenges that tourist companies will face once RAISA is introduced (e.g. associated with resistance to change, redesigning of service procedures) and offers recommendations to both robot manufacturers and tourism companies on how to face these challenges (Webster, Ivanov, 2017).

Taken together, the findings of the present study in terms of their demographic profile state that the majority of the employees and guests combined are 18-30 years old, female, single, with a college degree, with regular work in a rank and file position. On the other hand, the level of perception of the coexistence of service automation and human labor has arisen. On which the level of perception has been measured. According to the findings, the difference between efficiency, consistency, time phasing, and resolving issues from human labor and service automation is significant among customers, implying that there is a significant change and effect in efficiency, consistency, time phasing, and resolving issues between human labor and service automation for customers, while capitalization is more significant. However, the difference between efficiency, consistency, time phasing, and resolving issues from human labor and service automation is not significant from the employee, implying that there is no statistically

significant change and effect in the efficiency, consistency, time phasing, and resolving issues between human labor and service automation for customers, whereas capitalization is statistically significant for employees. Moreover, with proper planning and guidance by the concerned bodies (government, non-government organizations, & private sectors), it will be prevented and will balance the transitions of tasks. In addition, providing extensive training that corresponds to a higher level of task/s or responsibilities. (e.g., Berezina 2015; Marriott International, Inc., 2016, Hilton Honours, 2017; City Center Land, LLC, 2017; MGM International, 2017).

Everyone is still unsure about what the future holds when it comes to service automation, but one thing is for sure. Change is inevitable. Also, based on the articles and data gathered, we can slowly adapt service automation. In exchange, fast food restaurants should provide new training for their employees to improve their ability and capacity as employees, in collaboration with the government. The government can also create more opportunities and jobs for those who will be impacted by service automation. Institutions like states or universities should have a new curriculum in order to catch up with the advancements of this era.

CONCLUSIONS

In the food and beverage sector, the results demonstrate a considerable difference between service automation and human labor. According to the findings, the difference in efficiency, consistency, time phasing, and resolving issues from human labor and service automation is significant from customers, with a p-value less than the level of significance, which is 0.05 (0.0440, 0.0412, 0.0385, 0.0241 0.05); this means that there is a statistically significant change and effect in the efficiency, consistency, time phasing, and resolving issues between human labor and service automation for customers. However, the difference in efficiency, consistency, time phasing, and resolving issues between human labor and service automation is not statistically significant from the employee, with a p-value greater than the level of significance, which is 0.05 (0.6984, 0.4130, 0.5130, 0.1715 > 0.05); this means that there is no statistically significant change and effect in the efficiency, consistency, time phasing, and resolving issues between human labor and service automation for the

Service automation and human labor in terms of their functions like efficiency, consistency of standard quality of service and product, time phasing (can serve faster than the given span of time), and capital. It has the same level of acceptance from the employees and guests of the chosen food and beverage establishments. With almost the same rate given by the respondents, it differs in resolving issues/conflicts where human labor comes first. Compassion only exists in humans. With this kind of result, we can tell that people are still adapting to service automation slowly. Seeing how they accept the level of service that automation can offer.

As shown in the results, the efficiency of service automation is 3.91, whereas the efficiency of human labor is 3.86, indicating that the verbal interpretation is correct. In terms of consistency, service automation has a mean of 3.89, whereas human labor has a mean of 3.81, which can be linguistically understood as agree. In terms of time phasing, service automation has a mean of 3.94, while human labor has a mean of 3.61, which may be verbally understood as agree. In terms of capitalization, service automation has a mean of 3.52 whereas human labor has a mean of 3.64, which may be verbally understood as agree. In terms of problem resolution, service automation has a mean of 3.50, whereas human labor has a mean of 4.03, which is verbally understood as agree.

This indicates that the average weighted mean is 3.77, which is taken verbally as Agree.

In addition, service automation is more convenient than human labor. Thus, some believe that human intervention should remain in the tourism industry, as it possesses complexity that service automation doesn't have. Some points have been made like not all people understand automation, like giving instructions to old people, people with disabilities (PWD), etc., that's why it should be human. Also, service automation is too linear, and when there's a failure, automation can't function well. That will cause interruption to the operation of the said food and beverage establishments. On the contrary, most of the correspondents answered that service automation is a lot more convenient, given that service automation makes life easier, saves time, commits fewer mistakes, and puts no pressure on providing service to guests and employees. Adding to the fact that automation is a technology that we use in our everyday lives.

