



THE MANILEÑO URBAN JUNGLE: A STUDY TO DEFINE THE CONTEMPORARY ERA OF EMPLOYMENT BY RE-MODELLING THE JOB SEARCH THEORY THROUGH THE CHOICE OF COMMUTING DISTANCE BASED ON WORKERS RESIDING IN MANILA CITY

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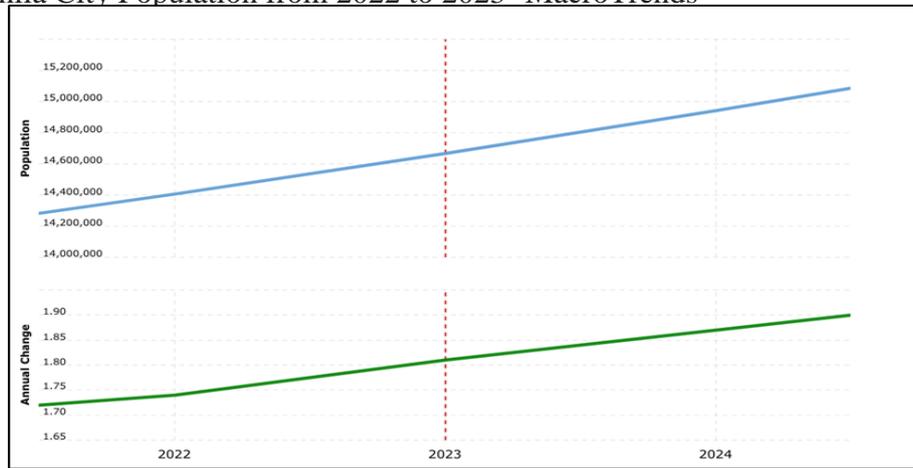
Abstract: Amidst the continuous emergence of the internet, the public transportation and employment sectors have always been the highlights of the major issues in the Philippines, and work commuters are constantly battling the hurdles of this economic problem. With this, the study aims to re-model the Job Search Theory through the use of employment factors such as age, sex, income, and the use of online job search platforms. The researchers' objectives also include proving the relationship of these employment factors with commuting distance, as a dependent variable. The collected data will be regressed using multiple regression through EViews software. The locus of the study circles around employed commuting workers residing in Manila.

Index Terms - Component, formatting, style, styling, insert.

I. INTRODUCTION

The City of Manila is the capital and chief city of the Philippines, located in the southwestern area of Luzon near the eastern shore of Manila Bay. Given its large land mass of 42.34 km², the city has over 15 million residents as of 2023 which indicated a 1.8% increase since the preceding year as per recent survey by the Philippine Statistics Authority (PSA).

Illustration 1.1: Manila City Population from 2022 to 2023 -MacroTrends



Given the statistics and the ratio between residents and geographics, Manila is a densely populated area. People from all around the country fly to this so-called Land of Opportunities to seek employment, education, and to get a grasp of city life, which then became a factor in becoming one of the most congested cities in the world (Guru Gobind Singh Indraprastha University, 2019). The city as part of the National Capital Region currently holds the highest daily minimum wage rate of P533-570 (Department of Labor and Employment, National Wages and Productivity Commission), which captivated and encouraged Filipinos living in rural areas to transfer.

Digitized job search platforms also emerged through the years, which mostly showcase available job spots in Metro Manila. By the 2000s, things settled down as companies continuously merged and competed to add the next great features (*History of the Online Job Search*, 2021, n.d.). In the Philippines, IndeedPH is one of the pioneer online platforms for available employment opportunities. This website along with other job-hunting web linkages caused a 15% online hiring increase in the fourth quarter of 2019 based on a study conducted by Job Search Platform Monster.

Aside from the internet as a factor of employment, numerous financiers and business owners base their enterprises in Metro Manila since it serves as the nation's capital and the hub of trade and commerce. Due to large businesses and the constant appearance of macro and microenterprises, Manila City has over 31,839 establishments as of the 2021 Updated List of Establishments by the Philippine Statistics Authority (PSA). This paved the way for a total of 276,015 total employed residents count, ranking third among the five largest cities in the National Capital Region.

Regardless of the city's dense population, with a growing percentage of *promdis* heading to and residing in the city, the nation's capital is still full of work opportunities. However, the salary range in Metro Manila is heavily influenced by the field of work and skill set. White-collar jobs are most likely have larger salaries as compared to blue-collar jobs, considering other factors such as education, experience, and expertise.

As a result of heavy employment, most people are expected to commute from their respective residences on a daily basis. Commuting is embedded in most workers' daily routines. Aside from those who work from home or telecommute, many of the employed personnel commute to jobs through private transportation, public vehicles, two-wheeler mobiles, or by walking (Kistler, 2022). Unfortunately, this has been one of the serious substantial problems in the country, mainly in Manila. The city is considered one of the Asian megacities that suffer from excessive traffic problems due to its urban density and astounding increase in vehicles roving the roads daily. According to a study conducted by GoShorty last 2022, the vehicle insurance company revealed that Manila City ranked 8 in a summarized list entitled *Worldwide Cities With The Highest Level of Congestion* out of 59 other cities.

Based on Table 1, Manila has a 43% congestion level with 98 annual hours lost due to traffic, which can be estimated as 4 days total per year. Commuters have to deal with this hurdle regardless of the mode of transportation and purpose of destination transfer.

The problem is primarily caused by the shortfall of a constrained transportation system in the nation along with other contributing factors such as lack of quality infrastructure and insufficient modes of mobility. Commuting in the metropolitan area has been marked by lengthy queues at train stations, passengers waiting by the roadside, overcrowded public transportation, and wasted hours in transit. These complications affect the commuters' everyday life, pertaining to their productivity, health, and even employment decisions.

Table 1.1: Worldwide Cities With The Highest Levels of Congestion, Rank 1-11- GoShorty

Rank	City, Country	Congesti on Level	Annual Hours
	Istanbul, Turkey	62%	142
	Bogota, Cambodia	55%	126
	Mumbai, India	53%	121
	Bucharest, Romania	50%	115
	Bengaluru, India	48%	110
	New Delhi, India	48%	110
	Lodz, Poland	45%	103
	Tel Aviv, Israel	43%	98
	Tokyo, Japan	43%	98
	Manila, Philippines	43%	98
	Lima, Peru	42%	96
	Krakow, Poland	42%	96
	Pune, India	42%	96

Considering the negative aspects, choosing to commute may be prohibitively costly, and acceptable costs vary by population. It may be easier for high-income commuters to opt for a longer-distance commute if they have more transportation options and costs, and the contrary among low-income commuters. Based on a study entitled *Oh, the Place You'll Go: The Effects of Commuting Time on Work, Family, and Health-Related Outcomes* conducted by Lauren Kistler last 2022, one of the main factor to consider when determining the effects on commuting on individuals is the place of employment. People determine where to reside and labor by taking into account the time spent on commute, cost of living, and income (Brucker & Rollins, 2019). People may choose to commute in farther distances for work due to better home environment, education opportunities for their children in a different area, or jobs opening good opportunities or higher wages that is situated at a large distance from their current residence (Roberts et al., 2011)

Focusing on work and employment, commuting affects the decision to participate in the labor force because an agent who enters the labor market has to incur a fixed cost of lost time needed for getting to and from work (Hensher and Button, 2010). This means that as a person lives farther from their work, their finances increase to accommodate costs. Changes in commuting also affect agents who already are working (Cogan 2003, 2009, 2016). Bontje (2004) also stated that employment de-concentration by getting jobs to the people is the proper way to increase employment and regional development.

As commuting distances have increased substantially (Rouwendal, 1998) along with other factors such as wages or income, the researchers aim to develop a job search model among the residents in Manila City by assessing the spatial optimal commuting distance. To further study the job search choices among individuals, it is crucial to consider the commuting distance and income of commuting individuals. Jan Rouwendal (2004) conducted a study regarding the search theory and behavior of commuters wherein the standard model for job search is used in labor economics as searchers look for jobs in a given residential location.

Job Search theory roots in the Neoclassical Labor supply theory which assumes there is perfect information and no room for employment (Economic School of Louvain, 2021). Therefore, this theory introduces imperfect information as it addresses two main questions: (a) How does an individual job-seeker behave in such settings? (b) Can this explain unemployment? The researchers aim to focus on how individuals seek jobs in Manila City concerning their commuting distance and wages; assuming that job-seekers are willing to commute such distances to Manila City as long the income is sufficient or high enough—considering the harsh labor conditions in the country.

The purpose of this study is to assess the behaviors of commuters residing in Manila City and to give relevance to the job search theory by modeling the relationship between income and other important factors (age, sex, and online job search platforms) to the choice of commuting distance.

1.2 Statement of the Problem

Focusing on the commuting distance of employed residents in Manila City, the study aims to determine if there is a significant relationship between the independent variables (age, sex, income, and usage online job search platforms) of the problem with the dependent variable (choice of commuting distance).

To be able to identify the relationship, the following objectives have been established by the researchers: (1) determine the importance of age, sex, income, and online job search platforms in affecting the individuals' employability and employment decisions through the Job Search Theory, (2) re-model the Job Search Theory by considering the new era of employment focusing on its digitization, (3) establish the relationship between the employment factors such as age, sex, income, and online job search platforms and choice of commuting distance from the respondents' residence and workplace.

Therefore, the researchers aim to reach the objectives through the following questions:

1. What is the importance of age, sex, income, and online job search platforms in affecting individuals' employability and employment decisions through the Job Search Theory?
2. Can the Job Search theory be expanded and inclusive, considering the new era of employment focusing on its digitalization?
3. What is the relationship between the employment factors such as age, sex, income, and online job search platforms and choice of commuting distance from the respondents' residence and workplace?

1.3 Significance of the Study

The results of this study can be utilized as a basis regarding the connection between the indicated employment factors and the employees' choice of commuting distance. It will also serve as a new and updated model for the Job Search Theory, absorbing the contemporary factors that have emerged throughout the years. The study would be of great support to the following:

Workers Residing in Manila. This study will aid and enlighten the workers residing in Manila regarding the relationship between their choice of commuting distance and employment factors. It could also offer a grasp of understanding of their career and employment choices considering all the variables that led to their employment decisions. The study could also be used as a job search tool for a more systematic approach that can be personalized based on their priorities amongst the variables.

Commuters. Since Metro Manila's public transportation and urban mobility still fall behind most of the world after both ranked among the worst cities across the globe in an Urban Mobility Readiness Index survey released last 2022 (Luna, 2022), it is important that the commuters get a view of the possibilities that they could encounter during their commute as a worker. This study could also help them strategize a better commute trip, considering firsthand the purpose of choosing their preferred commuting distance while maximizing employment opportunities.

The labor force population. Since the labor force participation rate as of February 2023 is at 66.6% from 64.5% the previous year (*Philippine Statistics Authority*), this study could be of great help to eligible laborers looking for job opportunities. Since the study indicated the importance of online job search platforms and their convenience and accessibility, this could assist them in swiftly grabbing employment opportunities that could best fit their skill sets and characteristics. The re-modeled job search theory could also be of assistance for a successful job hunt.

Employers. Employers looking for possible job candidates and workers could also benefit from this research since it covers a personalized view on behalf of the applicant's employment decisions. This could also cause awareness of job-related stereotypes regarding the age and sex of workers and break selection bias.

1.4 Scope and Limitations

The study only focuses on employed persons residing in Manila City and aims to know the relationship between the indicated employment factors and the workers' choice of commuting distance. The re-modeled Job Search Theory is also only solely based on Troshchenkov's earning and commuting equation (2015) and the status of the Philippine public transportation issue and data. The thoughts of the respondents will be the focus of the study; however, it does not generalize the opinion of employed Manila City residents as a whole.

