# INTERACTIONS BETWEEN SUICIDE MORTALITY AND UNEMPLOYMENT, HEALTH AND RELIGION IN SOUTHEAST ASIA

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UNIVERSITI MALAYA

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**DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS (SOUTHEAST ASIAN STUDIES)**

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**INTERACTIONS BETWEEN SUICIDE MORTALITY AND UNEMPLOYMENT, HEALTH AND RELIGION IN SOUTHEAST ASIA**


## ABSTRACT

The Covid-19 pandemic has been linked to a rise in suicide mortality, and while many researchers are studying the determinants of suicide, data limitations have hindered progress. This study attempts to provide insights on the determinants of suicide mortality, including the role of religion, using quintile regression. The results reveal several interesting findings that can help policymakers formulate strategies to address this issue. Firstly, there is a positive relationship between urban populations and suicide rates in Southeast Asia. With rising urbanisation in major cities, such as Jakarta, Bangkok, Manila, and Kuala Lumpur in Southeast Asia, plenty of additional problems have to be addressed by the Southeast Asian governments. These problems include housing, congestion, and the escalating cost of living. One solution to this issue is creating employment opportunities in rural areas to minimize migration to urban areas. Secondly, this study found a positive correlation between unemployment and suicide mortality rates, particularly among females. Governmental bodies in Southeast Asian countries need to find immediate solutions to the problem of unemployment as it can minimize the number of unemployed individuals. Unemployment may lead to mental health issues such as depression and eventually suicide ideation. Thirdly, improved access to healthcare facilities is highly beneficial. Mental health professionals are concentrated mainly in urban areas, leading to uneven access to healthcare facilities in the rural parts of Southeast Asia. Governments in Southeast Asia need to ensure even distribution of healthcare professionals, including general healthcare professionals and mental health professionals to enable immediate action during times of crisis. Finally, this study found that a strong religious foundation can help individuals weather challenges. Governments in Southeast Asia should encourage a strong religious foundation to citizens, embedding positive values in their early childhood years. Overall, this study provides policymakers with critical insights into the determinants of suicide mortality, enabling them to formulate strategies to address this important issue.



**Keywords:** suicide mortality, religion, Muslim, Buddhism, Christianity, quintile regression

**INTERAKSI ANTARA KEMATIAN BUNUH DIRI SERTA PENGANGGURAN, KESIHATAN DAN AGAMA DI ASIA TENGGARA**

## ABSTRAK

Wabak Covid-19 telah dikaitkan dengan peningkatan kematian bunuh diri, dan walaupun ramai penyelidik mengkaji faktor-faktor penentu kematian bunuh diri, kekangan data telah menghalang kemajuan. Kajian ini memberikan pandangan tentang faktor-faktor penentu kematian bunuh diri, termasuk peranan agama, menggunakan regresi kuintil. Keputusan kajian menunjukkan beberapa hasil yang menarik yang boleh membantu pembuat dasar merumuskan strategi untuk mengatasi isu ini. Pertama, terdapat hubungan positif antara populasi bandar dan kematian bunuh diri di Asia Tenggara. Dengan peningkatan urbanisasi di bandar-bandar utama seperti Jakarta, Bangkok, Manila, dan Kuala Lumpur di Asia Tenggara, mungkin terdapat banyak masalah tambahan yang perlu diatasi oleh kerajaan. Masalah-masalah ini termasuk perumahan, kesesakan, dan kos sara hidup yang meningkat. Satu penyelesaian untuk isu ini ialah mencipta peluang pekerjaan di kawasan luar bandar untuk meminimumkan migrasi ke bandar-bandar. Kedua, kajian ini menemui korelasi positif antara pengangguran dan kadar kematian bunuh diri, terutamanya untuk wanita. Mencari penyelesaian segera untuk masalah pengangguran adalah penting kerana ia boleh menyebabkan kemurungan dan akhirnya ideasi bunuh diri. Kerajaan di negara-negara Asia Tenggara perlu memberi tumpuan kepada mencipta peluang pekerjaan untuk meminimumkan bilangan individu yang menganggur. Ketiga, meningkatkan akses kepada kemudahan kesihatan adalah penting. Pakar kesihatan mental lebih tertumpu di kawasan bandar, menyebabkan akses yang tidak sekata kepada kemudahan kesihatan di Asia Tenggara. Kerajaan perlu memastikan taburan pakar kesihatan, termasuk pakar kesihatan umum dan pakar kesihatan mental, di seluruh negara untuk membolehkan tindakan segera diambil semasa krisis. Akhirnya, kajian ini mendapati bahawa asas keagamaan yang kukuh dapat membantu individu menghadapi cabaran. Kerajaan di Asia Tenggara harus memberikan asas keagamaan yang kukuh kepada rakyat, dengan menanamkan nilai-nilai positif dalam pelajaran sekolah. Secara keseluruhan, kajian ini memberikan perspektif penting kepada pembuat dasar tentang faktor-faktor penentu kematian bunuh diri, membolehkan mereka merumuskan strategi untuk menangani isu penting ini.

**Kata kunci:** kematian bunuh diri, agama, Islam, Buddha, Kristian, regresi kuintil

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**Abbreviations**

| | |
|---|---|
| **ADB** | Asian Development Bank |
| **ADO** | Asian Development Outlook |
| **AIDS** | Acquired Immunodeficiency Syndrome |
| **ASEAN** | Association of Southeast Asian Nations |
| **AUDIT** | Alcohol Use Disorder Identification Test |
| **CDC** | Centers for Disease Control and Prevention |
| **COVID-19** | Coronavirus (COVID-19) pandemic |
| **EG** | GDP growth (annual %) |
| **GDP** | Gross Domestic Product |
| **HEALTH** | Current health expenditure (% of GDP) |
| **HIV** | Human Immunodeficiency Virus |
| **ICD** | International Classification of Diseases |
| **ICT** | Information and Communication Technology |
| **ILO** | International Labour Organization |
| **Lao PDR** | Lao People's Democratic Republic |
| **MINI** | Mini-International Neuropsychiatric Interview |

| | |
|---|---|
| **MMPHI** | Meadows Mental Health Policy Institute |
| **OLS** | Ordinary Least Squares |
| **PTSD** | Post-Traumatic Stress Disorder |
| **SOS** | Samaritans of Singapore |
| **SUD** | Substance Use Disorders |
| **SR** | Suicide Mortality Rate |
| **UR** | Unemployment, total (% of total labor force) |
| **URB** | Urban population (% of total population) |
| **UN** | United Nations |
| **USA** | United States of America |
| **VA** | Veterans Affair |
| **WDI** | World Development Indicators |
| **WHO** | World Health Organization |
| **WWII** | World War II |

# CHAPTER 1: INTRODUCTION

## 1.1 Problem Statement

According to Durkheim, suicide refers to "all instances of death deriving in any way from a victim's own choice of action or act that the individual believes will lead to this outcome." (Durkheim, 1951; Pickering and Walford, 2000). The act of taking one's own life has been discussed broadly involving the causes, motives and rationale behind the act. The perspective on suicides also can be interpreted in a wide range of standpoints namely health, philosophy, and belief.

French Sociologist Emile Durkheim in his book entitled ***Suicide: A Study in Sociology*** (French: *Le Suicide: Étude de sociologie*) in 1897 focused on the imbalances in two social processes, namely social integration and moral control as trigger factors for suicide. Four different forms of suicides, including egoistic, altruistic, anomic, and fatalistic suicides, may result from the imbalances between those two social forces. According to some theories, a lack of social contact leads to egoistic suicide. It is committed by those who view themselves as socially marginalized people or solitary outcasts. Such people struggle to fit into groups and establish their own place in society. They are largely isolated socially. They see suicide as a means of putting a stop to their solitude or over-individuation.

However, when social group involvement is excessive, altruistic suicide occurs. People have integrated so well into the community that they are willing to risk their very lives as a means to uphold one of the organization's duties. Individuals commit suicide for their

support of a cause which the organization is supporting or for the good of the group as a whole. Two instances of individuals who commit suicide for a religious or political cause include the notorious Japanese fighter pilots of World War II or the assailants who crashed the planes into the World Trade Center, the Pentagon, and a Pennsylvanian meadow in 2001. During World War II, Japanese Kamikaze pilots were willing to risk their lives in the pursuit of their country's victory. These pilots were willing to risk their lives to advance the interests of their nation. Individuals who fervently believed in the cause of their group were comparable to suicide bombers, who were willing to give their lives to deliver an ideological or religious remark.

Anomic suicide is caused by an absence of social regulation which occurs when people are under a lot of pressure and discontent. Unexpected and sudden changes in circumstances are the reason of anomie suicide. For example, when someone suddenly suffers a significant financial setback, the disappointment and stress they feel may cause them to contemplate suicide as a way to cope. According to research by the Centers for Disease Control and Prevention (CDC), adults between the ages of 25 and 64 have historically committed more suicide during economic downturns (Sternheimer, 2011). In the USA, suicide rates significantly increased (by 24%) during a period of high unemployment rate between 1928 and 1932. On the other hand, in 2000, when unemployment was just under 4%, suicide rates were at a record low. Disasters, in addition to economic downturns, may also be linked to an increase in suicide. The 1995 Kobe earthquake was followed by an increase in suicide rates, according to the Japanese public health authority. Rebuilding their livelihood caused the earthquake survivors a great deal of worry and difficulties, and they quickly realized that their lives would never be the same again because of the loss they endured. Suicide became a strategy for people to escape reality.

Fatalistic suicide happens when individuals have to submit to rigid control. These people's sense of self-worth and distinctiveness are compromised because they are subjected to stringent rules or have excessive demands put upon them. People who believe that their circumstances are set in stone and the only way out is to commit suicide, as in the cases of enslavement and persecution are said to be practicing fatalistic suicide. In South Korea, strict rules apply to celebrities. One performer committed suicide because she was too exhausted to adhere to all the rules and traditions of society. Another celebrity, Kim Jonghyun killed himself in 2017 as a consequence of severe depressive disorders and the pressure of being in the spotlight because he thought he was unable to live up to society's standards (Lee, 2018).

Suicide, which is frequently linked to personal mental health issues and depression, is more complex than it may first appear. Suicide is not a fresh issue; in fact, it dates to ancient Rome, where Ajax the Great committed suicide during the Trojan War and Lucretia committed suicide, sparking a rebellion that eventually led to the Roman Republic replacing the Roman Kingdom. It is clear that suicide used to be considered a brave act and have not always been linked to mental illness and depression.