Practicality and convenience are two of the significant effects of weighing the effects of human labor and service automation. According to the result, 167 (41.75%) customers agree that service automation will improve convenience customer service rather than human labor while 68 (17.00%) employee says the same. In comparison, 39 (9.75%) customer states that service automation won't give more convenience in customer service than human labor while 126 (31.50%) employee states the same.

The consequences of service automation and human labor coexisting will mostly take over most customer service tasks or assignments, which are primarily in the food and beverage sector. It will implement mass change for employees as well as job interchange. When the Philippines completely implements service automation, the unemployment rate may rise. Despite the fact that some jobs may be lost, other jobs will be created that does not exist now (Manyika, Lund, Chui, Bughin, Woetzel, Batra, Ko, Sanghvi, 2017).

However, a look into corporate culture and identity, on the other hand, will need to be studied. A full understanding of employee attitudes towards service automation and how it fits into the corporate culture will teach a great deal with regards to how companies can incorporate new technologies into their operations while avoiding employee resistance and enhancing, rather than undermining, corporate culture/values (Webster, Ivanov, 2017).

Just like today, fast food businesses are currently taking huge steps in considering automation or artificial intelligence, just as they are today, and embracing the fact of rapid technological growth. When dealing with these new advancements, customers will

get an opulent, fascinating, and overwhelming feeling. With these advances, employees will need to offer more memorable and distinctive experiences in the future. (Mitankur (Mit) Majumbar, April 2016).

To end this, everyone is still unsure about how automation will affect us. However, we can gradually deploy service automation based on the articles and data obtained.

In exchange, fast food restaurants should provide new training for their employees in order to improve their skills and capacity as employees, with government collaboration.

The government can also expand possibilities and create jobs for those who will be impacted by service automation. In order to keep up with the advancements of this century, institutions such as state or university colleges and universities should develop new curricula. With suitable instructions and support from higher education institutions, the tourism industry, the government, and other related groups, coexistence will become a simple process to implement in the business.

RECOMMENDATIONS

There are some recommendations for future research. First, an evaluation of how demographic profiles like age, gender, civil status, educational attainment, employment status and employment level wish to be conducted.

Second, future research can assess and analyzed service automation in the whole sector of the tourism industry.

Third, future research can identify what jobs can be automated and what jobs cannot be automated in the food and beverage sector in 10 years.

Fourth, future researchers can assess the benefits of having service automation in the tourism industry. Future researchers can evaluate a variety of benefits not listed in the studies and examine how service automation functions in the market.

Fifth, they can assess the types and number of occupations that will be displaced by automation.

In addition, an imperative study will help in gathering more reliable data as it includes interviews and personal interactions. And lastly, larger sample size will help the study to have greater generalizability to the population.

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Appendices

Republic of the Philippines
Lyceum of the Philippines University
Claro M. Recto Academy of Advance Studies
Manila, Philippines

Sept. 02, 2019

Sir/ Maam,

Re: Permission to Conduct Research Study

Dear Sir,

Warmest Greetings!

I respectfully ask your permission to allow me to conduct a survey among employees in your organization. I am currently enrolled in Lyceum of the Philippines University and finishing my Master in International Tourism Management. At present, I am writing my graduate thesis entitled **"The Coexistence of Service Automation and Human Labor in Metro Manila in the Tourism Industry".** The study aspires to distinguish the level of importance and impact of service automation and human labor in tourism industry. The survey would last only about 10-15 minutes and would be arranged at a time convenient to employees' schedule (e.g during break). Participation in the survey is entirely voluntary and there are no known or anticipated risks to participation in this study. All information provided will be kept in utmost confidentiality and would be used only for academic purposes. The names of the respondents and the name of your company will not appear in any thesis or publications resulting from this study unless agreed to.

If you agree, kindly sign below acknowledging your consent and permission for me to conduct this survey at your organization and return the signed form on an enclosed envelop.

Your approval to conduct this study will be greatly appreciated. Thank you very much for your kind consideration and assistance with this research.

Noted by:

Respectfully yours,

Justine Mariella T. Abrigo
Researcher

Noted by:

Ma. Pagasa Nanette C. Rotario, Ph.D
Research Adviser

Approved by:

Jose Marie Gonzales, Ph.D
Graduate School Dean

Republic of the Philippines
Lyceum of the Philippines University
Claro M. Recto Academy of Advance Studies
Manila, Philippines

I, Master in International Tourism Management Student, is currently conducting a survey regarding my thesis study entitled **THE COEXISTENCE OF SERVICE AUTOMATION AND HUMAN LABOR IN METRO MANILA IN THE FOOD AND BEVERAGE SECTOR OF TOURISM INDUSTRY.** I humbly seek your time and support by answering the following questions honestly. Rest assured that all personal information provided here shall be handled with utmost confidentiality. Your cooperation will be very much appreciated. Thank you so much and God Bless.