This will only serve as a new representation of the initial Job Search Model made by Troshchenkov and does not replace the old model. Through re-modelling, by all means, is to make a more updated and relatable portrayal on the Philippines' employment system that consists of the selected

variables (age, sex, income, and online job search platforms) to be able to factor into account other fluctuating elements that are initially not included in the original model.

II. Review of Related Literature

Labor market is in constant flux, some workers quit their jobs, and other workers are laid off. Some firms shorten employment while other roots for expansion. New workers enter the market after completing their education, and many other workers reenter after spending some time in the non-market sector. (Deluna, Roperto, Berdos, et. al, 2015). Job search is and always will be an integral part of a moving and growing economy. Creating and acquiring jobs helps the economy by the *Gross Domestic Product* (GDP) since employers normally give out a percentage of the employee's purchasing power (Kircher, 2022).

However, the formal job search has undergone various alterations in the last two decades, especially with the move to online platforms. This gives out more process in the job search which allows researchers to intervene and improve the design of the job search process (Kircher, 2022). Amidst the changes, the essence of job search stayed intact. The economic job search theory assumes that people have imperfect information about jobs and wages. Finding an acceptable job takes time, and individuals must make decisions about their job search behavior, considering all factors that may apply (van den Burg & Uhlendorff, 2015).

Individuals take into account the commuting distance from their residence to the workplace as this is one of the job factors in the hiring process among firms. Numerous factors, including those related to human capital, jobs, the macroeconomic environment in the labour market as a whole, and the latent, unobserved tendency to commute, influence this decision. (Troshchenkov, 2012).

Carra, Mulalic, Barthelemy, et al. (2016) cited in their study entitled *Modelling the Relation Between Income and Commuting Distance* that comprehending mobility patterns is the primary issue in the evolution and the organization of urban systems, and it is related to the labor market. This then is also a key area of interest in economics, and where the choice of work and residential locations determines commuting. These interconnected ideas and disciplines led their study to focus on the idea that the job-search process has an immediate impact on the spatial distribution of commuting trips.

A study done by Sergi Troshchenkov (2012) aimed to examine the potential influence of wages in the decision-making phase on the choice to commute, as well as the covariance between unobserved features in earning and commuting equations. Commuting distances can also have an impact on labor force productivity, the hiring process, and the frequency with which people abandon their work (Wasmer and Zenou, 2006). Troshchenkov (2012) aims to determine the critical role of income in the decision-making phase of the choice to be a commuter in the succeeding time, as well as, to identify any possible association between overlooked variables in the equation of income and distance. In regard to that, earnings are held as reservation wage and an extension to the job search model has been added: self-selection to a commuter. The selection based on unobservable traits happens when there is a correlation between unobservable characteristics and unobservable factors regulating the individuals in the selection group's existence (Nakosteen et al., 2008). This study has been the basis for the researchers' independent and dependent variables.

2.1 Literature Review

2.1.1 Income to Choice of Commuting Distance

Ho1: *The amount of income has no relationship with the choice of commuting distance.*

The job search theory emphasizes how wages are positively related to commuting distance (Wasmer, 2009). Rupert, Wasmer, and Stacanelly (2010) have proved that wages and distances intertwine directly as there is a each commuter's fixed reservation distance and each wage rate has a fixed reservation. Rouwendal (1998) states how workers choose to commute being unemployed by using its unemployment benefits. In addition, the workers will realize that the higher the wage, the higher the competition, *ceteris paribus* (Narendranathan & Nickel, 1985). Hence, this entails that highly waged workers are more likely to commute.

A few recent studies also find a positive relationship between workplace income and commuting distance among the general population. In a short run, newly graduates or young adults, generally, might be more likely to accept longer commutes even if they are not compensated with higher income (French & Popovici, 2020). This is due to the fact that some young adults prioritize experience over income to build a strong career over time. The impact of the employer is also a factor for job acceptance regardless of longer

commutes and lower income. Big companies tend to offer better opportunities for young adults and this is therefore prioritized by individuals in younger groups.

In contrast, studies found that in analyzing the commuting distance and income variables in the labor pool, workers with higher incomes will have longer commuting distances, and it was observed that the average distance essentially grows with income (Barthelemy, Fosgerau & Mulalic, 2016). This is due to further available opportunities grabbed by the workers for an expanded growth of professional experience. Longer distances and journeys can still be afforded due to the higher availability of allotted financial resources.

El-Mehdi Aboukacem and Clément Nedoncelle (2022) have observed that when individuals are exposed to trade activities that result in augmented wages, they tend to choose residences closer to the historical center of Paris by extending their commuting distances.

2.11.1 Age to Choice of Commuting Distance

Ho2: *Age segmentation has no relationship with the choice of commuting distance.*

The opportunity cost of travel less the benefit gained from the time spent travelling is the value of time (VOT), an economic metric. Put another way, it's the cost of travel expressed as a currency per hour of travel time. This significant metric has been utilised for many years in policy analysis (e.g., project cost-benefit analysis, social cost analysis, pricing, etc.) and transportation modelling. It also provides insight into human behaviour from an economic standpoint. (Fournier & Christofa, 2020). According to a research entitled *On the Impact of Income, Age, and Travel Distance on the Value of Time* by Fournier and Christofa, the result revealed that through modeling VOT, there is a proven correlation between the economic measure and continuous interacting variables including age. As compared to commuting distance, it has a positive relationship with the value of time. Based on the results, older individuals ranging from ages 50 and above have a lower VOT than middle-aged travelers the highest. This may be influenced by the stages of life and its accompanying factors including fewer time restrictions as you get older and younger, or middle-aged income and responsibilities that are relatively higher. A study done by Antonio Páez and Steven Farber (2012), implies that the length of one's commute tends to increase with age until about the age of forty, at which time it begins to decrease. This confirms the results of studies by Schmöcker et al. (2005) and Mercado and Páez (2009) about the reduction in mobility that occurs as age increases.

2.11.1 Sex to Choice of Commuting Distance

Ho3: *There is no significant difference between females and males in the choice of commuting distance.*

Studies proved that people of younger age are more prone to commuting than older people (Booth, 2009) since older people acquire a more firm-specific capital while younger people are more likely to transfer jobs in between (Troshchenkov, 2012). This circulates with the idea that as age increases, commuting distances decrease due to more experience older individuals get. However, as there are substantial fixed costs on commuting (transportation costs), it is assumed that higher expenses will then occur, hence, older age with skills and experience are likely to have higher returns from the commuting cost.

The most recent American Community Survey data from the Census showed that changes are taking place for both younger and older commuters, particularly in the nation's biggest urban centers (Kane & Tomer, 2014). Results show that while baby boomers (ages 59-68) still utilize their cars frequently, millennials (ages 27-42) and Generation X (ages 43-58) are pushing for a variety of alternative modes, such as walking and public transportation. Young millennials also make up the majority of those who commute by walking (6.6 percent) and use public transportation (5.8%).

There is empirical evidence that men have longer commute distances and durations than women due to the dominant explanation that women have more household responsibilities than men (Chidambaram & Scheiner, 2020). Considering sex in effect to commuting distance is vital to assess the other growing determinants in correlation — there is a high probability that an educated single women is more likely to commute at longer distances than male with the same status. (Troshchenkov, 2012).

It would also appear that men taking late night trips have longer commuting distances comparison to women (Fournier & Christofa, 2020). It is difficult to determine why these distinctions exist, but some potential explanations include extra family obligations when commuting or the possibility of assault when traveling at night. For instance, while young women may not feel comfortable choosing a more pricey commute option or time of day, men at young age may feel at ease taking a public transport mobility at night.

Different travel results may emerge from differences in how men and women divide responsibilities, as well as their decisions for job and residence locations (Gimenez Nadal & Molina, 2016; Hu, 2021; Turner & Niemeier, 1997). While women's mobility patterns and underlying causes have altered

(e.g., increased commute distances, full-time and professional employment), a study done by Kihyun Kwon and Gulsah Akar (2021) show that sex differences persist, albeit narrowing over time.

Studies about sex differences in work-trip length found that women work closer to home than men, but few have investigated the reasons for this persistent finding, and none have done so at the metropolitan scale or considered the link between journey-to-work patterns and women's occupational segregation (Hanson & Johnston, 2013).

Women's work trips are substantially shorter than men's in both travel time and distance, as expected. Women's lower earnings, concentrating on female-dominated occupations, and higher dependence on bus and auto passenger modes all help to explain their shorter work trips. Male-female variations in part-time versus full-time work status, occupational group, and, most surprisingly, household responsibility did not have an impact on clarifying observed sex differences.

It was also found that women's shorter work trips may be explained by the difference in their home and work locations. Women outnumber men in the central city, where commutes are shorter, and there is some evidence that female-dominated employment opportunities are more evenly distributed, whereas male-dominated jobs are concentrated in specific districts.

Lastly, it was concluded that working women are more sensitive to distance than men are for reasons related to their mobility rather than their "dual roles" of wage earner/homemaker. Additionally, because women are more sensitive to traveling distance, the location of various kinds of employment possibilities appears to play an integral part in women's occupational segregation (Hanson & Johnston, 2013).

Men and women commute at different lengths; typically, women commute at a shorter distance. In Spain, for instance, the average commute for men and women is 22.8 minutes and 22.1 minutes, respectively. In United State, the standard distance for commuting in 2017 was 15.2 miles for men and 12.3 miles for women (Díaz, Albert, and Simón, 2023). The disparity in commuting distances may also be attributed to the fact that women tend to travel more frequently and for purposes other than work (Kwon and Akar, 2022).

2.1.4 Online Job Search Platforms to Choice of Commuting Distance

Ho4: The use of online job search platforms has no relationship with the choice of commuting distance.

Nowadays, recent graduates and most of the labor pool population use online job search websites to look for employment opportunities. According to Pew Research Center, like many other aspects of life, job seeking is going virtual: 28% of Americans have used a gadget as part of a job search, and half of these "job seekers" have used their technological devices to fill out a job application (Smith, 2015). Americans with comparatively low levels of education are inclined to heavily depend on their smartphones for online access in general, and this tendency is also evident in how these individuals use their smartphones for job searching.

Table 1.2: Top Job Hunting Websites in the Philippines as of March 2023

Rank	Website	Category
	indeed.com	Jobs and Career > Jobs and Employment
	jobstreet.com.ph	Jobs and Career > Jobs and Employment
	onlinejobs.ph	Jobs and Career > Jobs and Employment
	dmw.gov.ph	Jobs and Career > Jobs and Employment
	glassdoor.com	Jobs and Career > Jobs and Employment

Based on a recent report by *similarweb.com*, indeed.com ranks first among all online job search websites in the Philippines this March 2023, followed by jobstreet.com.ph, onlinejobs.ph, Dmw.gov.ph, and glassdoor.com in descending order.

Technological advances have changed the way we search for jobs. The internet provides global access to potential employers and their open positions, even during a crisis (Grasso, 2022). Online Job Hunting also skyrocketed ever since the COVID-19 pandemic started. The demand is the byproduct of restrictive health protocols and the threat of the quick transmission of COVID-19 (Nolasco, 2021). Even after the restrictions were slowly being reduced, the use of online job search platforms remained relevant.

Work-from-home (WFH) and hybrid set-ups became a part of the work system as a part of the new normal. Through these e-job search schemes, people remained employed across the country regardless of the employers' location.