In the past, someone who had lost a fight may commit suicide to avoid being captured and potentially tortured, mutilated, or enslaved by an enemy. Japanese troops would frequently fight until the last man stands as in World War II instead of admitting defeat. The Japanese navy dispatched pilots to target Allied ships at the conclusion of the war. These strategies show the samurai warrior culture's influence, when *seppuku* was frequently necessary following a loss of honour (Gambetta, 2005). Islamist militants have employed suicide attacks frequently in recent years (Roberts and Wood, 2006). However,

Islamic law forbids suicide in all circumstances, and the terrorist leaders of the organizations that plan these assaults do not view them as suicides but rather as acts of martyrdom. According to their argument, the difference between suicide and martyrdom operations is that the former involves a person killing themselves out of sheer malice. The clerics of Islam do not all share this viewpoint. In addition to avoiding the suffering of captivity, spies have brought suicide pills to use if they are captured in order to avoid being forced to reveal their identities.

Apart from suicide being accepted as an act of courage in war, the act of committing suicide is also known as a form of protest. Buddhist monks in South Vietnam, most notably Thch Quang C, won Western admiration for their self-immolation protests against President Ngô nh Dim in the 1960s. Similar incidents, such as those involving Jan Palach and Ryszard Siwiec after the Warsaw Pact invasion of Czechoslovakia, were reported in Eastern Europe. Numerous well-known individuals, particularly intellectuals and authors, are said to have committed suicide during the Cultural Revolution in China (1966–1976), frequently to avoid persecution at the hands of the Red Guards. The most recent instance of a protest suicide attempt occurred in Thailand, where a 59-year-old woman ingested a vial of rat poison in front of the Finance Ministry after her request for 5,000 baht in monetary assistance was denied.

This study as such will look into the dynamic interactions among unemployment, health, and religion in Southeast Asia. Southeast Asia is a region where there is a dynamic range of economic situations, health concerns and religious practices. By definition, the ten member states of Association of Southeast Asia Nation (ASEAN) include high-income states, middle-income states and low-income states, Furthermore, the quality of life also is very uneven among the ten-member state. In terms of religion, there is a diversity of

major religions embraced by believers in those countries. The majority of Malaysia, Indonesia and Brunei comprise of Muslims and are known as Islamic countries, while the majority of Philippines comprises of Christians and Singapore, Laos, Cambodia, and Thailand are known to have a majority of Buddhist believers. The uniqueness of the Southeast Asian region due to its diversification mentioned above might offer a different perspective in regards to the suicide mortality rates in Southeast Asia.

Generally, unemployment, which leads to the loss of income thus degrading the quality of life, could be a prime factor for a person to decide on committing suicide. The unemployment rate is usually higher in low-income countries compared to higher income countries. Logically, if the factor of unemployment results to higher suicide rates, then low-income countries should have a higher percentage of suicide cases compared to high- or medium-income countries. However, research contradicts this logical statement. This study looks into and compare the rate of unemployment and suicide in Southeast Asian countries. The result might be contrasting with what we might expect. It is true that unemployment leads to poverty and low quality of life, but does it truly affect the mental health of an individual to the point that it leads to suicide?

The state of one's health is a factor that could lead to suicide. This is a common factor for the suicide mortality rate amongst senior citizens aged 70 years old and above. The condition of their health might induce a long-term struggle and disability that could make an individual feel tired and lose hope to continue with their life. Countering health issues require time, energy and money, and very seldomly it does not involve any other parties such as immediate family members. Individuals with health issues normally feel that they are a burden to others. They tend to resort to ending their own life as means to ending their problems overall. This is because taking care of person with health issues does not

only involve personal caretaking, but also the cost of medical care and other necessary care that comes along with it. Generally, low-income families have a higher chance of having a household that are ill with critical illnesses and disabilities. Therefore, the circumstances and challenges of having proper access to healthcare due to restricted financial means or moral support might also lead to suicide.

Recently, the escalation of the Coronavirus disease (Covid-19) cases worldwide has brought fear of death to many. However, another significant outcome of the Covid-19 pandemic is the rise in suicide rates in many countries regionally and globally. Countries such as Singapore and Thailand generally have a higher rate of suicide cases compared to the other eight Southeast Asian countries. In Thailand, for instance, the Covid-19 pandemic contributed to an increase in suicide mortality. In the first half of 2020, 2,551 individuals committed suicide, a 22% increase from the same period in 2019, which health officials blamed on stress induced due to the pandemic (Chin and Klimowicz, 2021). Thailand also saw a spike in suicide rates during the 1997 Asian financial crisis when suicide figures rose by 20-25% (Chin and Klimowicz, 2021). The data collected from the specifically mentioned event could be analysed to determine the relationship of unemployment and suicide as it happens when the financial and economy crisis occurred, which led to the spike in unemployment rates.

Thailand had an annual suicide rate of 14.4% per 100,000 people in 2019, compared to a global age-standardized average of 10.5% per 100,000, according to the World Health Organization (WHO). It is crucial to remember that Thailand's suicide rates have increased because of the Covid-19 outbreak. Workers in the tourism industry, sex industry, and migrants are among the groups most affected by the pandemic's effects. Thailand's foreign tourism industry, which accounts for 12% of its Gross Domestic

Product (GDP), was put to a halt when countries restricted international travels to stop theCovid-19 virus from spreading in 2021 (Chin and Klimowicz, 2021). The downfall of foreign tourism gives a direct impact towards workers in the sex industry as compared to other tourism industry players. There are between 800,000 and over two million sex workers in Thailand, according to estimates. Sex workers could not be eligible for social security and may only have a few options for assistance from the government. The "No One Left Behind" programme was launched by the Thai government, but sadly many rural-to-urban migrants found it difficult to access the aid because they were considered farmers and fall under a distinct financial system. The financial difficulty of these groups due to the economic downfall amid of Covid-19 could not be assisted with the government's scheme thus putting the people into a dead-end situation. A representative from the Ministry of Public Health's Department of Mental Health, Varoth Chotpitayasunondh, noted that a comparable rise in suicides occurred in 1997 during the Asian financial crisis, when the numbers rose by roughly 20 to 25%. It is interesting to note that Thailand had the highest suicide rate in Southeast Asia even before the coronavirus caused economic difficulties. In contrast, the WHO list of other ASEAN member states showed that the suicide rate ranged from 3.2% (Philippines) to 11.2% (Singapore) per 100,000 people (Chin and Klimowicz, 2021).

Despite the financial hardship, mental health problems is also a contributing factor towards the rising suicide rates in Thailand. There is just one psychiatrist for every 250,000 people, which is ten times fewer than the global average, making access to mental healthcare exceedingly limited. The situation worsens when most of the psychiatrists are situated in private hospitals, where the common Thai people could not afford the treatment. The government hospital also provides mental health treatment, but the time taken in getting the treatment for each visit every week could go up to a 7 hour wait which

does not give a better solution for patients who come from lower- or middle-income families as they are unable to give up their time spent on treatment as they need to work to provide. The resources to cater mental health problems are lacking in Thailand. The suicide hotlines are always unanswered and calls take a very long time to be attended. Even though the government has increased the capacity of personnel to cater the suicide hotline, the drop call rate is still high between 40 to 45%. This shows how the access to mental health care in Thailand is in a worrying state that might lead to the increased number of suicide cases in the country. Mental health care is also not well known among the patients who suffer from mental health issues. Many believe in seeking a spiritual healer to address the issue. But this happens, the issue or problem are not always addressed properly. In Thailand, the superstitious beliefs are strong within the community. This approach which is commonly taken by the community does not always favor the efforts of combating mental health issues in Thailand.

Malaysia also recorded a high increase in suicide cases recently. Even though the rate of death due to Covid-19 in Malaysia appears to be high until July 2021 but the fatality rate may be far higher when suicides caused by the pandemic-related mental health crisis are included (Mahathir, 2021). In Malaysia, a total of 631 suicide instances were reported in 2020, 468 incidents occurred between January and May of the year 2021, and 609 suicide cases were reported in total in 2019 (Zainudeen et al., 2021). Figure 1 depicts the upward trend in Malaysia's suicide mortality rate.

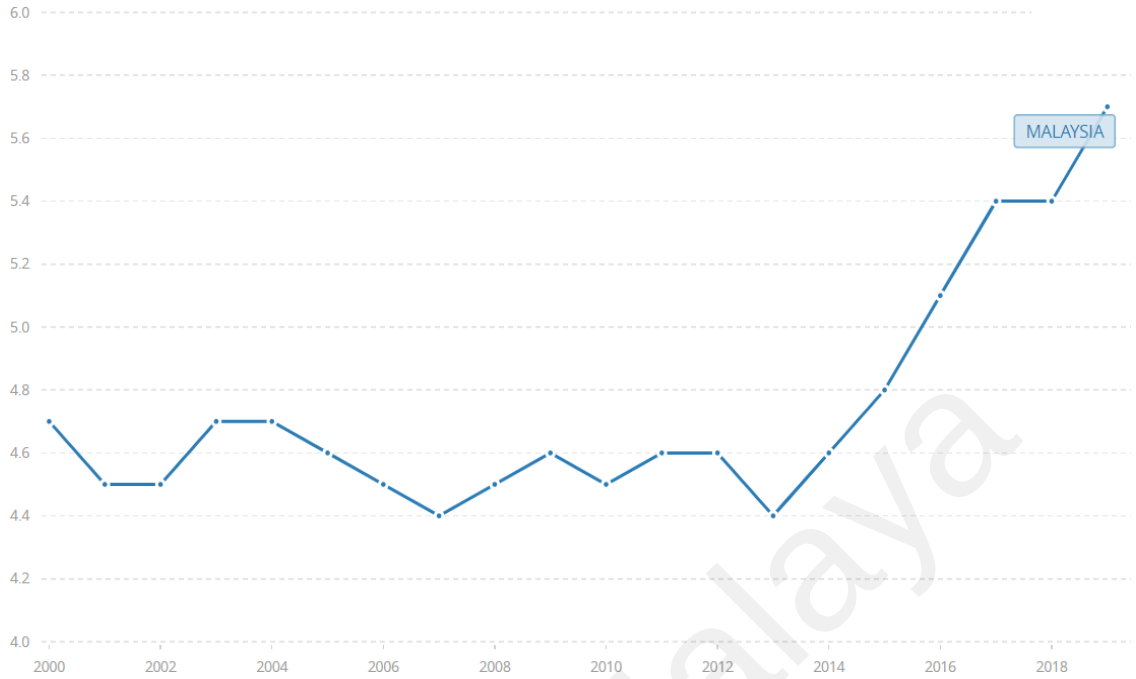


**Figure 1.1: Trend of suicide mortality rate in Malaysia**

Source : https://data.worldbank.org/indicator/ (Accessed 25 August 2021)

Figure 1.1 shows an increasing trend on the suicide mortality rate in Malaysia beginning from the year 2013 from 4.4 to 5.7 in 2019 for every 100,000 people. Although this data is collected before the Covid-19 pandemic, one can argue that the trend of this data is somewhat high. The financial strains and the lockdown imposed during the pandemic can be one of the contributing factors towards the increasing suicide mortality rate in Malaysia. The cumulative death by suicide reported from 2019 until May 2021 is at 1,708 deaths, where 83.5% comprises of females and more than half of the total deaths by suicide were individuals aged between 15-18 (Idrus, 2021).