INSTRUCTION: Kindly provide the following information. Answers should be based on your opinions, experiences, attitudes and available information.

PART I: DEMOGRAPHIC PROFILE

Name (optional): _____ **Date of Survey:** _____

Age: _____

Civil Status: _____

Gender: ( ) Male ( ) Female

Highest Educational Attainment: ( ) Elementary ( ) High School ( ) College ( ) Technical Vocational

Classifications: ( ) Internal (Officers/ Workers) ( ) External (Guests)

Employment Level: ( ) Managerial ( ) Supervisory ( ) Rank & File

PART II:

DIRECTION: Kindly read and analyze given information below. Put a check to the corresponding information you agree about.

Level of acceptance of service automation and human labor in terms of consumer perspective:

Human Laborers: It's a representation of human by exerting effort physically and mentally perform their task/s.

Service Automation: It's a system/ method that operates by a machine o electronic device. This is automatically operate/ functions without human interaction.

Examples of Service Automation: *Conveyor belt, Kiosk/s, Automated Ovens, Cutting and Forming Machines etc.*

Level of Acceptance of Service	Service Automation					Human Labour				
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Disagree	Strongly Disagree	Disagree	Undecided	Agree	Strongly Disagree
1. Efficiency										
2.Consistency of Standard Quality of Service and										
3. Time phasing										
4. Capital										
5.Resolving Issue/ Conflicts										

2. Does service automation gave more convenience in customer service than human do? Yes or No. If NO, kindly explain why.

_____

___

_____
_____
_____
_____

3. What is your opinion or impression in service automation after 10 years in tourism industry in the Philippines?

_____
_____
_____
_____
_____
_____

4. Recommendation

_____
_____
_____
_____
_____
_____

******Thank You and God Bless******

Frequencies

Notes

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Statistics

	AgeCate	CivilSt	Gender	HEA	EmpSta	EmploymentL	SA_EFFICI	SA_CONSISTE	SA_TIMEPH	SA_CAPITALIZAT	SA_RESOLVINGIS	HL_EFFICIE	HL_CONSISTE	HL_TIMEPHA	HL_CAPITALIZAT	HL_RESOLVINGIS	SERVICE_AUTOMATI

		gory	atus			tus	evel	ENT	NCY	ASING	ION	UES	NCY	NCY	SING	ION	UES	ON
N	Valid	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Frequency Table

Age Category

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30 years old and below	253	63.3	63.3	63.3
	31-40 years old	107	26.8	26.8	26.8
	41- 50 years old	31	7.7	7.7	7.7
	51 yeard old and above	9	2.2	2.2	2.2
	Total	400	100.0	100.0	

Civil Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	173	87.8	87.8	87.8
	Married	24	12.2	12.2	100.0

	Total	197	100.0	100.0	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	168	42.0	42.0	42.0
	Female	232	58.0	58.0	100.0
	Total	197	100.0	100.0	

HEA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	20	5.0	5.0	5.0
	College	334	83.5	83.5	88.5
	Graduate School	28	7.0	7.0	95.5
	Vocational	18	4.5	4.5	100.0
	Total	400	100.0	100.0	

Employment Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rank & File	332	83.0	83.0	83.0
	Supervisory	40	10.0	10.0	93.0
	Managerial	28	7.0	7.0	100.0
	Total	400	100.0	100.0	

SA_EFFICIENT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.5	.5	.5
	Disagree	10	5.1	5.1	5.6
	Undecided	31	15.7	15.7	21.3
	Agree	118	59.9	59.9	81.2
	Strongly Agree	37	18.8	18.8	100.0
	Total	197	100.0	100.0	

SA_CONSISTENCY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	1.5	1.5	1.5
	Disagree	11	5.6	5.6	7.1
	Undecided	37	18.8	18.8	25.9
	Agree	100	50.8	50.8	76.6
	Strongly Agree	46	23.4	23.4	100.0
	Total	197	100.0	100.0	