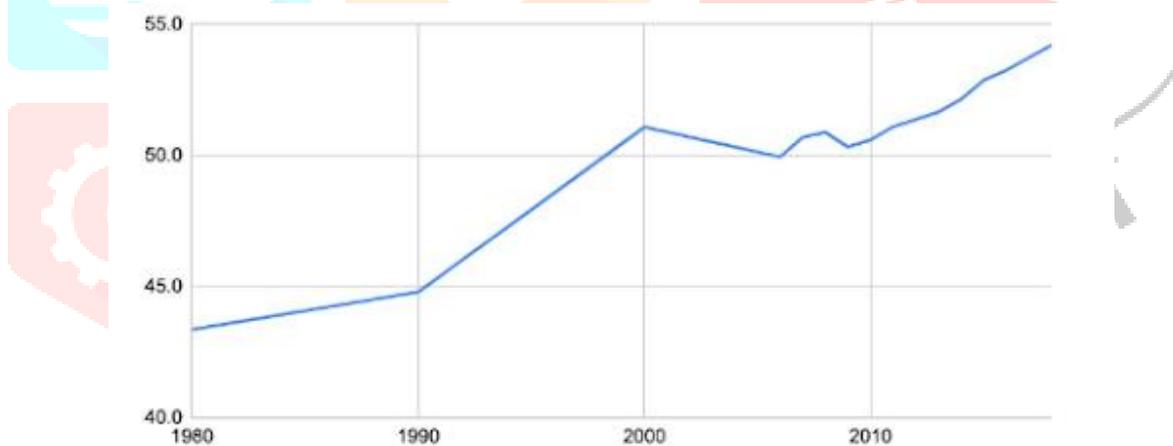
Not surprisingly, young adults are the demographic group most likely to engage in these online job-seeking behaviors (Smith, 2015). In a survey conducted by Statista (2023), based on the 4th quarter of 2016, 67% of the unemployed respondents that visited or used an online job search platform to look for employment opportunities were aged 16 to 24. This took up the majority of other age groups that answered the survey.

Constantine Angyridis and Haiwen Zhou (2022) researched "Search, Technology Choice, and Unemployment" to which findings show a rise in the unemployment benefit raises the equilibrium wage rate, providing an incentive for firms to adopt more advanced technology. Moreover, an increase in employees' negotiating power increases the unemployment rate while having an equivocal effect on the equilibrium level of technology and the pay rate.

Commuting distance is also proven to have a relationship with chances of recruitment. A study conducted by Dr. John Sullivan (2015) shows that commute issues can significantly affect hiring success and retention as more businesses adopt a data-supported approach to HR decision-making. In fact, a workforce science software company, Evolve, proved that even a very short commute distance of 0–5 miles leads employees to remain at their jobs for 20 percent longer (Echelon, 2021).

Due to the increasing number of engagements in online job-search platforms, individuals who seek employment tend to commute less. Commuting less is proven to save more money, hence earning more. The absence of a commute is among the biggest advantages of working from home. Lack of a commute can increase a person's overall happiness and work-life balance from a time-saving and productivity perspective (Ozimek, n.d.).

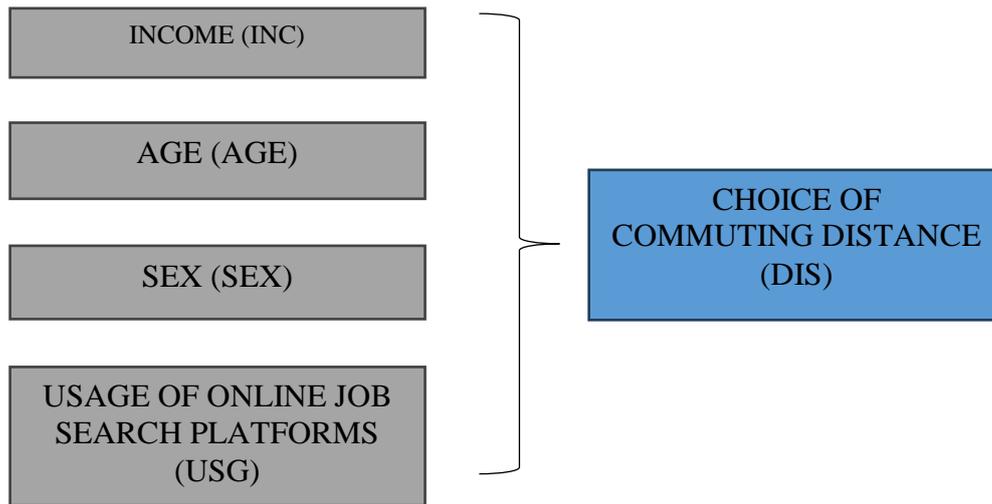
Illustration 1.2: Average Daily Commute Time since 1980 (Source: U.S. Census Bureau, Upwork)



According to Ozimek (based on Illustration 2), in 2018, the average daily commute of Americans was 54.2 minutes. In the context of commute time, this equates to 4.6 hours per week, 18.4 hours per month, and 9.5 whole days yearly. The average daily commute to work has risen by almost 11 minutes per day since 1980, which equates to a total of two days annually. And commutes are continuing to get longer. The environment, lifestyle, and household budgets are all severely impacted by this time loss.

Ever since the emergence of COVID-19 in mid-march of 2019, by reducing commuting, people have saved more than 4 days (4.13). Additionally, those who were already working remotely prior to COVID saved an additional 51 minutes each day by doing so. The researchers added online job search platforms as an affecting variable to commuting distance, proving the contemporary era of the Philippines.

2.12 Simulacrum



2.13 Theoretical Framework

Job Search Theory will be used to further re-model factors affecting the choice of commuting distance, mainly emphasizing wages. Alessandra Fagian (2014) states that the two fundamental publications by McCall (1970) and Mortensen (1971) are often regarded as the origins of job search theory (1970), to which the author conducted a study analyzing the developments of the job search theory through the formulation of the basic model and proceeds by removing and changing certain variables.

The very premise of Job Search Theory is the dynamic sequential process occurring when seeking a job and individuals must determine whether to halt this process in the face of uncertainty and faulty knowledge (Fagian, 2014). This study aims to use this theory in assessing the effect of the choice of commuting distance when seeking job employment.

In job search models, the decision process is sequential. There is no “optimal” sample size since the occupations are randomly picked one at a time and the individual stops when an appropriate job becomes available. Consequently, the number of jobs selected relies on their sequence and the sample size itself is a random variable (Mortensen 1986). Fagian (2014) then states that “the fundamental job search model is essentially an “optimal stopping rule” problem which can be expressed as follows:

$$w = \{w_1, w_2, w_3, \dots, w_n\}$$

Earnings connected with future employment offers are dispersed using a probability distribution $f(w)$. The goal of the job seeker is to maximize economic benefits (the future stream of income) revenue fewer search expenses).

The job search model is built on the following assumptions in its most basic form:

- i. Time is continuous; t denotes time periods of length h .
- ii. Although the seeker is unaware of the compensation connected with future job offers, the known probability distribution $f(w)$ is constant over time.
- iii. The cost of researching per unit of time is c .
- iv. Approval of a job offer results in permanent employment at a set monthly pay, w .
- v. The discount rate is denoted by r .
- vi. People have an endless lifetime.

III. RESEARCH METHOD

3.1 Research Design

The research design used in the study is quantitative and correlational in nature, wherein it targets to establish and measure the relationship or the absence of income between multiple variables namely age, sex, education, mode of transportation, and online job search platform on commuting distance. The needed particulars will be gathered through primary data gathering across age ranges and sex to collect necessary information on the indicated factors. The following economic models, statistical tests, and evaluations were executed by the researchers as part of their studies using a variety of statistical software as their main statistical tool. In order to fully understand the relationship between the variables and models used in their respective studies, the researchers of the aforementioned studies used several regression tests and techniques.

3.2 Study Site

The chosen study site for the researchers will be Manila City. The pool of respondents must be residents of or currently residing anywhere within the area and of legal working age.

3.3 Research Instrument

A primary data collection will be used by researchers to gather data for the study. The survey contains questions regarding the respondent's personal information that will be helpful in measuring the variables needed. The needed data and instruments were based on the study of Troshchenkov (2009) and G Carra et. al. (2016) whose needed data are based on nationally conducted surveys.

The online surveys will be accessed through social media such as Facebook, Instagram, Twitter, and Messenger by links and QR codes.

3.4 Data Collection Procedure

To be able to gather the necessary information, primary data gathering will be used. The researchers will be conducting an online survey to be distributed among employed Manila residents. The following variables will be used as well as their respective measurements: (1) The Commuting Distance will be measured in kilometers based on a rough estimation or calculated distance route by the respondents and researchers. Google Maps will be used as a tool to measure the distance from residence to workplace. (2) Income will be measured in pesos, and on a monthly basis. (3) Age as a discrete data will be indicated as long as the respondents are eligible legal workers. (4) Sex will be assessed through male and female categories only. (5) Lastly, Online Job Search Platforms as nominal data will only be collected through a close-ended question.

3.5 Sampling Technique

Simple random sampling is a form of sample selection in which a group of respondents is chosen at random from a population (Thomas, 2020), and is intended to be a fair portrayal of a population (Hayes, 2023).

Simple random is a statistical method in which every individual in a population has an equal probability of being chosen for a sample. The sample represents a smaller, more manageable subset of the population that may be examined and analyzed. This is a significant strategy for acquiring data and drawing conclusions about a population. Thus, this is regarded as a fair and unbiased approach to sample selection. This is the most straightforward way of sample selection (Fleetwood, n.d).

3.6 Population and Sample of the Study

To identify the population and sample of the study, Yamane's (1967) formula was used to calculate the number of respondents using the equation below:

$$*n = \frac{N}{1 + N(e)^2}$$

Where:

n = Sample size

N = Population size

e = Level of precision or Sampling Error which is 5%.

Therefore,

$$= \frac{276,015}{1 + 276,015(0.05)^2}$$

* $n = 400$ respondents

3.7 Data Analysis

Based on the 2021 Updated List of Establishments by the Philippine Statistics Authority (PSA), 276,015 were employed residents in Manila. Yamane's formula will be used since the population size is identified and the margin of error that will be used is 5% or 0.5 as this will correspond to the 95% confidence interval (Hayes, 2022). Hence, the sample size is 400 respondents.

3.7.1 Data Analysis Procedure

Initially, the researchers are planning to use Ordinary Least Squares (OLS) as a regression method, however, this study acknowledges the associated risk and presence of heteroskedasticity in a cross-sectional data. That is why if the study fails the homoscedastic assumption, the researchers will employ Weighted Least Squares instead. These results will be processed and regressed through Eviews software using multiple regression analysis. The variables were grouped into two, grouping (1) income and age together, and (2) sex and usage of job search platforms. The two groups will have separate econometric models, segregating those factors with dummy variables. Prerequisites of the respondents and data encoded on Microsoft Excel will be needed in the data instrument. Information regarding the respondents such as age, gender, job search platforms, and income will be used as variables for measurement.

3.7.2 Job Search Econometric Model

Various studies conducted on migration and transportation and many authors have developed gravity models. The ability to employ a wider variety of tools to simulate spatial relationships was these models' principal benefit (de Vries et al., 2000). This model was created to predict and analyze the fundamental significance of shifting demographics and policies on migration. The flow T_{ij} from location i to location j is equated as:

$$T_{ij} = V_i W_j F_{ij}$$

where:

V_i = the size of municipality i

W_j = The size of recipient municipality j

F_{ij} = The transport facility between two regions.

The goal of this study is to model the relationship between income and other variables to commuting distance. Troschenkov (2012) and Rupert et.al (2009) studied how income and other factors influence commuting distance for job search. However, living in a contemporary world with various access to media—the researchers have added usage of online job search platforms to the model.