In Southeast Asia, the suicide mortality rate in 2018 was lower than the global rate, which stood at 10.5 per 100,000 population, down from 11.6 in 2008 (Varnik, 2012). Despite the

trend showing a decreasing rate, it is expected that the number will increase in the coming years. Figure 2 below shows the suicide mortality rate for Southeast Asian countries.

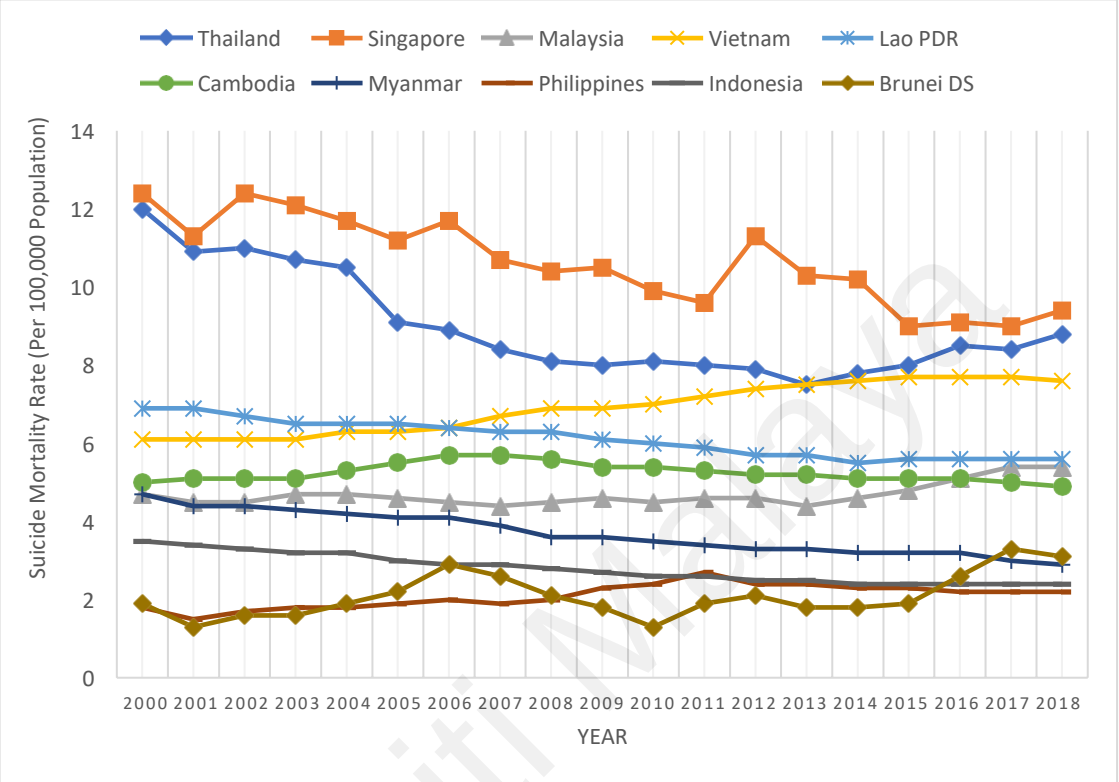


**Figure 1.2: Suicide mortality rate for every 100,000 population in Southeast Asian countries.**

Figure 1.2 indicates that Singapore has the highest suicide rate although it is displaying a decreasing trend. This is followed by Thailand. In the last decade, there has been a rise in suicide rate in Vietnam, indicating an increasing trend. In contrast, Indonesia, the Philippines and Brunei Darussalam have somewhat lower suicide rates compared to other Southeast Asian countries.

Substance misuse and pre-existing mental illnesses are significant contributing factors to suicides. Due to the frequent neglect of mental health issues, Myanmar claims that its

suicide rate is highest among those aged 25 and 40. Additional potential causes include financial difficulties, marital issues, and sexual harassment. The elevated suicide rate among individuals aged 60 to 64 (10 per 100,000) in Myanmar is attributed to resulting from family abandonment. In Singapore, a notable number of elderly suicides have also been reported. The Samaritans of Singapore (SOS), a suicide prevention organization, reports that men aged 60 and older commit suicide at rates far higher than women. The number of male suicides has doubled compared to female suicides, partly due to the perpetuation of a macho or "man-up" mindset. Men are encouraged to suppress their emotions rather than seek treatment from a professional.

Suicide is one of the leading causes of death for individuals between the ages of 15 and 29, and is on the rise among Southeast Asian teenagers. Major causes of anxiety and depression include low self-esteem, bullying, dysfunctional family dynamics, changes in environment, societal pressure to fit in or conform to certain body images, and high scholastic expectations from parents. Due to the cultural perspective that views suicide as against religious principles nations such as Cambodia, Myanmar, Malaysia, and the Philippines, the true number of suicides is "grossly unreported". Mental health experts have also identified poverty and illiteracy as additional risk factors for suicide.



## 1.2 Research Questions

To address the research objectives, the research questions for this study are as follows:

(i) Does the urban population have an impact on suicide mortality in Southeast Asia?

(ii) Does unemployment exert an impact on suicide mortality in Southeast Asia?

(iii) What is the role of health expenditure in suicide mortality in Southeast Asia?

(iv) Does religion have an impact on suicide mortality in Southeast Asia?

## 1.3 Research Objectives

The objectives of the present study are organized as follows:

(i) To study the impact of urban population on suicide mortality in Southeast Asia;

(ii) To analyse the impact of unemployment on suicide mortality in Southeast Asia;

(iii) To investigate the role of health expenditure on suicide mortality in Southeast Asia;

(iv) To ascertain the impact of religion on suicide mortality in Southeast Asia.

## 1.4 Research Scope

This research focuses on the determinants of suicide in Southeast Asia by investigating the dynamic interactions among unemployment, health, religion, and suicide in the region. The study will examine the trend of suicide in relation to unemployment, health,

and religion, thoroughly exploring the correlations between the chosen variables for this study. Additionally, this study examines suicide rate data from the years 2000 to 2019, predating the Covid-19 pandemic, providing a 20-year overview of suicide mortality trends in the Southeast Asia region.

The research covers the Southeast Asian region, comprising ten member states: Thailand, Singapore, Malaysia, Vietnam, Lao PDR, Cambodia, Myanmar, Philippines, Indonesia and Brunei. Each state is unique in terms of its economy, facilities in health institutions, and religion. This research is conducted based on secondary data obtained from various reports and journals related to the research topic. The collected data is then analyzed to generate quantitative insight that will strengthen the main findings and results of this research. Through quantitative analysis, the study aims to enhance our understanding of the complex factors influencing suicide in Southeast Asia.

## 1.5 Research Significance

Worldwide, suicide is the second leading causes of death for those aged between 15 and 29 years old (WHO, 2019). Around 75% of suicides worldwide in 2012 took place in low- and middle-income nations. However, financial hardship is not the only cause of suicide. Despite South Korea having the 11th highest GDP in 2016, the country's suicide rate in 2015 was a startling 32 per 100,000, making it the highest rate in the developed world (World Bank, 2019). These somber numbers serve as a stark reminder that no nation or culture is immune to suicide and highlight the multifaceted complexity of the problem. Understanding the determinants of suicide in Southeast Asia is crucial for each state in the region. Determining the related factors that lead to suicide will help the state

authorities comprehend the intricacies of the problem that caused a rise in the phenomenon from year to year. Grasping the roots of the problems will provide great assistance for policymakers to construct workable and effective preventive measures. Reducing suicide cases will also prevent the state from incurring a significant lost and cost.

From this research, a thorough understanding of the impact of religion on suicide will be gained. Consequently, religious institutions could initiate preventive efforts, especially in raising awareness about appreciating life and encouraging self-love. Religious institutions could provide strong support system for believers and the community, emphasizing the essence of life in the prevention of suicide. Additionally, religious institutions can play a vital role in encouraging the community to seek help, advice, and consultation regarding challenges endured in life.

The significance of this research also lies in highlighting the role of religious institutions from specific religions that may have a higher rate of suicide among their followers. This insight could encourage these institutions to adopt approaches from religions with lower suicide rates among their believers. The unity among various religious institutions should improve through cooperation that may emerge from the results of this study.

The main significance of this research is that the findings from this study will help state authorities to craft targeted policies to counter the rising suicide mortality rate in Southeast Asia. Prioritizing state allocations in the planning budget for respective fields, especially those directed at curbing the trend of suicide, is essential if the state aims to address this problem effectively. CA comparative study among states in the region,

focusing on the budget allocated to health institutions, will provide insights into the significance of curbing suicide. This research hopes to contribute to the development of Southeast Asia as a harmonious and prosperous region.

## 1.6 Chapter Division

This study is structured into five coherent chapters. The first chapter introduces the focus of study, highlighting the problem statement, research questions, research objectives, research scope, and research significance. The second chapter provides an insight on the origin and nature of suicide that occurred in various circumstances. The third chapter commences with an introduction, followed by relevant literature reviews on suicide and economic growth. Then, suicide and access to health care is examined, along with religion and other factors that influence suicide.

The fourth chapter discusses the methodological approach and methods adopted in this research to achieve the targeted objectives. The fifth chapter of this research presents the research results, followed by a discussion arising from the analysis from the data collected and projected. The data is analyzed using an empirical strategy designed to explore suicide mortality rate in greater detail. The last chapter of the study, Chapter 6, provides a summary of the study's major findings and implications. This chapter ends with recommendations to improve state policies to combat suicide, as well as suggestions for future research.

# CHAPTER 2: LITERATURE REVIEW, THEORETICAL AND CONCEPTUAL FRAMEWORK

## 2.1 Introduction

In this chapter, the study delves into extensive research of existing literature that highlights the intricacies in the interactions between suicide mortality, and key socio-economic, health, and cultural factors within the context of Southeast Asia. As the study embarks on this journey of literary exploration, the study aims to synthesize and critically analyse the wealth of knowledge generated by scholars, researchers, and experts in the field. By navigating the extensive literature, the study seeks to extract valuable insights that will not only enhance our understanding of the nuanced connections between suicide, unemployment, health, and religion but also provide a foundation for the subsequent theoretical and conceptual frameworks.

## 2.2 Literature Review

### 2.2.1 Unemployment and Suicide

Unemployment results in certain circumstances and difficulties in one's life. Unemployment has restricted the resources available for any individuals involved in this situation. The limitations on obtaining or providing basic life necessities are profound when an individual becomes unemployed. Unaffordability has the potential to affect the morale and spirits of a person. The situation gets worse when there are other mouths to feed. It causes a lot of stress and many have become depressed due to unemployment. Some may not be able to cope with the difficulty of continuing with life and make the

decision to end their own life. This is clearly mentioned by Hawton (2000) as suicide is associated with unemployment.