SA_TIMEPHASING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	2.5	2.5	2.5
	Disagree	13	6.6	6.6	9.1
	Undecided	28	14.2	14.2	23.4
	Agree	94	47.7	47.7	71.1
	Strongly Agree	57	28.9	28.9	100.0

	Total	197	100.0	100.0	

SA_CAPITALIZATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	10	5.1	5.1	5.1
	Disagree	19	9.6	9.6	14.7
	Undecided	48	24.4	24.4	39.1
	Agree	98	49.7	49.7	88.8
	Strongly Agree	22	11.2	11.2	100.0
	Total	197	100.0	100.0	

SA_RESOLVINGISSUES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	4.1	4.1	4.1
	Disagree	20	10.2	10.2	14.2
	Undecided	64	32.5	32.5	46.7
	Agree	77	39.1	39.1	85.8
	Strongly Agree	28	14.2	14.2	100.0
	Total	197	100.0	100.0	

HL_EFFICIENCY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.0	1.0	1.0
	Disagree	12	6.1	6.1	7.1
	Undecided	35	17.8	17.8	24.9

	Agree	111	56.3	56.3	81.2
	Strongly Agree	37	18.8	18.8	100.0
	Total	197	100.0	100.0	

HL_CONSISTENCY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.5	.5	.5
	Disagree	11	5.6	5.6	6.1
	Undecided	49	24.9	24.9	31.0
	Agree	99	50.3	50.3	81.2
	Strongly Agree	37	18.8	18.8	100.0
	Total	197	100.0	100.0	

HL_TIMEPHASING

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	18	9.1	9.1	9.1
	Undecided	65	33.0	33.0	42.1
	Agree	89	45.2	45.2	87.3
	Strongly Agree	25	12.7	12.7	100.0
	Total	197	100.0	100.0	

HL_CAPITALIZATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.0	1.0	1.0

	Disagree	13	6.6	6.6	7.6
	Undecided	67	34.0	34.0	41.6
	Agree	86	43.7	43.7	85.3
	Strongly Agree	29	14.7	14.7	100.0
	Total	197	100.0	100.0	

HL_RESOLVINGISSUES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	1.0	1.0	1.0
	Disagree	10	5.1	5.1	6.1
	Undecided	31	15.7	15.7	21.8
	Agree	92	46.7	46.7	68.5
	Strongly Agree	62	31.5	31.5	100.0
	Total	197	100.0	100.0	

SERVICE_AUTOMATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	163	82.7	82.7	82.7
	No	34	17.3	17.3	100.0
	Total	197	100.0	100.0	

Custom Tables

Notes

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	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
SA_EFFICIENT	1	10	31	118	37

SA_CONSISTENCY	3	11	37	100	46
SA_TIMEPHASING	5	13	28	94	57
SA_CAPITALIZATION	10	19	48	98	22
SA_RESOLVINGISSUES	8	20	64	77	28

Custom Tables

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	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
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HL_CONSISTENCY	1	11	49	99	37
HL_TIMEPHASING	0	18	65	89	25
HL_CAPITALIZATION	2	13	67	86	29
HL_RESOLVINGISSUES	2	10	31	92	62

Descriptives

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	Cases Used	All non-missing data are used.
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Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation

SA_EFFICIENT	197	1	5	3.91	.768
SA_CONSISTENCY	197	1	5	3.89	.879
SA_TIMEPHASING	197	1	5	3.94	.962
SA_CAPITALIZATION	197	1	5	3.52	.988
SA_RESOLVINGISSUES	197	1	5	3.49	.993
HL_EFFICIENCY	197	1	5	3.86	.827
HL_CONSISTENCY	197	1	5	3.81	.821
HL_TIMEPHASING	197	2	5	3.61	.823
HL_CAPITALIZATION	197	1	5	3.64	.849
HL_RESOLVINGISSUES	197	1	5	4.03	.877
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NPar Tests

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a. Based on availability of workspace memory.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
SA_EFFICIENT	197	3.91	.768	1	5
SA_CONSISTENCY	197	3.89	.879	1	5
SA_TIMEPHASING	197	3.94	.962	1	5
SA_CAPITALIZATION	197	3.52	.988	1	5

SA_RESOLVINGISSUES	197	3.49	.993	1	5
HL_EFFICIENCY	197	3.86	.827	1	5
HL_CONSISTENCY	197	3.81	.821	1	5
HL_TIMEPHASING	197	3.61	.823	2	5
HL_CAPITALIZATION	197	3.64	.849	1	5
HL_RESOLVINGISSUES	197	4.03	.877	1	5