This study explores the relationship of employee's tendency for commuting to work expressed in Kilometers [dis] to Age expressed in annual terms [age], Income expressed in Philippine Peso [inc], Sex of either male or female [sex] and usage of social media of either yes or no [usg] with 400 observations.

where:

i. dis being the dependent variable while;

ii. age , inc , sex , & usg being the independent variables

This research also divides the independent variables into two distinct and separate econometric models:

$$dis = \underline{B}_0 + B_{age} + B_{inc} + u$$

where;

\underline{B}_0 = being the constant term

u = being the error term, and all other variables explained above

$$dis = \underline{B}_0 + B_{sexd} + B_{usgd} + u$$

where;

\underline{B}_0 = being the constant term

d = expressing that the variable is a dummy,

$sexd$; 1 = male, 0 = otherwise (female)

$usgd; 1 = \text{yes}, 0 = \text{otherview (no)}$

u = being the error term, and all other variables explained above.

The independent variables were divided because of the inherent difference in the nature of the variable such that **sex** & **usg** are dichotomy, which means to say that the data makeup of both variables are transformed into 0's and 1's as presented in the second (b) econometric model above.

3.2 Data and Sources of Data

For this study secondary data has been collected. From the website of KSE the monthly stock prices for the sample firms are obtained from Jan 2010 to Dec 2014. And from the website of SBP the data for the macroeconomic variables are collected for the period of five years. The time series monthly data is collected on stock prices for sample firms and relative macroeconomic variables for the period of 5 years. The data collection period is ranging from January 2010 to Dec 2014. Monthly prices of KSE -100 Index is taken from yahoo finance.

3.3 Theoretical framework

Variables of the study contains dependent and independent variable. The study used pre-specified method for the selection of variables. The study used the Stock returns are as dependent variable. From the share price of the firm the Stock returns are calculated. Rate of a stock salable at stock market is known as stock price.

Systematic risk is the only independent variable for the CAPM and inflation, interest rate, oil prices and exchange rate are the independent variables for APT model.

Consumer Price Index (CPI) is used as a proxy in this study for inflation rate. CPI is a wide basic measure to compute usual variation in prices of goods and services throughout a particular time period. It is assumed that rise in inflation is inversely associated to security prices because Inflation is at last turned into nominal interest rate and change in nominal interest rates caused change in discount rate so discount rate increase due to increase in inflation rate and increase in discount rate leads to decrease the cash flow's present value (Jecheche, 2010). The purchasing power of money decreased due to inflation, and due to which the investors demand high rate of return, and the prices decreased with increase in required rate of return (Iqbal et al, 2010).

IV. RESULTS AND DISCUSSION

In this section, the researchers will dwell into the results of econometric model a and econometric model b. Based on the results gathered, the researchers will draw a conclusion whether the hypotheses will be accepted or rejected. The decision will be based on the p-value and the r-squared value of each variable.

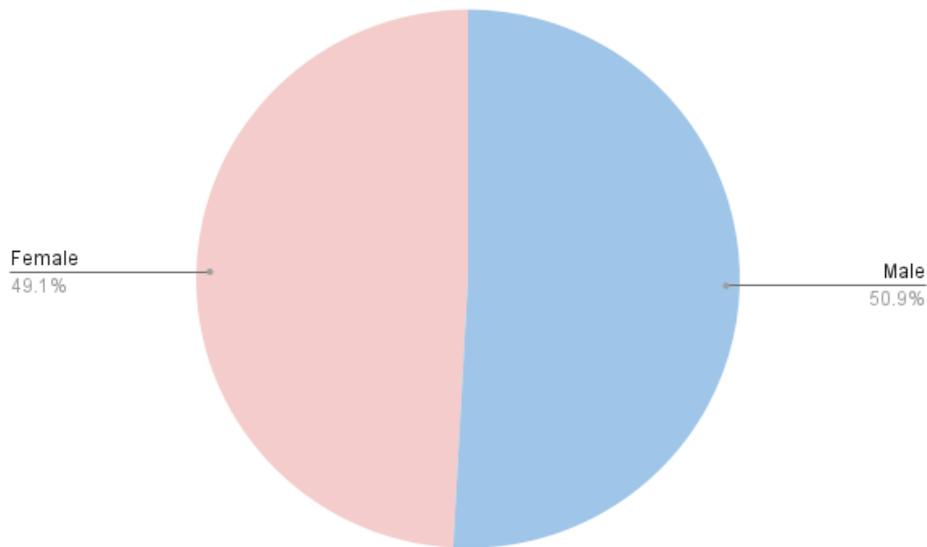
4.1 Descriptive Statistics

To be able to run regression methods and data analysis, the researchers surveyed a total of 400 respondents to be able to draw a precise conclusion.

Demographics

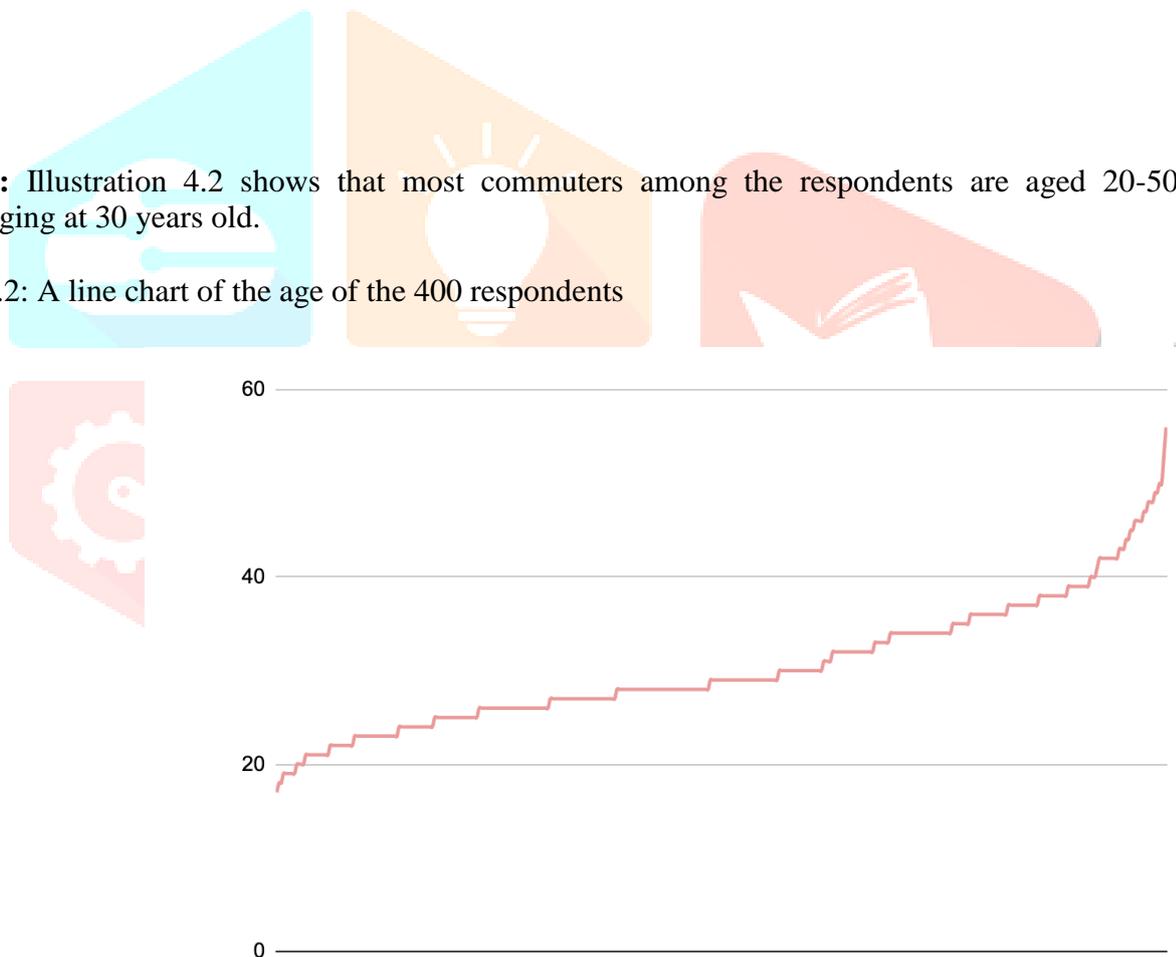
SEX: The chart below illustrates that among the 400 observations, 51% are male and 49% are female. Based on illustration 4.1, male commuters dominate female commuters by 1.8%. The differences between the two percentages for the sex variable is slim to none.

Fig 4.1: The percentage of males and females among the 400 observations.



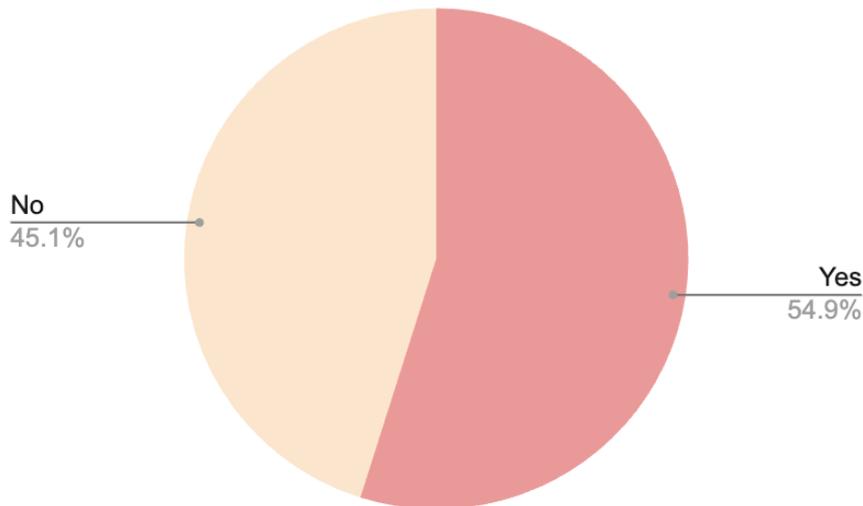
AGE: Illustration 4.2 shows that most commuters among the respondents are aged 20-50 years old, averaging at 30 years old.

Fig 4.2: A line chart of the age of the 400 respondents



THE USE OF ONLINE JOB SEARCH PLATFORMS: 54.9% of the observations have been reported to using online platforms for job search, while 45.1% did not use any online tool.

Fig 4.3: A line chart of the age of the 400 respondents.



4.2 Statistical Empirical

In this section, the researchers will dwell into the results of econometric model *a* and econometric model *b*. Based on the results gathered, the researchers will draw a conclusion whether the hypotheses will be accepted or rejected.

Along the way, the researchers encountered minor conflicts when examining the results of the survey. Although the respondents were completely randomized and diverse, the presence of outliers were evident. In this case of the study involving 400 respondents, the decision to reduce the sample size was driven by the imperative to exclude data points that substantially differed from the overall pattern, specifically for the income [inc] and commuting distance [dis] variables. These outliers may hamper the statistical power of the data and exacerbate the variability of the dataset. (Frost, 2021) Correspondingly, the extremes (low and high) for each variable were removed to increase the robustness of the findings, enabling a more accurate representation of the relationships and trends within the data, and fostering a more sensible and significant result.

Due to the reductions of outliers, out of the 400 respondents, the total respondents that were left to be regressed were 189.

Regression Results for Econometric Model A

$$dis = B_0 + B_{age} + B_{inc} + u$$

4.2a. Regression Analysis in Ordinary Least Squares

The study intended to use Ordinary Least Squares to look at the relationship of age and income to the tendency of an employee to commute to work, expressed in distance (km). By using the student limited version of Eviews 12 software, the study obtained the regression result below:

Model A: OLS, Included observations: 189**Dependent variable: DIS**

Table 4.1 OLS for Model A

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Probability (P- Value)</i>
C	12.72589	1.219005	10.43957	0.0000
AGE	-0.102783	0.040006	-2.569154	0.0110
INC	2.49E-05	1.35E-05	1.842028	0.0671
R- squared	0.044508			
Adjusted R-squared	0.034234			
Prob (F-Statistics)	0.014491			

To ensure the reliability of the regression results, the study employed diagnostic tests according to the applicable assumptions of a cross-sectional study.