As unemployment is correlated with suicide (Hawton, 2000), there are three plausible explanations given by Jones (1991): unemployment may increase a person's susceptibility to stressful life events; by increasing the risk of conditions like mental illness and financial difficulty, it may also tangentially add to suicide; alternatively, it may only be an association rather than a cause because of confounding or selection by variables that predict both jobless status and suicide risk.

There is an almost twofold higher suicide risk among the unemployed (Lewis and Slogget, 1998); nevertheless, there is still a chance of health selection or residual confounding. A false connection between unemployment and suicide results from health selection, where poor health predicts and precedes both mortality and unemployment. The British General Household Survey data on the incidence of hindering over time illness by position in the workforce correlated with well-being choosing into the inactive workers force (except those who were employed and unemployed), but not into the jobless category, which is defined as actively seeking and available for work (Bartley and Owen, 1996). The fact that a greater proportion of "ordinary" people that is, those without poor health or other characteristics that make them more vulnerable are experiencing unemployment during periods of high background unemployment rates is another way to test the validity of the health selection hypothesis. This test has generated conflicting evidence. Findings from the UK's OPCS Longitudinal Study show a robust correlation between unemployment and all cause death (including suicide) throughout both high and low unemployment periods (Moser et al., 1987). In contrast, Finnish data indicates

decreased relative suicide risks for the unemployed when compared to the employed during periods of high unemployment (Martikainen and Valkonen, 1996).

There are significant negative consequences for a worker's mental health that may occur when they are abruptly and unwillingly laid off from a job, even though it is difficult to overstate the financial hardship of unemployment. A good, secure job can boost social networks, provide cerebral challenge, and give one a sense of fulfilment. Work offers a person with much more than just a pay check. According to neuropsychologist Brittany LeMonda, “we experience higher levels of self-worth, advocacy, and meaning thanks to our job. While there are financial and material benefits to working, it also fosters a sense of community. The connection between unemployment, substance misuse, and even suicide - becomes evident when one considers that "job loss" can be as much of a damage to one's emotions of self-worth as it can be to one's money account.

In addition to the large increase in suicide rates in North America and Europe during the Great Recession of 2007–2009, 15 million Americans claimed for jobless benefits. In a 2014 paper, Oxford sociologist Aaron Reeves discussed how middle-aged or older males made up a large portion of the suicides and how "unemployment damaged the men's sense of identity and masculinity" in many of those cases. Regardless of gender, millions of people have lost their employment and must deal with the simultaneous compounding effects of loneliness, pandemic anxiety, and possibly the death or serious sickness of a loved one. This makes it practically hard for some people to deal with job loss in a healthy way.

A new study from the Meadows Mental Health Policy Institute (MMHPI) provides evidence for this and contains national examples demonstrating that "over the course of a year we could lose 4,000 more Americans to suicide for every five percent increase in the unemployment rate, an unemployment rate on par with the 2007-2009 recession." The MMHPI report is the first in a series that examines how the Covid-19 epidemic has affected mental health. The paper also underlines the crucial point that for every suicide, many others are experiencing suicidal thoughts, despair, or substance use disorders (SUD). The correlation between SUD and unemployment is concerning, according to the MMHPI, "adults who are working have an SUD involving an illegal drug, including opioid use disorders, at a rate of 3%." A further admission made by the MMHPI is that "there is no comparator to serve as a proxy for the COVID-19 related social isolation, loneliness, psychological distress, substance misuse, and terror that has profoundly afflicted the U.S. population" and that these estimates may even be conservative.

Recently released research addresses the societal costs of the 2008 banking crisis and the subsequent economic slump. Carlos Nordt and colleagues at the University of Zurich conducted the analysis to examine the relationship between rising suicide rates and unemployment rates. One in five suicides, or 45,000 annually, are attributed to unemployment, and the economic crisis is also blamed for another 5,000 deaths. At both the individual and societal levels, there are numerous connected and co-occurring biopsychosocial variables that contribute to suicide's complexity and varied nature. It is essential to design effective interventions and appropriate prevention strategies by having a thorough understanding of the risk and protective variables for suicidal behaviours (such as suicide, suicide attempts, and self-harm) and thoughts. Economic variables are important and well-established socioeconomic determinants of health and health equity, and they are associated with persistent and systemic health issues, including the inability

to receive proper care, for people who are experiencing growing poverty and financial difficulties. It is becoming more widely acknowledged that economic considerations negatively affect both individual and social mental health and suicide.

Financial difficulty (such as the inability to pay back debt), short- and long-term unemployment, underemployment (such as working fewer hours than desired or necessary due to economic reasons), overqualification, and precarious or unstable employment are just a few examples of prominent economic factors that can affect an individual. Macroeconomic factors most typically include the general unemployment rate, gross domestic product (GDP), and times of economic crisis/recession at the population level (also known as aggregated, social, or ecological level). Events and policies in the national and international economies, as well as the aftermath and responses to natural and man-made disasters, have a significant impact on each of these variables. Economic elements are, in reality, inextricably interwoven and mutually reinforcing at both the individual and society levels.

Suicides are thought to claim about 1 million lives annually, with Asia accounting for up to 60% of those deaths (Beautrais, 2006). There may be more than 60 million people affected by suicide each year in Asia, with 10–20 times as many attempts at suicide as fatalities and 5–6 people affected by each suicide fatality, according to generally agreed figures. Suicide gets less attention than it does in the West despite these worrying statistics and the fact that it is a major public health issue (Yip, 2008), which undervalues relevant research and leads to dispersed prevention strategies (Hendin, 2008).

The availability and calibre of suicide data for monitoring and surveillance represent a significant barrier to understanding suicide in Asia. The suicide rate for about 20% of the population is unknown. There are issues with underestimating in nations where statistics are available because to incorrect ascertainment and a delay in reporting suicide fatalities. Suicide reporting is influenced by social, cultural, and religious factors, which are exacerbated by inaccurate population projections. The certification process for suicide is viewed as more trustworthy in Hong Kong, Japan, Malaysia, Singapore, South Korea, and Taiwan. All reported or suspected suicides in these nations must be investigated by a coroner, medical examiner, or forensic pathologist; in most cases, a police investigation report is also required to ensure the incident is not a homicide. Since all certificates must be registered with the health department, it is believed that the reliability of suicide estimates.

In contrast, the accuracy of suicide estimates is rated as poor to fair in Sri Lanka, China, India, and Thailand. There can be a sizable underreporting in these nations. For instance, rather than a thorough census of the entire population, the official suicide rate in China is based on a random sample of 145 surveillance sites. Similarly, underreporting may be even worse in India due to the continued stigma surrounding suicide. National statistics on suicide are simply lacking in many other Asian nations, including Pakistan and Vietnam. The overall suicide rate in Asia is roughly 19.3 per 100,000, which is almost 30% higher than the global rate of 16.0 per 100,000 when these limitations in the accuracy of suicide data are considered (WHO, 2011).

The majority of the suicide literature comes from Western nations; however, the epidemiologic patterns, risk, and protective factors of suicide are very different

throughout Asia. The mental health of the population is anticipated to deteriorate and suicide rates to climb over the next two decades as a result of recent fast changes in the social and economic systems of many countries in the region, as well as limited and underdeveloped mental health facilities (WHO, 2010). Since suicide is the main cause of death among younger persons when compared to other causes, the potential years of life lost and the accompanying socioeconomic cost are significant in the area (Yip et. al, 2005).

Given the magnitude of the issue and the foreseen vicissitude of suicide in the region, an in-depth and thorough review of the status of and recent trends in suicide in Asia is timely and will have a significant impact on suicide prevention globally. The epidemiologic patterns, risk, and protective factors of suicide in Asia are significantly different from those in Western countries.

The impact of unemployment towards suicide is clearly visible and can be observed when economic crisis occurs in this region. During financial crisis in 1997-1998, Southeast Asian countries economies were hit badly and the rate of unemployment increased. A study on 1997-1998 economic crisis studying the relationship between the crises and the rising suicide rate in East and Southeast Asia countries by Chang et al., (2013), shows that there is a parallel increasing trend between the unemployment and suicide rate. According to the study, there were 10,400 more suicides in 1998 than in Japan, Hong Kong, and Korea in 1997 as a result of the economic crisis. In Taiwan and Singapore, the two nations where the economic crisis had a less noticeable effect on GDP and unemployment, similar rises in suicide rates were not observed. Time-series analyses showed that increases in unemployment were responsible for part of the crisis's effects on

male suicides. These data imply that the Asian economic crisis was linked to a large jump in the suicide mortality rate in some East/Southeast Asian nations, but not all, and that these increases were most closely linked to increases in unemployment.

A similar situation can be observed during the 2008 financial crisis. Several countries were significantly impacted by the 2008 worldwide economic crisis. Unrest in the banking industry caused stock market declines, bankruptcies, foreclosures on homes, and increases in unemployment. The International Labor Organization (ILO) estimated that there were 212 million unemployed individuals worldwide in 2009, a 34 million rise from 2007 (ILO, 2010). The World Health Organization (WHO) called for organized, multisectoral action to carefully watch and protect health, especially for the poor and vulnerable, because it is concerning how the crisis will affect health globally. There is general concern that suicide rates may increase in countries impacted by the global economic crisis given the evidence that economic downturns and the accompanying increases in unemployment are followed by increases in suicide (WHO, 2009). For instance, nearly 10,000 additional suicides are thought to have occurred because of the 1997 economic crisis in Japan, South Korea, and Hong Kong (Chang et al., 2013). Previous studies have shown that men of working age tend to be the most affected by economic downturns; for example, during the early 1990s Russian and 1997 Asian financial crises, male suicide rates rose more than those of women and older individuals combined.

Figure 2.1 illustrates the increase of unemployment rate after the global economic crisis in 2008 in Asia-Africa. The baseline of unemployment rate is in 2007, a year before the

economic crisis and the impact of unemployment were observed in 2009 and 2010, giving time for the effect to take place.