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
HL_EFFICIENCY - SA_EFFICIENT	Negative Ranks	57[a]	48.67	2774.00
	Positive Ranks	43[b]	52.93	2276.00
	Ties	97[c]		
	Total	197		
HL_CONSISTENCY - SA_CONSISTENCY	Negative Ranks	58[d]	52.66	3054.50
	Positive Ranks	46[e]	52.29	2405.50
	Ties	93[f]		
	Total	197		
HL_TIMEPHASING - SA_TIMEPHASING	Negative Ranks	80[g]	59.78	4782.50
	Positive Ranks	36[h]	55.65	2003.50
	Ties	81[i]		
	Total	197		
HL_CAPITALIZATION - SA_CAPITALIZATION	Negative Ranks	49[j]	50.39	2469.00
	Positive Ranks	57[k]	56.18	3202.00
	Ties	91[l]		
	Total	197		

HL_RESOLVINGISSUES - SA_RESOLVINGISSUES	Negative Ranks	29[m]	55.52	1610.00
	Positive Ranks	89[n]	60.80	5411.00
	Ties	79[o]		
	Total	197		

Test Statistics[a]

	HL_EFFICIENCY - SA_EFFICIENT	HL_CONSISTENCY - SA_CONSISTENCY	HL_TIMEPHASING - SA_TIMEPHASING	HL_CAPITALIZATION - SA_CAPITALIZATION	HL_RESOLVINGISSUES - SA_RESOLVINGISSUES
Z	-.904[b]	-1.120[b]	-3.978[b]	-1.220[c]	-5.231[c]
Asymp. Sig. (2-tailed)	.366	.263	.000	.222	.000

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Justine Mariella T. Abrigo

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EDUCATION

Lyceum of the Philippines (2018- Present)

Muralla St. Intramuros 1002, Manila

Master of International Tourism Management

University of the East- Manila (2013-2017)

Claro M. Recto, Manila

Bachelor of Science in Tourism Management

Cum Laude

Achievements

- Tour Guiding Grand Champion 2015
  University of the East
- Quiz Bee Participant
  University of the East
- Academic Scholar
  University of the East
- Amadeus Airline Booking System- Certified
- Civil Service Eligibility

Professional Summary

A graduate of Bachelor of Science in Tourism Management- Cum Laude with Civil Service Eligibility.

Taking master's degree in International Tourism Management.

A dynamic aftersales analyst for a US based motor industry.

SKILLS

- Good communication skills.
- Interactive.
- Efficient.
- Customer service-oriented skills – Ability to deal with irate customers using excellent interpersonal-communication skills.
- Can easily adapt to changes.
- Ability to handle stress.
- Time Management
- Reliable.

Work Experience

OJT Trainee – Chalong Chalet Resort - Thailand (Dec. 2016- March 2017)

- Shadow to front office and food and beverage positions and train in a variety of tasks.

Front Officer

- Greet and welcome guest.
- Compiling of files.
- Attend to customer request/s.
- Answer questions and address customer complaint.

F&B Staff

- Greet customers and answer their questions about menu items and specials
- Provide assistance to the guest/s.
- Set up tables, clean and assist the customer.
- Worked in kitchen, cooking and washing the dishes.
- Take orders and room service.

Nidec US Motors

Inside Sales Analysts (2017- Present)

- Researching, analyzing and reporting data.
- Presenting reports to the management.
- Contributing to the development of sales plans and objectives.
- Providing actionable insights to guide the sales and marketing teams.
- Handling different accounts.
- Prepare report for internal clients internationally.
- Processing orders through Oracle.
- Providing quotation and negotiate with the suppliers.
- Develop projections and forecast.
- Providing product and knowledge to the client.

Work Experience

Lyceum of the Philippines University

College of International Tourism Management

Part time College Instructor (2020- Present)

- Teaching college students.
- Promotes or initiate discussion through online or face to face class set up.
- Conducting webinars/ programs.
- Prepare reports, modules, and monthly updates.
- Assessed students' performance throughout the semester.
- Conduct online teaching.
- Attending leadership trainings and webinars.

OLS World Inc.,

Digital Media Director (2020- 2021)

- Managing social media platforms.
- Create marketing strategies.
- Analyze trends and implementing it.
- Developed and planned company's goal to digital world.
- Managing overall digital interactions of the company.
- Site long term and short-term plans.
- Provide and analyze reports.
- Direct social campaigns and collaboration.
- Communicate to potential suppliers and clients.
- Deliver public relations.