4.2b. Multicollinearity test (Variance Inflation factors)

Table 4.2 Multicollinearity test

Variance Inflation Factors	
Variable	Centered VIF
C	NA
Age	1.028177
Inc	1.028177

According to the results, focusing on the centered VIF, **age** & **inc** are not correlated with each other, expressing inherent independence of variables against each other. [Given by 1.028177 C VIF]

4.2c. Normality of Residuals

The results show that the residuals are normally distributed, given by the Jarque-Bera value of 1.226 which translates to p-value of 0.541, indicating normal distribution.

Graph 4.1 Normality of Residuals for Model A

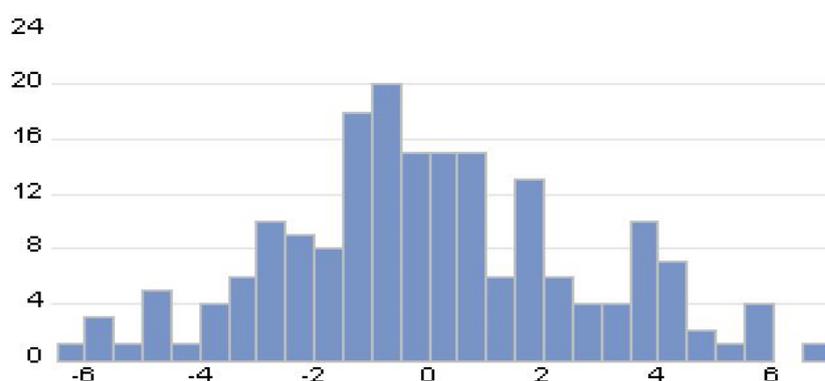


Table 4.3 Normality of Residuals

Jarque-Bera	1.225838
P-Value	0.541767

4.2d Specification test (Ramsey-RESET Test)

The test shows that the model is correctly specified, showing p-values of t-statistic and f-statistic greater than 0.05.

(1) t-stat p-value: 0.734

(2) f-stat p-value: 0.734

Table 4.4 Ramsey-RESET for Model A

Ramsey- RESET Test			
	Value	df	Probability (P-Value)
t-statistics	0.340859	185	0.7336
F- statistics	0.116185	(1,185)	0.7336

4.1.c Heteroscedasticity Test (Breusch-Pagan-Godfrey Test)

Even with prior tests passing the assumptions applicable in the study, the econometric model with OLS shows the presence of heteroskedasticity as given by the p-values of the f-stat and observed r-squared 0.0149 and 0.0153 respectively.

Table 4.5 Heteroscedasticity Test for Model A

Heteroskedasticity Test: Breusch-Pagan-Godfrey	
Null Hypothesis: Homoskedasticity	
F - Statistics	4.301473
Obs*R-squared	8.355252
Prob. F (2,186)	0.0149
Prob. Chi Square (2)	0.0153
Prob. Chi-Square (2)	0.0282

The problem of heteroscedasticity

The presence of heteroskedasticity in a regression implies that the estimated variance of the regression is not constant. The non-constant variance shows that the regression results obtained earlier might be biased or unreliable. Therefore, a conclusion cannot be made. To correct the presence of the heteroskedasticity, the study employed another type of regression called Weighted Least Squares (WLS).

Table 4.6

OLS

Method: Least Squares; Heteroskedasticity test	
Variable	Probability (P-Value)
Constant (C)	0.0383
Age (AGE)	0.1078
Income (INC)	0.0080

To conduct WLS, the study looked for which independent variable exhibits a more varied dataset. From the initial Heteroskedasticity test, the result shows 6_RR_OLS that Age has a p-value of 0.1078 while income has a p-value of 0.0080. This indicates that Income exhibits a heteroskedastic dataset. Thus, INC will be used as the variable to be weighted.

4.3 REGRESSION ANALYSIS (econometric model a) in Weighted Least Squares

To further check the reliability of the regression results, the study conducted the same set of diagnostic testing conducted in the OLS version of the regression.

Model A: WLS, Included observations: 189

Dependent variable: DIS

Weighting series: INC^(-0.5) Weight Type: Inverse Standard Deviation

Table 4.7 WLS for Model A

	Coefficient	Std. Error	t-Statistic	Probability (P- Value)
C	12.72589	1.219005	10.43957	0.0000
AGE	-0.102783	0.040006	-2.569154	0.0110
INC	2.49E-05	1.35E-05	1.842028	0.0671
R- squared	0.044508			
Adjusted squared	R-	0.034234		
Prob (F-Statistics)	0.014491			

4.3a. Multicollinearity test (Variance Inflation factors)

Table 4.8 Multicollinearity test for Model A

Variance Inflation Factors	
Variable	Centered VIF
C	NA
Age	1.027765
Inc	1.027765

In this test, the study obtained a Centered VIF value of 1.0278 which indicates that there is no presence of multicollinearity.

4.3b. Normality of Residuals

In this test, the result shows that the residuals are normally distributed, given by the Jarque-Bera value of 1.3725 and a p-value of 0.503.

Graph 4.2 Normality of Residuals for Model A

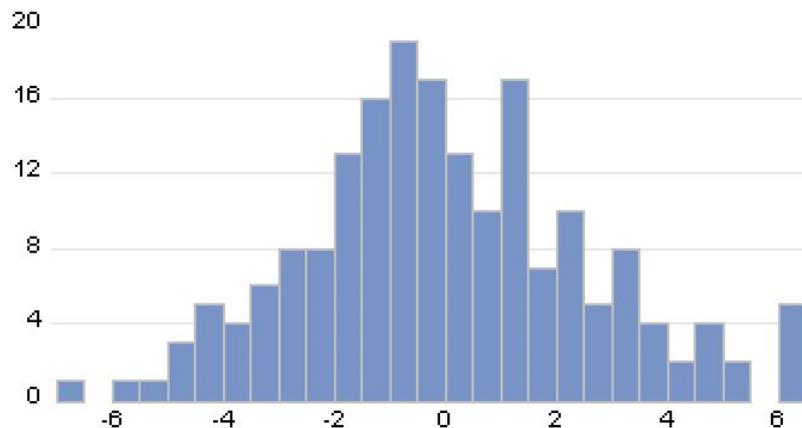


Table 4.9 Normality of Residuals

Jarque-Bera	1.372521
P-Value	0.503455

The graph and table tells the study that residuals are in normal distribution.

4.2c Specification test (Ramsey-RESET Test)

To check for the misspecification of the econometric model in WLS, the study obtained p-values of t-stat and f-stat of 0.9747 which indicates that the econometric model in WLS is correctly specified.

- (1) t-stat p-value: 0.9747
- (2) f-stat p-value: 0.9747

Table 4.10 WLS Ramsey-RESET for Model A

Ramsey- RESET Test			
	Value	df	Probability (P-Value)
t-statistics	0.031790	185	0.9747
F- statistics	0.001011	(1,185)	0.9747

4.2d Heteroscedasticity Test (Breusch-Pagan-Godfrey Test)

Since the study already employed Weighted Least Squares to correct the presence of Heteroskedasticity, the study still checked if heteroskedasticity persists in the regression. From the results above, the study obtained p-values of 0.2534 for both F-stat and Observed r-squared, implying that the regression is now homoscedastic and credible to form conclusions.

Table 4.11 WLS Heteroscedasticity Test for Model A

Heteroskedasticity Test: Breusch-Pagan-Godfrey	
Null Hypothesis: Homoskedasticity	
F - Statistics	1.383115
Obs*R-squared	2.769655
Prob. F (2,186)	0.2534
Prob. Chi Square (2)	0.2504
Prob. Chi-Square (2)	0.2631

FINAL REGRESSION RESULT FOR ECONOMETRIC MODEL A

$$\text{dis} = 11.99829 - 0.090481\text{age} + 0.000034\text{inc} + u$$

Table 4.12 The P-value of age and income. .

Variable	P-value
Age (age)	0.0197
Income (inc)	0.0135
R-Squared	
	0.050414 (5.04%)

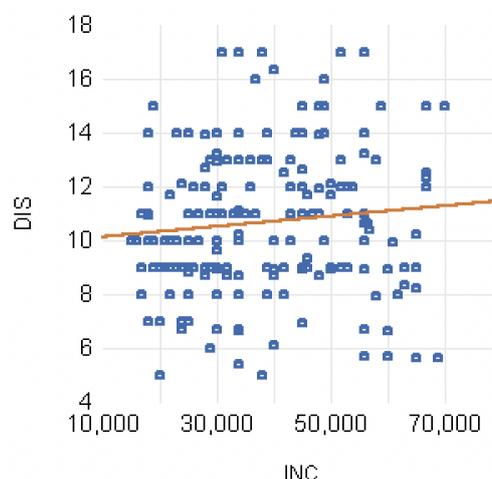
Age and Income has a significant relationship with the tendency of an employee to commute to work (distance). The goodness of fit of the scatter plot to the regression line is at 5.04%

Discussion and Conclusion 1:

Ho1: The amount of income has no relationship with the choice of commuting distance.

Discussion A: The relationship of Income (inc) to the choice of commuting distance (dis) is direct. The direct relationship of the variables implies that the higher the income, the more likely it is for an employee to commute to work. This direct relationship can be observed in the graph.

Graph 4.3 The relationship of income to the choice of commuting distance.



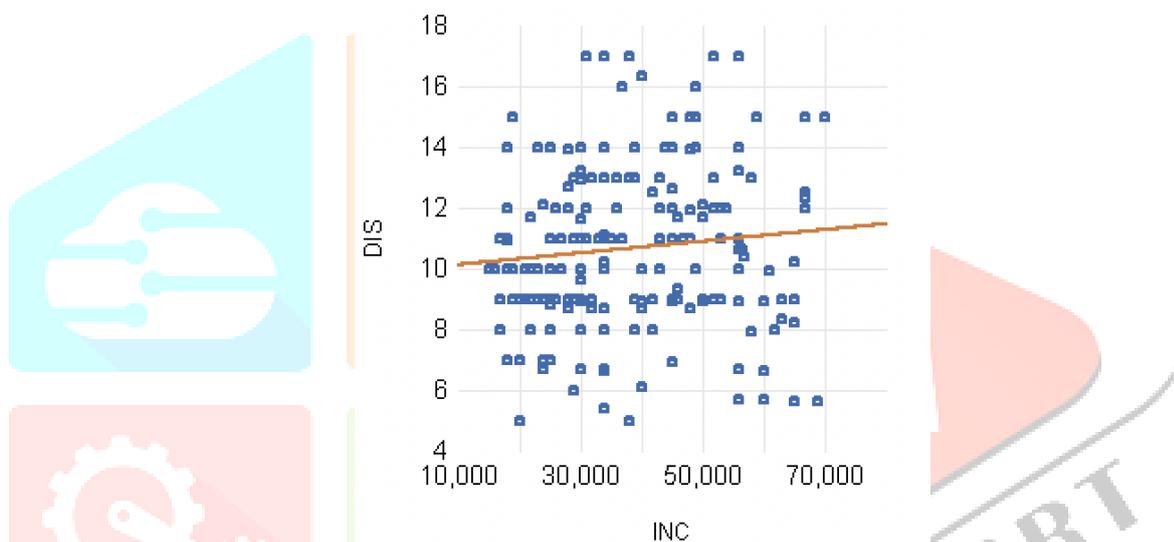
The orange line is the regression line representing 0.000034, a positive slope that depicts an upward sloping curve. This further implies that a peso increase in income translates to an additional 0.000034km of distance that employees are willing to commute to work.