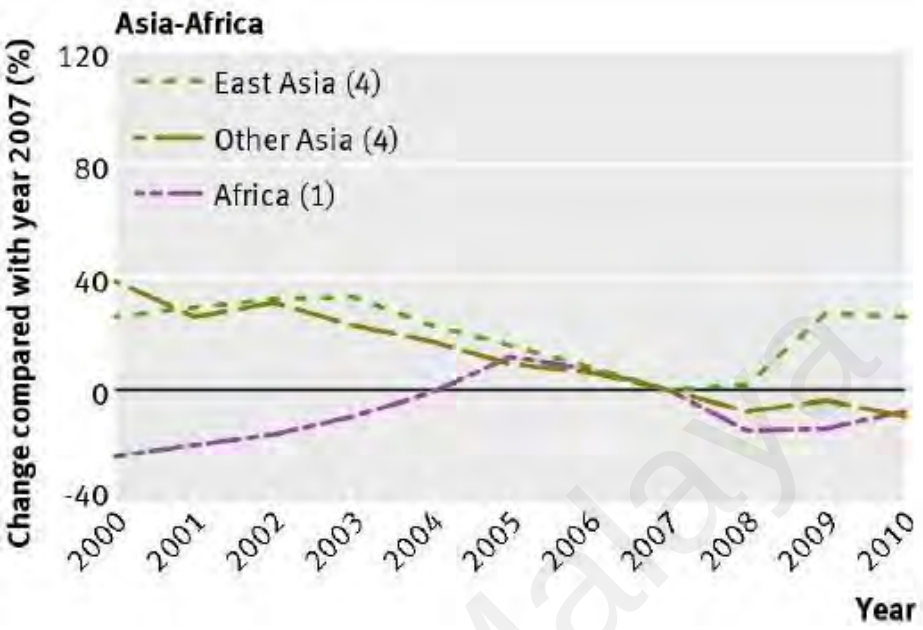


**Figure 2.1: Changes in unemployment rates in Asia-Africa, 2000-2010.**

Source: BMJ Clinical Research (2013)

In 2009 to2010, East Asian countries had an increase in unemployment of 26-27%. According to data from other Asian regions and one African country (Mauritius), unemployment was constant between 2008 and 2010 compared to 2007. Increases in suicide rates, rate ratios, and excessive suicides were observed in 2009 compared to what was anticipated based on patterns from 2000 to 2007. In the study conducted by Chang et. al. (2013), there were evidence suggesting a link between the rise in suicide rates following the crisis and the rise in unemployment across the countries, notably in men and in regions where the unemployment rate prior to the crisis (2007) was relatively low.

**Table 2.1:** Correlation between unemployment rate (%) point changes between 2007 and 2009 and suicide rate ratios in 2009.

| | No of countries | Spearman's $r_s$ (95% CI) | P value |
|---|---|---|---|
| **All countries** | | | |
| Men | 50 | 0.25 (–0.03 to 0.50) | 0.075 |
| Women | 50 | 0.10 (–0.18 to 0.37) | 0.49 |
| **Countries with low unemployment level (<6.2%) before crisis** | | | |
| Men | 25 | 0.48 (0.10 to 0.73) | 0.016 |
| Women | 25 | 0.13 (–0.28 to 0.50) | 0.55 |
| **Countries with high unemployment level (≥6.2%) before crisis** | | | |
| Men | 25 | 0.31 (–0.10 to 0.63) | 0.13 |
| Women | 25 | 0.20 (–0.21 to 0.55) | 0.34 |

Source: BMJ Clinical Research (2013)

Overall, the data in Table 2.1 shows positive values and it is significant in men (0.25) compared to women (0.10). The highest value can be seen in countries having a lower unemployment rate before the crisis among men with a coefficient of 0.48 while for women 0.13. Countries with lower unemployment rate before the crisis represent the significant impact of unemployment on the rate of suicide after the crisis. The difficulties and challenges faced during the economic downturn have forced many people into the state of depression and loss of hope in life, leading to suicide.

Suicide trends in Asia have their own inimitable pattern and are reasonably closely related with acute life stress. Acute life difficulties include losing a job, gambling for money, and issues at work are significant factors that lead to suicide among Asian men

(Manoranjitham et al., 2010). Asian countries comprise a mixture of under-developed and developing countries. The transition of rural to urban life are most likely experienced by these populations. The transition incites a high demand in the migrator to adjust especially in terms of financial needs. The poverty in Asia can be observed widely, especially in urbanised areas. The inability to cope with the financial needs that come with basic life necessities contributes to the stresses of life and can lead to suicide. In Asia, financial difficulties are more frequently associated with suicides compared to western countries (Liu Ky et al., 2009).

Unemployment does not only affect the individuals but also has broader implications within the context of the dominant extended family system in Asian countries. According to the family structure prevalent in Asia, men are commonly the breadwinners. Job loss or unemployment creates depressive tension among men, as their inability to provide for their family and secure the future of their family's lives have not only led to suicide but, more tragically, to familicide-suicide. Another manifestation of the family-centred culture is the sharp increase in family-related suicides committed by male household heads while confronting job loss in various Asian countries (Yip et al., 2012).

The Asian Economic Crisis of 1997 led to a rise in suicide rates in several Asian countries, including Hong Kong, Korea, Japan, Taiwan, and Thailand. In other words, an increase in suicide rates in Asia typically coincides with the economic downturn. The greatest rates of suicide among middle-aged males in Japan may be a result of neo-liberal corporate sector restructuring. The once-unbreakable promise of lifetime employment has been broken in the name of "labour flexibility." The high rate of suicides among middle-aged males in Japan is associated with job uncertainty and a lack of social protection for the

economically active group (Kim, 2018). Several other industrialised Asian nations including Korea, Hong Kong, and Taiwan are indeed experiencing all the shifting corporate environments, and there has also been a noticeable increase in middle-aged male suicides there over the past ten years (Chang et al., 2009). In addition to the suffering brought on by unemployment, individuals who are still working are under a great deal of stress due to the threat of losing their jobs. Communities are experiencing excessive anxiety and stress because of how quickly society is changing, which could result in a rise in the number of suicides.

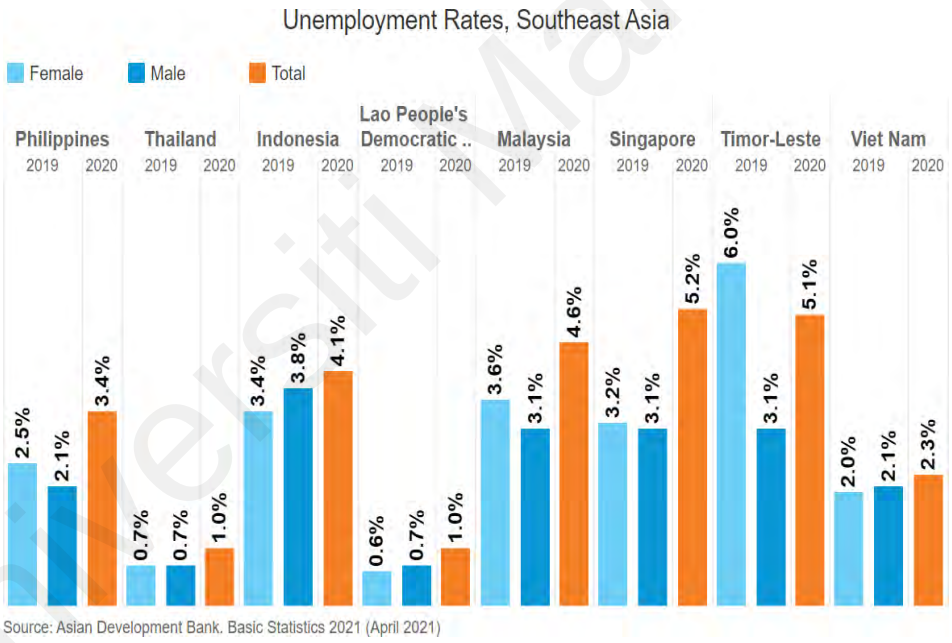


**Figure 2.2: Unemployment rates, Southeast Asia**

Source: Asian Development Bank (2021)

In the recent Covid-19 incident, the implementation of social segregation rules and the associated labour market effects led to a significant loss in job opportunities. Additionally, Covid-19 had a significant effect on Southeast Asia's GDP growth in 2020. According to Basic Statistics 2021, the Philippines experienced the largest decline ever

with a contraction of 9.6% (Asian Development Bank, 2021). Widespread unemployment resulted from the lockdown that followed the epidemic in the first half of 2020. According to the data, unemployment in the Philippines increased from 2.5% of the female labour force and 2.1% of the male labour force in 2020 to 3.4% for both genders (see Figure 2.2).

For the last five years, the Philippines' jobless rate has averaged around 2.5% (Asian Development Bank, 2021). However, the pandemic and subsequent lockdown undeniably contributed to the substantial increase in unemployment in the Philippines in 2020. The government's plans to enhance employment market programmes and support sectors that were badly affected by the pandemic, such as agriculture and tourism, were to allow an economic recovery in 2021 if a thorough national vaccination campaign can be implemented.

Tourism-dependent, according to Asian Development Bank (ADB) data, Thailand was also severely impacted, with GDP growth declining by 6.1% in 2020 after increasing by 2.3% in 2019. According to Basic Statistics 2021, there was a parallel increase in unemployment from 0.7% to 1.0% in 2020. The industries that lost the most jobs were manufacturing, agriculture, and tourism industries. According to ADB's Asian Development Outlook (ADO) 2021, the economy was anticipated to rebound in 2022, with the growth rate estimated to increase to 4.5% as global trade, tourism, and vaccination rates increase.

Suicide is expected to rise significantly amid the Covid-19 pandemic as it impacted many lives, health and mental well-being. The unemployment rate increased as one of the

impacts of Covid-19, contributing to the suicide rate. This is due to the two causes that are included in the category of human catastrophes, which also includes diseases, terrorism, natural disasters, wars, and other forms of violent conflict. Looking through history in perspective of economic recessions and depressions – as this is one of the huge impacts from Covid-19 tragedy, we can foresee the suicide trend in coming years.

The Great Depression (1929–1933), which began with the infamous stock market crash in the United States and expanded to many other industrialised economies, is known to cause an increase in suicide cases. In the United States, suicide rates rose by 22.8% between 1928 and 1932, the highest rate of growth in any four-year span from 1938 to 2007 (Luo et al., 2011). The second event that comes to mind is the Asian economic crisis of 1998–1999, which saw a significant increase in suicide rates—up to 39% in Japan, 44% in Hong Kong, and 45% in South Korea. Not as badly affected, Taiwan and Singapore revealed no correlation between suicide rates and financial hardships (Chang et al. 2009).

In Ireland from 2008 to 2012, researchers looked at how the economic downturn, which led to a rise in unemployment and subsequent austerity measures, affected suicide and self-harm. According to one study, the suicide rate for men was 57% higher by the end of 2012 than it would have been had the pre-recession pattern persisted, while the rate for women was essentially constant (Corcoran et al., 2015). Self-harm rates were 31% greater for men and women. According to a 2015 study by Corcoran et al., "five years of economic recession and austerity in Ireland have had a significant negative impact on rates of suicide in men and self-harm in both sexes." Among the 26 member states of the European Union, only Finland and Sweden were outliers in that an increase in suicide did

not correspond to an increase in unemployment. The authors hypothesized that supportive active labour market programmes played a role in this (Stuckler et al., 2009).

Disasters are always a possibility for people, and they typically have a negative impact on their mental health. The most toxic of all the disasters including war, violence, natural disasters, epidemics/pandemics, and economic recession—appears to be this last one. When everything is said and done, we might not notice a significant change in the patterns of the suicide rate. But based on past events, it's possible that we'll see a rise in psychiatric cases and brief surges in suicide behaviour, especially in vulnerable populations like healthcare professionals, the elderly, and people who face extreme financial hardship (Devitt, 2020).