These findings align with the theory that higher incomes afford individuals the means to access job opportunities, which may cause longer commutes. It also illustrates how socio-economic variables play a role in how people choose to commute, where individuals with higher earnings choose to reside in areas with better amenities but farther from their place of employment (Dargay, 2005).

However, the results acknowledge any external influences and confounding variables that could impact this relationship. For instance, the accessibility and effectiveness of public transport, urban planning, family set-up and the region's geographical layout that may all have a significant impact on how people commute (Zhang, Tang & Gao, 2023).

Discussion B: The relationship of Income (inc) to the tendency of an employee to commute to work (dis) is direct. The direct relationship of the variables implies that the higher the income, the more likely it is for an employee to commute to work. This direct relationship can be observed in the graph.

Graph 4.5 The relationship of income to the choice of commuting distance.



The orange line is the regression line representing 0.000034, a positive slope that depicts an upward sloping curve. This further implies that a peso increase in income translates to an additional 0.000034km of distance that employees are willing to commute to work.

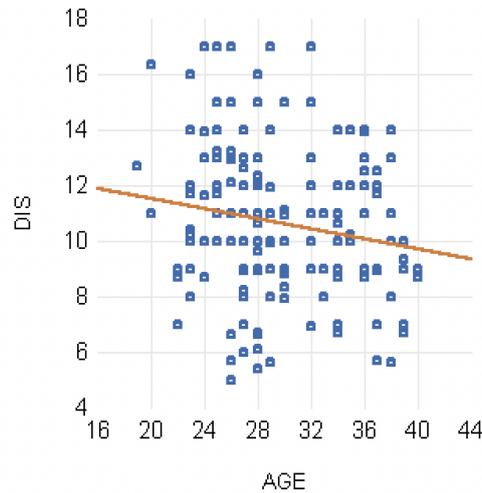
Discussion and Conclusion 2:

Ho2: Age segmentation has no relationship with the choice of commuting distance

Discussion: The relationship of age to the choice of commuting distance of an employee to work (dis) is inverse.

This inverse relationship means that the younger the employee, the more it is inclined to commute to work. The older an employee, the less inclined to commute to work. The relationship can be observed on the graph.

Graph 4.4 The relationship of age to the choice of commuting distance.



The orange line is the regression line, representing -0.090481 , a negative slope that depicts a downward sloping curve. This further implies that 1 year of increase in age corresponds to a decrease of the distance by 0.090481 km that an employee is willing to commute to work.

The inverse relationship of age and commuting distance correlates with the sociological and psychological findings that propose that as people move through different periods of life, their priorities, lifestyle preferences, and work arrangements shift as well (Paez & Farber, 2012).

4.2 Regression Results for Econometric Model B

$$\text{dis} = B_0 + B_{\text{sexd}} + B_{\text{usgd}} + u$$

The study intended to use Ordinary Least Squares to look at the relationship of sex (whether male or female) and usage of social media (whether yes or no) to the tendency of an employee to commute to work, expressed in distance (km). By using the student limited version of Eviews 12 software, the study obtained the regression result below.

Table 4.13 OLS for Model B.

	Coefficient	Std. Error	t-Statistic	Probability (P- Value)
C	10.12330	0.369595	27.39027	0.0000
SEX	-0.087290	0.391519	-0.222953	0.8238
USG	0.964342	0.395954	2.435489	0.0158
R- squared	0.032770			
Adjusted R-squared	0.022369			
Prob (F-Statistics)	0.045111			

To ensure the reliability of the regression results, the study employed diagnostic tests according to the applicable assumptions of a cross-sectional study.

1. Multicollinearity (Variance Inflation Factors)

Table 4.14 Multicollinearity test for Model B.

Variance Inflation Factors	
Variable	Centered VIF
C	NA
SEX	1.024683
USG	1.024693

The probability of a presence of multicollinearity in a regression with dummy variables is low, and sometimes can be dismissed with prior justifications. However, the study was still conducted to check for the robustness of the regression results. Obtaining a Centered VIF value of 1.025, the regression is free from the presence of multicollinearity.

2. Normality of Residuals

Employing the Jarque-Bera test, the study confirms that the residuals are normally distributed. The graph below shows the normality of residuals for Model A.

Graph 4.6 Normality of Residuals for Model A

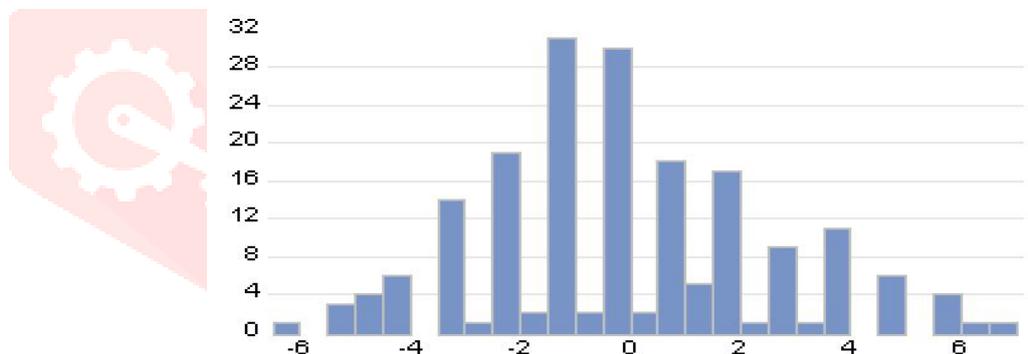


Table 4.15 Normality of Residuals

Jarque-Bera	2.980402
P-Value	0.225327

3. Specification test (Ramsey-RESET Test)

The study conducted a specification test to see if the regression model is correctly specified. From the p-value obtained for both t-stat and f-stat (0.1047), the model is correctly specified.

(1) t-stat p-value: 0.1047

(2) f-stat p-value: 0.1047

Table 4.16 OLS Ramsey-RESET for Model B

Ramsey- RESET Test			
	Value	df	Probability (P-Value)
t-statistics	0.031790	185	0.1047
F- statistics	0.001011	(1,185)	0.1047

4. Heteroskedasticity test (Breusch-Pagan-Godfrey)

To check for the existence of heteroskedasticity, the study employed Breush-Pagan-Godfrey test. With f-statistic p-value of 0.9065 and Observed r-squared p-value of 0.9052, the test confirms that the regression is homoskedastic.

Table 4.17 OLS Heteroskedasticity Test for Model B

Heteroscedasticity Test: Breusch-Pagan-Godfrey	
Null Hypothesis: Homoskedasticity	
F - Statistics	0.098170
Obs*R-squared	0.199296
Prob. F (2,186)	0.9065
Prob. Chi Square (2)	0.9052
Prob. Chi-Square (2)	0.9167

FINAL REGRESSION RESULT FOR ECONOMETRIC MODEL B

$$\text{dis} = 10.12330 - 0.087290\text{sexd} + 0.964342\text{usgd} + u$$

Table 4.18 The P-value of Sex and Usage of Online Job Search Platforms.

Variable	P-value
Sex (sex)	0.8238
Usage of Online Job Search Platforms (usg)	0.0158
R-Squared	
	0.032770 (3.27%)

This shows that sex has no significant relationship to an employee's tendency to commute to work while the usage of social media has a significant relationship. The goodness of fit is at 3.27%.

Discussion and Conclusion 3:

Ho3: There is no significant difference between females and males in the choice of commuting distance.

Discussion: The study cannot draw a conclusion on sex since the p-value 0.8234 did not pass at any significance level. Sex is not a determinant of an employee's tendency to commute to work.

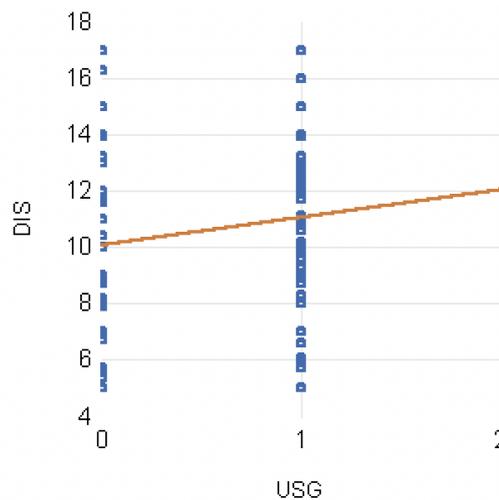
This finding prompts an intriguing exploration of gender dynamics in the context of work-related travel. It calls into question long-held beliefs regarding gender-specific preferences in commuting and highlights the potential impact of shifting sex roles and societal transformations on commuting practices. This also supports the fact that there has been conflicting evidence regarding sex disparities in commute behavior, and existing studies has not focused much on determining the size of these gaps and how they change over time (Chidambaram & Scheiner, 2020; Gimenez-Nadal & Molina, 2016).

It is vital to recognize, nonetheless, that the lack of a substantial difference does not imply total homogeneity in commuting behaviors across sexes.

Discussion and Conclusion 4:

Ho4: *The use of online job search platforms has no relationship with the choice of commuting distance.*

Graph 4.7 OLS Heteroscedasticity Test for Model B



Usage of social media has a significant relationship to an employee's tendency to commute to work. The positive value of the coefficient under **usg** shows that there is a direct relationship between variables. This denotes that people who use social media for job search tend to commute to work more than the reference group (those who answered no from the sample). This further implies that people who use social media to search for jobs are more willing to travel by an average estimate of 0.0158 km more than those who do not.

Interestingly, this might be a new finding among people who use job search platforms to look for employment. Recently, job search platforms are more personalized and can tailor-fit employment needs (Smith, 2015). As a result, people can dwell into the specifics of job offerings, especially its locations, which may result in willingness to commute as a result of thorough decision-making.

In addition, this can serve as a call-for-action across various companies to adapt and change their recruitment strategies, making their companies digitally present and use location data (Parra, 2018). This can help employers filter their candidates, taking into account their area of residence which may impact an employee's performance due to commute issues. A mutual benefit can be drawn between an employee-employer relationship once these shifts are considered during this digital era of employment.

V. SUMMARY, CONCLUSION, AND POLICY IMPLICATIONS

5.1 Summary

Within the context of the Job Search Theory, this research study conducts a thorough investigation of the multifaceted relationships that exist between socio-economic factors and people's employability and employment decisions in the Philippines. This investigates the significance of age, sex, income, and usage of online job search platforms in shaping people's employability decisions. Additionally, the study proves on how inclusive and flexible the theory is in the context of the modern digital era. As the employment landscape undergoes significant transformations, the results of this study aims to provide insights on the evolving nature of job search processes and the theory's applicability to these dynamics. Finally, the investigation extends to the realm of commuting decision. It aims to establish and scrutinize the relationships between the variables (age, sex, income, and usage of online job search platforms) and choice of commuting distance.

The study's results both support and go against conventional expectations. Age shows an inverse association with the inclination to commute to work, proving that younger people are more active commuters, and as people age, their choice of commuting distance tends to decline. Income, on the other hand, poses a direct relationship with commuting distance. High-income earners tend to commute longer distances than those with lower wages. Surprisingly, the usage of job search platforms is a major factor affecting employees' preferences to commute, but sex does not appear to be a determinant of commuting tendencies. These intriguing findings highlight the need for a thorough understanding of the relationship

between socioeconomic characteristics and commuting behavior and provide new light on the complex network of variables influencing people's decisions to commute.

5.2 Conclusion

The research aims to further amplify the job search model in relevance to the commuters residing in Manila City. Along with the income, age, and sex, the researchers have appended the usage of online job search platforms in line with the modern era of employment.

Ho1: The amount of income has no relationship with the choice of commuting distance.

The findings entailed that there is a significant relationship between income to the choice of commuting distance. An increase in income corresponds to the willingness of people to commute in longer distances. Therefore, the null hypothesis is rejected.

Ho2: Age segmentation has no relationship with the choice of commuting distance

The results have established an inverse relationship between age to the commuting distance. An increase in age results to a decrease in the choice of commuting distance. Therefore, the study rejects the null hypothesis.

Ho3: There is no significant difference between females and males in the choice of commuting distance.

Since the p-value did not pass at any significant level there is no difference between females and males to the choice of commuting distance. Therefore, the study accepts the null hypothesis.

Ho4: The use of online job search platforms has no relationship with the choice of commuting distance.

The results implied that there is a significant relationship between the use of online job search platforms to the choice of commuting distance. Those who used online platforms for job search are willing to commute in longer distances than those who do not. Therefore, the study rejects the null hypothesis.

5.3 Policy Implications

The research on age, income, sex, and the use of online platforms for commuting distance does, however, raise a number of general policy issues.

Within the field of transportation infrastructure planning, policymakers might investigate ways to optimize public transportation routes in order to better meet the needs of particular age groups or income brackets when it comes to commuting. Initiatives to ease the financial strain on inhabitants and make it easier for people to locate near their places of employment might prove beneficial for affordable housing policies, especially if income is negatively correlated with the distance commuted.

Another attainable impact of flexible work policies is that they should be customized to meet the needs and preferences of various age groups, particularly if a few of these groups are more likely to commute through online platforms. Even if the study's findings on sex may not be particularly noteworthy, legislators should take advantage of the chance to review current laws and workplace procedures to ensure inclusivity.

Incentives for businesses implementing remote work policies or investments in infrastructure to facilitate work from home could be taken into consideration, as well as advancing the use of online platforms for job search. The results of the study may influence zoning laws and urban planning, encouraging the construction of live-work spaces as well as mixed-use developments to shorten commutes.

Investing on a more sustainable transportation may be crucial to reducing the environmental effects of longer commutes. Creating public awareness campaigns could help inform people and organizations about the advantages of using online platforms for transportation.

VI. ACKNOWLEDGEMENT

We, the authors, would like to acknowledge and give our sincerest gratitude to the following institutions and individuals for their invaluable assistance and contributions to the completion of this thesis:

Foremost, owe a debt of gratitude to Ma'am Marie Antoinette L Rosete, the thesis advisor, for her unwavering support, guidance, and invaluable insights throughout the research process. Her expertise has been instrumental in shaping the direction of this study. Aside from the academic-related learnings she has imparted, her patience and commitment taught us that only with hard work comes the best forms of success.

The academic community at our beloved institution, the University of Santo Tomas, has been an invaluable source of support. We are grateful for the rich intellectual environment and the myriad resources that have facilitated the development of this research. Special thanks to the faculty and staff who have provided encouragement and guidance at every step of this academic endeavor.

Heartfelt thanks to our families for their unrelenting encouragement and kindness during the challenging stages of our academic journey. To our friends and companions, who provided a constant source of inspiration and moments of respite and joy amid the scholarly challenges, we are grateful beyond words.

We would also like to thank the anonymous peer reviewers whose insightful recommendations and constructive feedback considerably improved the caliber and rigor of this thesis.

To the respondents and participants who so kindly gave their time, knowledge, and insights for this research, we offer our warmest acknowledgement. Their willingness to engage in this endeavor gave the largest stepping stone to the execution of this academic exploration.

Finally, to Joshua Philip Contando, we are very much thankful for your guidance. The valuable discussions have played a pivotal role in the completion of this academic endeavor.

In a nutshell, this thesis stands as a collective effort, and we are profoundly grateful to each person and organization that has played a role, no matter how small, in bringing this work into fruition. We greatly value the contributions you have all made.

INFORMED CONSENT

You are being asked to participate in a research study titled **The Manileno Urban Jungle: A Study to Define the Contemporary Era of Employment by Re-modelling the Job Search Theory Through The Choice of Commuting Distance Based on Workers Residing in Manila City.** It is crucial that you understand the purpose of the study and what will be involved before deciding to take part. Please take your time reading the following material. If there is anything unclear or if you require more information, do ask the researchers.

This study aims to assess and re-model a job-search theory to identify the relationship between age, sex, income, and the use of online job search platforms to commuting distance.

The research being conducted is not known to involve any risks or drawbacks. The information gathered would be kept discretely in a password-protected Microsoft Excel file that only the designated researchers could access. The 2012 Data Privacy Act, also known as Republic Act 10173, is taken into account in the study.

Respondents may voluntarily discontinue their participation in the study at any time and without penalty. Your data will either be returned to you or deleted if you quit the research before data collection is finished. However, even if your participation in this study won't directly benefit you, the information gathered could help researchers analyze data regarding the current situation of transportation and commuting in the Philippines. The information you provide will only be used for this study.

If you have any queries regarding the survey or this research project in general, do not hesitate to contact the following researchers:

Elleyah Samuel D. Ballano at elleyahsamuel.ballano.comm@ust.edu.ph

Jamberyy Nicole S. Gabrillo at jamberrynicole.gabrillo.comm@ust.edu.ph

CONSENT SLIP

“In compliance with the requirements of the RA 10173 “Data Privacy Act (DPA) of 2012”, I authorize and consent to the general use, collect, and sharing of my information with the researchers for the study.”

___ YES ___ NO

“I acknowledge that I have read and understood the statements listed above”

___ YES ___ NO

“I voluntarily agree to participate in this research study” ___ YES ___ NO

NAME OF THE RESPONDENT:

SURVEY QUESTIONNAIRE

1) Are you currently employed?

___ Yes

___ No

If No, the respondent is not valid

2) Are you a Manila Resident?

___ Yes

___ No

If No, the respondent is not valid

3) Do you commute to work?

___ Yes

___ No

1. Did you use any sort of online job search platforms to find the job you are currently employed in?

___ Yes

___ No

4) Name (Optional):

Age: __

Sex:

___ Male

___ Female

5) Location of Residency (Please indicate full address):

6) Location of Work (Please indicate full address):

7) How much is your monthly income?

REFERENCES

- [1] Rouwendal, J. (1999). Spatial job search and commuting distances. *Regional Science and Urban Economics*, 29(4), 491–517. [https://doi.org/10.1016/s0166-0462\(99\)00002-2](https://doi.org/10.1016/s0166-0462(99)00002-2)
- [2] Garcia, L. (2019, June 23). Manila: The land of many opportunities | Leony Garcia. *BusinessMirror*. <https://businessmirror.com.ph/2019/06/24/manila-the-land-of-many-opportunities/>
- [3] *Commuting, Wages and Bargaining Power on JSTOR*. (n.d.). <https://www.jstor.org/stable/27917410>
- [4] *Working in Manila, Philippines*. ACS. (2019, February 26). Retrieved April 13, 2023, from <https://www.acs-ami.com/en/expatriation/relocation-guide/working-in-manila-philippines/>
- [5] Salita, D. C. (2023, March 9). *Manila | Philippines, Luzon, Population, Map, Climate, & Facts*. Encyclopedia Britannica. <https://www.britannica.com/place/Manila>
- [6] Homes, L. (2022). 5 Common Commuter Problems Filipinos Face Daily. *Lumina Homes*. <https://www.lumina.com.ph/news-and-blogs/blogs/5-common-commuter-problems-filipinos-face-daily>
- [7] Inquirer, P. D. (2022, November 13). *Commuters deserve better | Inquirer Opinion*. INQUIRER.net. <https://opinion.inquirer.net/158672/commuters-deserve-better>
- [8] *Impacts of Worsening Traffic to Daily Commuters | Crown Asia*. (n.d.). The Premium Brand of Vista Land. <https://www.crownasia.com.ph/news-and-blogs/lifestyle-blogs/selected/impacts-of-worsening-traffic-to-daily-commuters>
- [9] Kristal, A. (2020b, January 13). *Why It's So Hard to Change People's Commuting Behavior*. Harvard Business Review. <https://hbr.org/2019/12/why-its-so-hard-to-change-peoples-commuting-behavior>
- [10] Cao, C., Zhen, F., Wang, X., & Jiang, Y. (2020). Study on the influence of commuting behavior characteristics of urban residents on health in Nanjing City based on structural equation model. *Progress in Geography*, 39(12), 2043–2053. <https://doi.org/10.18306/dlkxjz.2020.12.007>
- [11] Meng Zhang a b c, a, b, c, Abstract Designing fillers for high-performance anti-corrosion coatings, Su, Y., Hong, M.-S., Wang, W., Li, Y., Zhou, C., Xiong, L., Ye, Y., He, P., Rodriguez, J., Jiang, D., Sadegh, H., Daneshvar-Fatah, F., Jeon, H., Liu, A., ... Najmi, P. (2021, July 10). *Ultrahigh anti-corrosion performance of polymer-based coating filled with a novel micro network nanofiller*. *Corrosion Science*. Retrieved April 13, 2023, from <https://www.sciencedirect.com/science/article/abs/pii/S0010938X21004510>
- [12] Bai, B., Gopalan, N., Beutell, N. J., & Ren, F. (2021). Impact of Absolute and Relative Commute Time on Work–Family Conflict: Work Schedule Control, Child Care Hours, and Life Satisfaction. *Journal of Family and Economic Issues*, 42(4), 586–600. <https://doi.org/10.1007/s10834-021-09752-w>
- [13] David, N. B., & Sharabi, M. (2009). Commuting and its effect on work decisions. *ResearchGate*. https://www.researchgate.net/publication/274718636_Commuting_and_its_effect_on_work_decisions
- [14] Carra, G., Mulalic, I., Fosgerau, M., & Barthelemy, M. (2016). Modelling the relation between income and commuting distance. *Journal of the Royal Society Interface*, 13(119), 20160306. <https://doi.org/10.1098/rsif.2016.0306>
- [15] *Commuting, Wages and Bargaining Power on JSTOR*. (n.d.). <https://www.jstor.org/stable/27917410>
- [16] *National Capital Region | National Wages Productivity Commission*. (n.d.). <https://nwpc.dole.gov.ph/regionandwages/national-capital-region/>
- [17] CEICdata.com. (2023). Philippines Labour Force Survey: Employment: by Industry, Occupation and Class. *www.ceicdata.com*. <https://www.ceicdata.com/en/philippines/labour-force-survey-employment-by-industry-occupation-and-class>
- [18] *Why Does Traffic Happen?* (2018b, November 27). Wawanesa Insurance. <https://www.wawanesa.com/us/blog/why-does-traffic-happen#:~:text=Traffic%20happens%20from%20a%20roadway,starts%20and%20why%20it%20happens.>
- [19] Bogomolov, Y., He, M., Khulbe, D., & Sobolevsky, S. (2021). Impact of income on urban commute across major cities in US. *Procedia Computer Science*, 193, 325–332. <https://doi.org/10.1016/j.procs.2021.10.033>
- [20] Kwon, K., & Akar, G. (2021). Have the gender differences in commuting been shrinking or persistent? Evidence from two-earner households in the U.S. *International Journal of Sustainable Transportation*, 16(12), 1121–1130. <https://doi.org/10.1080/15568318.2021.1971345>
- [21] *Commuting to work self-selection on earnings and ... - diva portal*. (n.d.). Retrieved April 12, 2023, from <https://www.diva-portal.org/smash/get/diva2:615155/FULLTEXT01.pdf>
- [22] *Commuting, wages and bargaining power - docs.iza.org*. (n.d.). Retrieved April 12, 2023, from <https://docs.iza.org/dp4510.pdf>