### 2.2.2 Health Expenditure and Suicide

A country's economic progress and health status are significantly influenced by its health expenditure. Experience has shown that nations that give this component the credit it deserves have human capital that is both healthier and more productive. In contrast to nations that spend less on the health sector, this raises a country's GDP. Users of healthcare, particularly in impoverished and emerging nations, must pay more out-of-pocket since public health expenditures in these nations fall short, possibly due to a lack of resources (Sengupta, 2015). Perhaps, a higher percentage of GDP allocated for health expenditure will make a difference, especially for mental health.

Health expenditures vary from one country to another, even within the same region. This difference is due to several factors and circumstances that shape healthcare policies. The epidemiological profile of each state or country varies. The World Health Organization (WHO) recommends that nations devote 5% of their GDP to health, however this guideline has never been legally accepted, and according to William Savedoff in his discussion paper "How Much Should Countries Spend on Health?", the recommendation has little basis in fact. However, regardless of the case, Table 2.2 displays the latest health expenditures of each state in Southeast Asia.

**Table 2.2: Current health expenditure (% of GDP) of Southeast Asia, 2018**

| Country | Most Recent Year | Most Recent Value |
|---|---|---|
| Indonesia | 2018 | 2.87 |
| Lao PDR | 2018 | 2.25 |
| Malaysia | 2018 | 3.76 |
| Myanmar | 2018 | 4.79 |
| Philippines | 2018 | 4.40 |
| Brunei Darussalam | 2018 | 2.41 |
| Singapore | 2018 | 4.46 |
| Thailand | 2018 | 3.79 |
| Vietnam | 2018 | 5.92 |
| Cambodia | 2018 | 6.03 |

*Data retrieved from The World Bank

**Source: World Bank**

From the retrieved data, most Southeast Asian countries still fall behind the WHO recommendation for health expenditure, which is 5% of the GDP. Vietnam and Cambodia lead in the percentage spent, with 5.92% and 6.03%, respectively. The lowest percentage spent in health expenditures is in Brunei Darussalam, with only 2.41%. Unfortunately, in this case, a higher percentage does not necessarily provide an absolute answer to better healthcare required by the population of the country. This is because the percentage is based on the GDP of each country, which varies. The Southeast Asian region comprises of low-income nations, middle-income nations and also high-income nations. Despite the

lower percentage of health expenditure in Brunei Darussalam and Singapore, both countries are actually leading in terms of average total healthcare expenditure per capita in Southeast Asia with US$ 1,449 and US$2,273, respectively. Therefore, several factors should be taken into consideration when determining the appropriate amount of health expenditures.

It is well known that health expenses are among the highest expenditures individuals incur in their lifetime. Unfortunately, for some, health expenses do not become a priority due to limited income sources. Southeast Asia, comprising mostly developing countries, struggles to afford high subsidies for healthcare, especially in mental health issues. This is evident from the shortage of psychiatrists within the region. Malaysia, as one of the leading developing countries, falls significantly behind in providing an adequate number of professional psychiatrists. Adham Baba, a former health minister, disclosed that Malaysia's psychiatrist-to-patient ratio was only a tenth of the recommended one per 10,000 people by the World Health Organization (WHO). While Malaysia should ideally have 3,100 psychiatrists, there are only 400 (The Straits Times, 2021).

Turning our focus to Southeast Asia, Thailand grapples with a mental health issue, related to the Covid-19 pandemic. The victims of include sex workers, tourism workers, and migrants from rural to urban areas. In the first half of 2020, 2,551 individuals committed suicide, reflecting a 22% increase over the same period in 2019. Health officials attribute the rise to stress induced by the pandemic. Many people feel helpless due to loss of income, isolation, and stress resulting from the restrictions imposed during the pandemic. Suicide helplines, such as the one run by Samaritans of Thailand, were overwhelmed during the outbreak, and reports surfaced of hotline messages going unanswered on social

media, as reported by CNA Insider. The Department of Mental Health's spokesperson, Varoth Chotpitayasunondh, confirmed that despite doubling the number of lines to 20, it still takes 10 to 12 minutes for a call to be answered, and the hotline's decline rate remains between 40 and 45 percent (Channel News Asia, 2021). This highlights the limited resources available to address mental health problems in Thailand.

Suicide goes hand in hand with mental health issues or mental illness. A nationwide survey conducted in 2003 provided data on the prevalence of mental diseases in Thailand using the AUDIT (Alcohol Use Disorder Identification Test) and MINI (Mini-International Neuropsychiatric Interview). With 11700 participants between the ages of 15 and 59 chosen through stratified two-stage cluster sampling, the data revealed that the three most prevalent issues were alcohol use disorders (28.5%), major depressive disorder (3.2%), and generalized anxiety disorder (1.9%). While generalized anxiety disorder is relatively low at this point, it is likely to increase amid the Covid-19 pandemic, as observed through the surge in calls received by Samaritans of Thailand.

Improving health expenditure to combat mental health-related issues can be achieved through federal government budgeting, nut this requires the implementation of policies and legislation. Thailand’s current mental health policy dates back to 1995, focusing on advocacy, promotion, therapy, rehabilitation, administration, and technological advancement. Promoting mental health, preventing mental health issues, developing treatment and rehabilitation services, creating a management system to reform all facets of mental health services, and cultivating contemporary psychosocial and other technical knowledge to successfully apply it to Thailand's mental health situation are all goals of the policy plan (World Health Organization, 2001). In terms of legislation, after the

unstable political atmosphere resided the Mental Health Act, B.E. 2551 (2008), was approved by the parliament, allowing individuals in need of psychiatric treatment to obtain it freely or be compelled to be admitted to a hospital for evaluation and treatment. The mental health legislation and policy provide a specific framework in the national plan to adequately address mental health-related concerns through strategic planning, especially with a focus on the current situation and future challenges.

However, even with the policy and legislation, the number of mental health personnel and the proportion to the whole population is still relatively very low. Table 2.3 demonstrates the proportion by region in Thailand.

**Table 2.3: Mental health personnel and proportion to the whole population, by region in Thailand**

| Region | Psychiatrists | | Psychiatric nurses | | Psychologists | | Social workers | |
|---|---|---|---|---|---|---|---|---|
| | n | Ratio | n | Ratio | n | Ratio | n | Ratio |
| Bangkok | 218 | 1:26267 | 173 | 1:33099 | 42 | 1:136338 | 117 | 1:48942 |
| Central | 75 | 1:195374 | 481 | 1:30464 | 44 | 1:333023 | 78 | 1:187859 |
| North | 31 | 1:391111 | 308 | 1:39365 | 45 | 1:269432 | 84 | 1:144338 |
| North-East | 39 | 1:551120 | 551 | 1:39009 | 48 | 1:447785 | 61 | 1:352356 |
| South | 24 | 1:346315 | 222 | 1:37439 | 17 | 1:488916 | 33 | 1:251866 |
| Total | 387 | 1:161005 | 1735 | 1:35913 | 196 | 1:317902 | 373 | 1:167048 |

*Data from the Department of Mental Health, Ministry of Public Health, 2003.

Source: Ministry of Public Health, Thailand, 2003

When compared to the WHO requirement of one psychiatrist for every 10,000 people, the number of mental health professionals is insufficient. First, from the data, we can see that the distribution of mental health personnel in Thailand is not uniform across the regions. Urbanised regions such as Bangkok have a better ratio of 1: 26267. In more remote regions like the North-East, there are fewer psychiatrists available to the

population, contributing to this significant difference, which is also due to limited access to the mental facilities in these areas.

Similarly, we observed the same trend in Malaysia, where there is a shortage of psychiatrists. According to a study conducted by Ng et. al (2018), in their paper entitled "Psychiatrists in Malaysia: The Ratio and Distribution", there were only 410 licenced psychiatrists working in private academic institutions, private practices, governmental institutions, and government hospitals in Malaysia. The state with the most psychiatrists is Wilayah Persekutuan Kuala Lumpur, which has 94 psychiatrists overall and a ratio of 5.24 psychiatrists per 100,000 people. It is followed by Wilayah Persekutuan Putrajaya, which has 3.38 psychiatrists per 100,000 people. Sabah and Kedah are the states with the lowest ratios of psychiatrists per 100,000 people (Table 2.4). In Malaysia, there is a disparity in the regional distribution of psychiatrists, similar to Thailand. Greater access to mental healthcare is available to residents of major, urban states, whereas a severe shortage of psychiatrists affects the smaller, rural states.

**Table 2.4 : Ratio and distribution of psychiatrists in Malaysia in 2018**

| States | Private University[a] | Public University[b] | Private Practice | Government Hospital[c] | Total Psychiatrists in each state[d] | Population[e] | Psychiatrist per 100,000 population |
|---|---|---|---|---|---|---|---|
| Perlis | 0 | 0 | 0 | 3 | 3 | 253100 | 1.18 |
| Kedah | 0 | 0 | 3 | 9 | 12 | 2166200 | 0.55 |
| Pulau Pinang | 5 | 0 | 8 | 9 | 22 | 1767900 | 1.24 |
| Perak | 3 | 0 | 5 | 32 | 40 | 2507200 | 1.59 |
| Selangor | 4 | 28 | 17 | 29 | 78 | 6448400 | 1.20 |
| W.P. Kuala Lumpur | 23 | 28 | 23 | 20 | 94 | 1792600 | 5.24 |
| W.P Putrajaya | 0 | 0 | 0 | 3 | 3 | 88700 | 3.38 |
| Negeri Sembilan | 3 | 0 | 2 | 10 | 15 | 1130600 | 1.32 |
| Melaka | 2 | 0 | 2 | 5 | 9 | 924900 | 0.97 |
| Johor | 5 | 0 | 8 | 28 | 41 | 3737200 | 1.09 |
| Pahang | 0 | 0 | 1 | 11 | 12 | 1664000 | 0.72 |
| Terengganu | 0 | 3 | 0 | 8 | 11 | 1226000 | 0.9 |
| Kelantan | 0 | 7 | 0 | 10 | 17 | 1854500 | 0.92 |
| Sabah | 0 | 4 | 4 | 13 | 21 | 3915100 | 0.54 |
| Sarawak | 0 | 2 | 7 | 22 | 31 | 2789400 | 1.11 |
| W.P. Labuan | 0 | 0 | 0 | 1 | 1 | 98400 | 1.01 |
| **TOTAL** | **45** | **72** | **80** | **213** | **410** | **32364200** | **1.27** |

[a]University of Malaya, Universiti Kebangsaan Malaysia, Universiti Sains Malaysia, Universiti Malaysia Sarawak, Universiti Putra Malaysia, International Islamic University, Universiti Teknologi MARA, Universiti Malaysia Sabah, Universiti Sains Islam Malaysia, Universiti Sultan Zainal Abidin, Universiti Pertahanan Nasional Malaysia

[b]International Medical University, Penang Medical College, Monash University School of Medicine and Health Sciences, Melaka Manipal Medical College, Universiti Kuala Lumpur – Royal College of Medicine Perak, Cyberjaya University College of Medical Science Faculty of Medicine, UCSI University, Management & Science University, AIMST University, MAHSA University, Newcastle University Medicine Malaysia, Perdana University Graduate School of Medicine, Perdana University Royal College of Surgeon, SEGi University, Taylor's University, Universiti Tunku Abdul Rahman, WIDAD University College, QUEST International University, Asia Metropolitan University School of Medical and Health Sciences, Lincoln University, Universiti Islam Antarabangsa Sultan Abdul Halim Mua'dzam Shah

Source: The Malaysian Journal of Psychiatry

The number of psychiatrists in each state of Malaysia is displayed in Table 2.4. Only 410 psychiatrists, or 0.02% of the country's total population, practice in Malaysia. Wilayah Persekutuan Kuala Lumpur (66), Selangor (50), and Perak are the three states with the highest concentration of psychiatrists (40). One psychiatrist works at Wilayah Persekutuan Labuan. For example, Malaysia only had 1.27 psychiatrists per 100,000 people in 2018, which is still below the WHO-recommended level.