- [23] Carra, G., Mulalic, I., Fosgerau, M., & Barthelemy, M. (2016b). Modelling the relation between income and commuting distance. *Journal of the Royal Society Interface*, 13(119), 20160306. <https://doi.org/10.1098/rsif.2016.0306>
- [24] Fournier, N., & Christofa, E. (2021b). On the Impact of Income, Age, and Travel Distance on the Value of Time. *Transportation Research Record*, 2675(3), 122–135. <https://doi.org/10.1177/0361198120966603>
- [25] French, M. T., Popovici, I., & Timming, A. R. (2020). Analysing the effect of commuting time on earnings among young adults. *Applied Economics*, 52(48), 5282–5297. <https://doi.org/10.1080/00036846.2020.1761537>
- [26] Hur, J. (2018, February 13). *History of the Online Job Search* |. Copyright BeBusinessed.com - All Rights Reserved. <https://bebusinessed.com/history/history-online-job-search/>
- [27] Magazine, A., & Magazine, A. (2020). Intelligence: Online Hiring in Philippines Increases Fifteen Percent in 2019 Q4, Shows Study by Job Search Platform Monster. *Adobo Magazine Online*. <https://www.adobomagazine.com/philippine-news/intelligence-online-hiring-in-philippines-increases-fifteen-percent-in-2019-q4-shows-study-by-job-search-platform-monster/>
- [28] Traveller, S. a. |. C. (n.d.). *Getting Around Manila - Taxi, Jeepney, Uber, Grab, Bus, LRT, MRT and Car Rental in Manila - Go Guides*. <https://ph.hotels.com/go/philippines/getting-around-manila#:~:text=Getting%20Around%20Manila-,Taxi%2C%20Jeepney%2C%20Uber%2C%20Grab%2C%20Bus%2C%20LRT%2C,and%20Car%20Rental%20in%20Manila&text=Getting%20around%20Manila%20is%20fairly,transportation%20options%20that%20are%20available.>
- [29] Similarweb. (2023, April 1). *Most Visited Jobs and Employment Websites in Philippines*. Similarweb. <https://www.similarweb.com/top-websites/philippines/jobs-and-career/jobs-and-employment/>
- [30] *Factors affecting length of job search and job switching in ... - LMU*. (n.d.). Retrieved April 12, 2023, from https://mpr.aub.uni-muenchen.de/68802/1/MPRA_paper_68802.pdf
- [31] *Discussion paper series - docs.iza.org*. (n.d.). Retrieved April 12, 2023, from <https://docs.iza.org/dp15775.pdf>
- [32] *Job Search in the 21st Century*. Academic.oup.com. (n.d.). Retrieved April 13, 2023, from <https://academic.oup.com/jeea/article-abstract/20/6/2317/6762922?redirectedFrom=fulltext>
- [33] McCall BP, McCall JJ (1987) A sequential study of migration and job search. *J Labor Econ* 5(4):452–476
- [34] *14 Economic Job Search and Decision - Making Models*. Academic.oup.com. (n.d.). Retrieved April 13, 2023, from <https://academic.oup.com/edited-volume/28012/chapter-abstract/211793215?redirectedFrom=fulltext>
- [35] *SWS: 72% of Filipinos struggle to commute to work*. (n.d.). Cnn. <https://www.cnnphilippines.com/news/2021/5/7/SWS-commuting-pandemic.html?fb>
- [36] Dagan, O. (n.d.). *Job Search and Labor Market Analysis*. LABOR ECONOMICS (M.A.). Retrieved April 13, 2023, from <https://www.tau.ac.il/~weiss/laborma/>
- [37] Mueller, A. (2022). Education vs. Experience: Which One Gets the Job? *Investopedia*. <https://www.investopedia.com/financial-edge/0511/work-experience-vs.-education-which-lands-you-the-best-job.aspx>
- [38] Luna, F. (2022, November 28). Metro Manila public transportation among the worst in the world: study. *Philstar.com*. <https://www.philstar.com/headlines/2022/11/25/2226400/metro-manila-public-transportation-among-worst-world-study#:~:text=MANILA%2C%20Philippines%20%E2%80%94%20Metro%20Manila's%20public,categories%20in%20a%20new%20study.>
- [39] *Education Income And Wealth | St. Louis Fed*. (2017, January 3). <https://research.stlouisfed.org/publications/page1-econ/2017/01/03/education-income-and-wealth>
- [40] Thomas, L. (2022). Simple Random Sampling | Definition, Steps & Examples. *Scribbr*. <https://www.scribbr.com/methodology/simple-random-sampling/#:~:text=Simple%20random%20sampling%20is%20a,possible%20of%20this%20random%20subset.>
- [41] Nakosteen, R. A., Westerlund, O., & Zimmer, M. (2008). Migration and self-selection: Measured earnings and latent characteristics. *Journal of Regional Science*, 48(4), 769–788. doi:10.1111/j.1467-9787.2008.00576.x
- [42] Hayes, A. (2023). Simple Random Sampling: 6 Basic Steps With Examples. *Investopedia*. <https://www.investopedia.com/terms/s/simple-random-sample.asp>

- [43] Editorial Staff. (2020). Job-Hunting Sites PH: The Demand of the Internet Age and Economy. *Efren Nolasco*. <https://www.efrennolasco.com/job-hunting-sites-philippines/>
- [44] *Figure 5 A simplified formula to calculate sample size (Yamane, 1967)*. (n.d.). ResearchGate. https://www.researchgate.net/figure/A-simplified-formula-to-calculate-sample-size-Yamane-1967_fig4_281629128
- [45] Statista. (2022, July 7). *Global online users who access job sites 2016, by age and employment*. <https://www.statista.com/statistics/697946/online-users-who-access-job-sites-by-age-and-employment/>
- [46] Hayes, A. (2023, January 12). *What is a confidence interval and how do you calculate it?* Investopedia. Retrieved April 13, 2023, from <https://www.investopedia.com/terms/c/confidenceinterval.asp>
- [47] Angyridis, Constantine and Zhou, Haiwen, (2022), Search, Technology Choice, and Unemployment, MPRA Paper, University Library of Munich, Germany, <https://EconPapers.repec.org/RePEc:pra:mprapa:112064>.
- [48] Comin, Diego, and Bart Hobijn. 2010. "An Exploration of Technology Diffusion." *American Economic Review*, 100 (5): 2031-59. DOI: 10.1257/aer.100.5.2031
- [49] Ommeren, Jos & Dargay, Joyce. (2004). The Optimal Choice of Commuting Speed: Consequences for Commuting Time, Distance and Costs. *Journal of Transport Economics and Policy*. 40. https://www.researchgate.net/publication/4787117_The_Optimal_Choice_of_Commuting_Speed_Consequences_for_Commuting_Time_Distance_and_Costs
- [50] Pablo D Fajgelbaum & Cecile Gaubert, 2020. "Optimal Spatial Policies, Geography, and Sorting*," *The Quarterly Journal of Economics*, vol 135(2), pages 959-1036. <https://www.nber.org/papers/w24632>
- [51] Kane, J., & Tomer, A. (2016, July 29). *Millennials and generation X commuting less by car, but will the trends hold?* Brookings. Retrieved April 19, 2023, from <https://www.brookings.edu/blog/the-avenue/2014/10/07/millennials-and-generation-x-commuting-less-by-car-but-will-the-trends-hold/>
- [52] Author links open overlay panelMeng Zhang a b c, a, b, c, AbstractDesigning fillers for high-performance anti-corrosion coatings, Su, Y., Hong, M.-S., Wang, W., Li, Y., Zhou, C., Xiong, L., Ye, Y., He, P., Rodriguez, J., Jiang, D., Sadegh, H., Daneshvar-Fatah, F., Jeon, H., Liu, A., ... Najmi, P. (2021, July 10). *Ultra-high anti-corrosion performance of polymer-based coating filled with a novel micro network nanofiller*. *Corrosion Science*. Retrieved April 13, 2023, from <https://www.sciencedirect.com/science/article/abs/pii/S0010938X21004510>
- [53] Sullivan, D. J. (2015, July 23). *How commute issues can dramatically impact employee retention*. TLNT. Retrieved April 19, 2023, from <https://www.tlnt.com/how-commute-issues-can-dramatically-impact-employee-retention/>
- [54] Top Echelon. (2022, February 15). *Advantages & disadvantage of online recruitment*. Top Echelon. Retrieved April 19, 2023, from <https://www.topechelon.com/blog/advantages-disadvantages-online-recruitment-methods/>
- [55] News, G. H. by L. I. (n.d.). *How to factor commutes into your job search*. LinkedIn. Retrieved April 19, 2023, from <https://www.linkedin.com/pulse/how-factor-commutes-your-job-search-get-hired-by-linkedin-news/>
- [56] *Where remote work saves commuters most | upwork*. (n.d.). Retrieved April 19, 2023, from <https://www.upwork.com/press/releases/where-remote-work-saves-commuters-most>
- [57] Na Ta, Xiaomeng Wang, Lingqian Hu, Zhilin Liu. (2022) *Gender difference in commuting travel: A comparative study of suburban residents in Beijing and Shanghai*. *Travel Behaviour and Society* 28, pages 196-203
- [58] Melina Stein, Luca Nitschke, Laura Trost, Ansgar Dirschauer, Jutta Deffner. (2022) *Impacts of Commuting Practices on Social Sustainability and Sustainable Mobility*. *Sustainability* 14:8, pages 4469.
- [59] Susan Hanson & Ibipo Johnston (1985) *GENDER DIFFERENCES IN WORK-TRIP LENGTH: EXPLANATIONS AND IMPLICATIONS*, *Urban Geography*, 6:3, 193-219, DOI: 10.2747/0272-3638.6.3.193
- [60] Martin Swobodzinski, Piotr Jankowski. (2015) *The Role of Location and Cost in Individual Choices of Transportation Improvement Projects*. *The Professional Geographer* 67:4, pages 527-540.
- [61] Sara Tilley, Donald Houston. *The gender turnaround: Young women now travelling more than young men*. *Journal of Transport Geography*, Volume 54, 2016, Pages 349-358, ISSN 09666923, <https://doi.org/10.1016/j.jtrangeo.2016.06.022>. (<https://www.sciencedirect.com/science/article/pii/S0966692316303581>)
- [62] Páez, Antonio & Farber, Steven. (2012). *Participation and desire: leisure activities among Canadian adults with disabilities*. *Transportation*. 39. 10.1007/s11116-012-9385-x.

<https://www.researchgate.net/publication/254608932> Participation and desire leisure activities among Canadian adults with disabilities

- [63] Schmocker, J. D., Quddus, M. A., Noland, R. B., Bell, M. G. H., 2005. Estimating trip generation of elderly and disabled people - Analysis of London data. *Transportation Research Record*. (1924) 9-18.
- [64] El-Mehdi Aboukacem, Clément Nedoncelle, Wage variations and commuting distance, *Journal of Economic Geography*, Volume 22, Issue 5, September 2022, Pages 1097–1123, <https://doi.org/10.1093/jeg/lbac014>
- [65] Casado-Díaz, J.M., Simón-Albert, R. & Simón, H. Gender Differences in Commuting: New Evidence from Spain. *Soc Indic Res* **169**, 907–941 (2023). <https://doi.org/10.1007/s11205-023-03183-w>
- [66] Kihyun Kwon & Gulsah Akar (2022) Have the gender differences in commuting been shrinking or persistent? Evidence from two-earner households in the U.S., *International Journal of Sustainable Transportation*, 16:12, 1121-1130, DOI: [10.1080/15568318.2021.1971345](https://doi.org/10.1080/15568318.2021.1971345)