Nowadays, mental health problems are affecting an increasing number of people worldwide. Due to these two countries' very high populations, the WHO estimates that over 50% of all people who suffer from depression reside in the Western Pacific and Southeast Asia regions (WHO, 2017). There are 11 nations that make up Southeast Asia,

and most of them fall into the World Bank's countries with low-income category. These impacted nations have a significant treatment gap of 90%, making them vulnerable to a range of mental health problems and difficulties due to their dire financial situation and severe lack of human resources. Nine of these 11 nations have fewer than one psychiatrist per 100,000 citizens (Sharan et. al. 2017). Only 0.29, 0.46, and 0.87 mental health doctors per 100,000 people, respectively, were found in Indonesia, the Philippines, and Thailand, according to statistics from the WHO's Global Health Observatory. In Singapore, there are 3.48 psychiatrists for every 100,000 people, which is more than in other nations in the region.

The severe lack of psychiatrists in the nation may cause several issues for people who are dealing with mental health issues, including delaying treatment, seeking non-evidence-based alternative treatments, waiting a long time for a psychiatric consultation, receiving poor outpatient mental health care, not following up on treatment as prescribed, increasing drug abuse and addiction cases, rising suicide rates, unemployment, and homelessness. Additionally, general practitioners must take on the responsibility of caring for these patients and are unlikely to offer the necessary level of treatment, such as psychotherapy. Due to the rising demand, currently practising psychiatrists may likewise experience significant rates of burnout. Most nations have an unequal distribution of psychiatrists, with the highest concentrations occurring in the larger, wealthier cities. Therefore, due to a lack of resources, the rural poor may have trouble getting basic mental health care.

The issue of shortage of mental health practitioners and facilities to treat patients is already well addressed by a number of researchers. However, the question is, does health

expenditure really provide protection towards suicide? It's interesting to note that a study using publicly available information on public mental health expenditure by U.S. states from 1997 to 2005 examined the impact of the state spending on mental health in reducing suicide rates. The study's findings indicate that the per capita public mental health spending impact on the suicide rate is statistically insignificant and of a qualitatively low magnitude. According to the projections, state mental health spending may not be as helpful at preventing suicide as programmes oriented at income growth, divorce support or prevention, and aid for low-income people (Ross et al., 2012).

### 2.2.3 Religion and Suicide

Religion is known to be a belief that guides people toward good behaviour and protects them from anything harmful. Religions are known for advocating destructive action, whether directed towards oneself, others, or even living things such as animals and trees. As a guide for living life, religions teach kindness, empathy, goodwill and other moral ethics. The belief in the existence of God manifests that good deeds will be rewarded, and bad deeds will be punished, also suggesting an afterlife in some religions.

Suicide is generally seen as a self-destructive action that leads to self-death and major religion worldwide do not condone this act. Empirical data on the relationship between religion and suicide are mixed, with some studies finding a protective effect of religion (Dervic et al., 2004), others identifying it as a risk factor (Zhao et al., 2012), and some showing no clear relationship between faith and suicide risk (Koenig, 2009; Perlman et al., 2011; Suicide Prevention Resource Center, 2003; Le, Nguyen, Tran, & Fisher, 2012).

Due to the complexity of both concepts, the relationship between religion and suicide is challenging to establish.

Religions have always included concepts of life and death, influencing the understanding, attitudes, and behaviours of their followers regarding suicide. Emile Durkheim claimed in 1897 that religious adherence and spiritual devotion might enhance emotional well-being by providing purpose and structure in life (Durkheim, 1951). Studies examining the link between religion and suicide often use terms like piety, spirituality, and religiosity interchangeably. Spirituality, often defined as personal beliefs about the existence of something greater than oneself, lacks a standardized definition, measures, and a focus in available literature compared to the formal concept of religion.

Research spanning over 50 years consistently demonstrates a link between high degrees of religiosity and a reduced chance of suicide. (Kranitz et al. 1968). The empirical data consistently shows that the suicide cases spans across different religions. Religiously affiliated individuals exhibit lower suicide rates across various religions (Dervic et al., 2004; Martin, 1984; Stack and Kposowa, 2011b), indicating a potential preventive measure against suicidal thoughts (Rasic et al. 2011). To support this statement even further, a study showed that churchgoers have a four-fold lower risk of committing suicide than non-churchgoers (Martin, 1984). On top of that, Stack and Kposowa (2011) found that individuals who adhere to one of the four main religions, live in societies with relatively high levels of piety, are dedicated to their religion and are involved in a religious network which have reduced the rates of suicide attempts.

The relationship between religion and suicide is quite clear in terms of its role in preventing suicide ideation or attempts. Individuals with religious affiliations have a lower tendency to commit suicide compared to those without affiliations. This is because a person with religious affiliations tends to not have suicidal ideation when compared to someone unaffiliated. According to two American studies conducted in the past, those who identify as religious are less likely to harbour suicidal thoughts than those who do not. Dervic et al. (2004) conducted interviews with 371 depressed inpatients in the United States and discovered that those who were not religiously associated scored higher on the Scale of Suicidal Ideation (mean 16.0, n=61) than those who were (mean 12.9, n=305, bivariate p=0.04) (Dervic et al., 2004). Similar findings were made by Spencer et al. (2012), who surveyed 700 American people with advanced cancer and discovered that suicidal thoughts were more prevalent among unaffiliated patients (10 of 34, 29.4%) than in those who were religiously attached (51 of 661, 7.7%). A person affiliated with a religion might have a lower less tendency towards suicidal ideation due to following the prohibitions stated by the teachings of the religion. The study does not specify the religion embraced by the depressed inpatient or adults with advanced cancer, but assuming the United States with the majority being Christians, the act of suicide is condemned by the teaching of the religion. This is also similar to other Abrahamic religions such as Islam and Judaism. Therefore, we can see that religion does have a clear relation with suicide.

Any psychosocial assessment must include an evaluation of religion, especially when working with suicidal clients, given the potential protective effects of religious conviction and affiliation against suicide risk. An honest assessment of a client's religious activity and religion may reveal any suicidal tendencies. Assessing religiosity may also reveal potential therapy targets and ways to strengthen life-affirming hopes and beliefs. According to some research, religious convictions, congregational support, and the

ministry of clergy all had a significant impact on the grief process for survivors of suicide attempts (Vandercreek and Mottram 2009).

In regards to gender, it seems that religion has a different effect on suicidal behaviour. For instance, research on over 28,000 men and women found that among men, lower levels of religious participation and conviction are linked to higher suicide rates, but there is no evidence that this connection holds true for women (Neeleman et al., 1997). Similarly, other research has found that males only may be more at risk of suicide than females when it comes to religious inclination, but this conclusion was similarly limited to males (Ozdel et al., 2009). Contrary to religious inclination, religious attendance among women traditionally has been shown to be negatively correlated with suicide rates (Neeleman et al., 1997). Similar findings were made by VanderWeele et al. (2016), who discovered that compared to women who never attend religious services, women who attend religious services at least once a week have an approximately fivefold lower suicide incidence (VanderWeele et al. 2016).

According to a new study by Kralovec et al. (2017), women feel religion's protective effects on their mental health more than men do. This finding is in line with previous research on religion's protective effects on both sexes (Colucci and Martin 2008; Rasic et al. 2011). Their results suggested that more religious factors, such as beliefs, religious experiences, and prayer, may influence a woman's risk of suicide than simply attending religious services (Kralovec et al. 2017). Religion can serve as a deterrent by providing a network of social support, a sense of purpose in life, self-esteem, and coping strategies in times of distress, according to an early study on the risk of suicide behaviour in high-risk pregnant women (Benute et al., 2011).

Ethnicity also seems to make a difference in the connection between religion and suicide. Research suggests that cultural forces may have an impact on the protective effect of religion (Al-Sharifi et al., 2015). Additionally, research has shown that religious contextual factors have a significant impact on Latino suicide rates in the USA. Latinos born in the US, for example, profit from religious groups of all religions, whereas Latinos born overseas seem to benefit mostly from Catholic adherence and religious uniformity (Barranco 2016).

According to Assari (2012), religious convictions among Black people may serve as a barrier to the greater influence of mental illnesses on suicidal ideas. Black individuals with psychiatric illnesses and lower levels of religiosity are particularly at risk for early-life suicidal thoughts. However, in a follow-up study, African-American males with psychiatric illnesses were more likely than Caribbean Black adults or women to have religious beliefs that prevented suicide (Assari, 2015).

Further studies reveal that among African Americans and Caribbean Blacks, contact with churchgoers is favourably correlated with suicide attempts while perceived closeness to churchgoers is negatively correlated with suicidal thoughts (Chatters et al. 2011). Additionally, it has been discovered that unfavourable interactions with churchgoers and attendance at services are unrelated to suicidal thoughts and attempts (Chatters et al. 2011). In contrast to European Americans, African Americans have stronger correlations between social support and reasons for living and religiousness and reasons for living than European Americans (see June et al., 2009). Despite the fact that religion has been found to be protective for African-Americans, research has mostly been limited to studies

in the USA. Stack and Kposowa (2011), however, looked at this tendency across ten different countries. They discovered a relationship between religion and suicide in 10 different countries, with black males' suicide acceptability decreasing with increasing religiosity (Stack and Kposowa 2011).

Researchers have found links between religious participation and psychiatric disorders like mood, anxiety, and substance use as well as suicidal ideation and attempts in studies that have examined these relationships in people from various ethnic backgrounds. For instance, Robinson et al., (2012) demonstrated that infrequent church participation was only connected to anxiousness and suicidal ideas in Whites and Hispanics and only to substance use problems in Whites and African Americans. Additionally, Asians were the only group in which religion practice was connected to psychiatric illnesses (Robinson et al., 2012).

Age also affects how risky or protective religion is. According to research, religion may have a greater protective effect against suicide in elderly people than in younger people (Wu et al., 2015). According to studies, elderly people who have had more recent traumatic life events and who have a high level of intrinsic religiosity report having more thoughts of ending their lives (Jahn et al., 2012). These findings have been ascribed to an inherently lower dread of mortality in older, religious individuals (Jahn et al., 2012). The association between religion and suicidality in older persons (aged 59 and older) was also studied by Rushing et al. in 2013. According to the findings, going to church was linked to individuals having lesser suicidal thoughts. Only a small portion of this association was mediated by perceived social support. Results also revealed that among senior people, church participation, over and above the importance of religion, private religious

practices, and social support, has the greatest relationship with present suicidal thoughts (Rushing et al., 2013). The importance of religion and religious activities in older folks' life as sources of meaning and comfort that can help them overcome suicidal thoughts and attempts has also been noted by other researchers (Figueiredo et al., 2015; Huang et al., 2017).

Additionally, studies demonstrate that religion differs by subgroup of mental health diagnostic. For instance, people who report having a poor view of religion among those who are depressed also report having a higher likelihood of considering suicide; however, this is because of its link to emotional liability (Baetz and Bowen 2011). Further, Lizardi et al., (2008) found that non-religious and lifetime suicide attempts were considerably higher in depressed inpatients who had lower moral objections to suicide. Intrinsic piety was found to be associated with resilience, quality of life, and fewer previous suicide attempts in research on religion and melancholy in hospitalised patients (Mosqueiro et al., 2015). Affirming positive religio-spirituality, which is described as attending religious services and believing in a greater force that offers solace, strength, support, and direction, has been shown to decrease suicidal ideation in studies on depressed individuals (Baetz and Bowen 2011).

However, there is conflicting evidence regarding religion's potential to prevent suicide in depressed people. People who identify as religious are more likely to have tried suicide in the past, and people who respect religion more and attend religious events more frequently are more likely to have suicidal thoughts, according to several studies (Lawrence et al., 2016).

Some studies have linked negative religio-spirituality, which is defined as harbouring resentment or doubt towards God as well as feelings of being punished or abandoned by God, with a rise in suicidal ideas in depressed individuals (Baetz and Bowen, 2011). Self-reported piety was not significantly linked with suicidality in another research that examined the role of religious views in lowering the risk of suicide among depressed women, and instead had neither a hazard nor protective impact (Florenzano et al., 2014).

High religious affiliation has been linked to an elevated risk of suicidal conduct among individuals with bipolar disorder who are depressed (Azorin et al., 2013 ; Caribe' et al., 2015 ; Dervic et al., 2011). For instance, Azorin et al., (2013) discovered that despite having a religious affiliation, people with bipolar spectrum illnesses who have high levels of religious participation and mixed traits may be more likely to engage in suicidal conduct. Dervic et al., (2011) found that the impact of religious affiliation on suicidal behaviour in bipolar disorder patients was moderated by moral or religious resistance to suicide.

Religion frequently has a favourable effect on suicidality in schizophrenic patients, according to Gearing et al. (2011) (e.g., increased coping mechanisms, instilled hope, purpose, and meaning in life, increased social integration, lessened psychotic and general symptoms, reduced substance use and risk of suicide attempts, fostered adherence to psychological treatment, etc). Similar findings were made by Koenig (2009), who discovered that while religion can be a potent source of solace, hope, and purpose, it can also get deeply entwined with psychotic diseases, making it impossible to tell if it is a benefit or a drawback. In a different review, Grover et al., (2014) discovered that religion influences treatment compliance and is a useful coping mechanism for people with

schizophrenia (Grover et al., 2014). Negative religious coping, or spiritual struggle, was found to be considerably more commonly and strongly linked with suicidal ideation among individuals with psychotic spectrum disorders than positive religious coping (Rosmarin et al. 2013).

According to research, religion may play a role in suicide among cancer patients. According to one study, cancer patients who did not practice any religion were more likely to commit suicide (Shim and Park 2012). These findings emphasize the need for more thorough approaches to cancer patients' somatic and psychological needs in suicide prevention programmes, as well as for strict surveillance of these variables. Another research found that religious practices and views were associated with reduced suicidal and depressive symptoms in cancer patients (Shaheen et al., 2016).

In Southeast Asia, the members consist of ten different countries. Uniquely, within the same region, these member countries have different majority religions embraced by the people of that particular country. With these differences, we can observe whether religion itself, as a whole, protects towards suicide ideation. Some of the countries in Southeast Asia comprise a majority of Buddhists, Islam, and Christians. If we say that religious affiliation alone provides protection towards suicide ideation, there will be no significant difference in the rate of suicide ideation within a sample study of individuals with religious affiliation, regardless of what religion they embrace. However, according to the studies observed, religious affiliation does not always provide protection towards suicide ideation. Non-Christian religions had higher than normal rates of suicidal ideation in a large survey of US Air Force members (n=52,780) (Snarr et al., 2010). Suicidal ideation rates were greater among Hindus than Christians in Malaysia (n=20,552) and higher

among Christians than Buddhists in Taiwan (n=4,000) (Maniam et al., 2013). This study demonstrates how different affiliations have an impact on suicide behaviour. According to findings from earlier studies, individuals who identify as religious are less likely to engage in suicide behaviour and ideation than those who do not.

Despite the fact that the results indicate that non-affiliated groups are more at risk than attached groups, these studies do not provide a definitive solution to the topic of the relationship between religion and suicide. Additionally, the majority or minority status of a particular religious affiliation is not taken into account in the studies, which is a crucial factor because people from minority groups may experience less support and a greater sense of exclusion from popular culture.

Religious affiliation provides a societal support towards the religion member. The support provided by the society is very much important in playing a significant role in handling depression or difficulties experienced by individuals. Religious affiliation is very dynamic from one religion to the other. Therefore, such support in the religious system also varies in many ways, thus resulting in a different outcome when one looks into the relationship between religious affiliation and suicide rate.

The notion that suicides rates vary by religious affiliation is attributed to Emile Durkheim, who noted that Protestant states in Western Europe had greater suicide rates than Catholic states in 1897. He explained this finding by saying that Protestantism "is a less strongly integrated church than the Catholic church" (Durkheim, 1897). According to Emile Durkheim's research, the way a person practices their religion as a member of society or in a social setting may have an impact on the outcome of a suicide attempt. A person who

is at risk of suicide will find support and a feeling of community through their integration with the church. Less involvement with the church may also isolate someone at risk from society, raising their suicide risk.

Interestingly, even religious communities do not seem to be able to provide solid protection towards suicide. This is because religious affiliation is not capable of offering protection to individuals with mental illness or providing the same protection between sick and mentally ill individuals. Recent statistics on suicide, gathered from proxy interviews and post-mortem record inspections, reveal intriguing insights. Using data from the census (3.7 million adults) and death certificates, Spoerri et al., (2010) discovered that the crude suicide rate in Switzerland was highest among those without a religious affiliation (39.0 per 100,000), followed by Protestants (28.5 per 100,000) and Catholics (19.7 per 100,000). The protective effect of Catholicism was greater in older people compared to Protestants, and the risk associated with being unattached became stronger in senior people, according to a follow-up study that took into account age (Spoerri et al., 2010). Additionally, having a cancer diagnosis had a stronger protective effect than having a mental disease (any ICD-10 F code), which had a lesser protective effect (Panczak et al., 2013). The results raise questions about whether religious societies treat people with mental illness or cancer differently, whether people with mental illness have a harder time assimilating into religious communities, and whether mental illness amplifies the benefits of protective variables.

The concept of religion in death varies from one belief system to another. In Abrahamic religion, the idea involves an afterlife after death, while in Buddhism, there is a concept of reincarnation after death. While some studies find that religious affiliation provides

protection against suicide, Chinese scholars discovered the opposite pattern. When they compared 392 suicides with 416 controls, they found that there was a greater probability of religious association in suicides (29.27%) compared to controls (16.99%, multivariable OR 2.906, CI 1.661-5.083) (Jia and Zhang, 2012; Zhang, Wieczorek and Tu, 2011). Chinese religious adherents (atheists) are a minority in China, which disadvantages them economically and numerically and causes tension in their interactions with the majority society. Three reasons are put forth by the authors: Chinese religion places a greater focus on solitary devotion, providing followers with less social support; Buddhist notions of rebirth may, in some instances, serve as a deterrent to suicide; and Chinese religion is a minority practise in China.

### 2.3 Research Gaps

As this study navigates through the expansive landscape of existing literature, it is evident that while significant strides have been made in understanding the interactions between suicide mortality, unemployment, health, and religion globally. However, there exists a distinct void within the specific context of Southeast Asia. This chapter endeavours to highlight and address the research gap, acknowledging the limitations of current scholarship and pinpointing the areas where further exploration is imperative.

The literature review unveils a paucity of studies that comprehensively investigate the peculiarities of suicide dynamics in Southeast Asia. While global perspectives provide valuable insights, the intricate interplay of cultural, economic, and religious factors within this region remains largely unexplored. By focusing on Southeast Asia, this research aims to bridge the gap in understanding the nuanced nature of suicide mortality within diverse cultural, economic, and religious contexts.

Despite the well-established link between unemployment and suicide, a research void persists when it comes to unravelling the unique challenges posed by joblessness in Southeast Asia. The region's economic disparities, coupled with distinct cultural attitudes towards employment, demand a dedicated exploration. This study aims to fill the research gap by delving into the socio-economic intricacies that amplify the impact of unemployment on suicide vulnerability within the Southeast Asian context.

While literature globally acknowledges the role of health-related factors in suicide, a critical examination reveals a dearth of studies specifically contextualized within the healthcare landscape of Southeast Asia. Mental health stigma, access to services, and cultural perceptions of well-being form a complex tapestry that demands closer scrutiny. This research endeavours to contribute to the existing body of knowledge by shedding light on the unique health determinants that influence suicide trends in Southeast Asia.

The relationship between religion and suicide is a topic that has garnered attention globally; however, the nuances within the diverse religious landscape of Southeast Asia have been overlooked. With a myriad of belief systems shaping the lives of individuals, this research seeks to explore the uncharted territories, examining how religious beliefs act as protective factors or contribute to vulnerability within the regional context.

In addressing these research gaps, this study aspires to not only deepen our understanding of the complex interplay of factors influencing suicide mortality in Southeast Asia but also to pave the way for targeted interventions and policies that are attuned to the region's

unique socio-cultural dynamics. By unveiling the unexplored frontiers, this research endeavours to contribute meaningfully to the existing body of knowledge, fostering a more comprehensive understanding of suicide within the Southeast Asian context.

## 2.4 Theoretical Framework

Having synthesized the relevant literature, we transition to the development of a theoretical framework that will guide our analysis. By drawing on established theories and models, we aim to construct a lens through which we can analyse and interpret the complex interplay of factors contributing to suicide mortality in Southeast Asia.

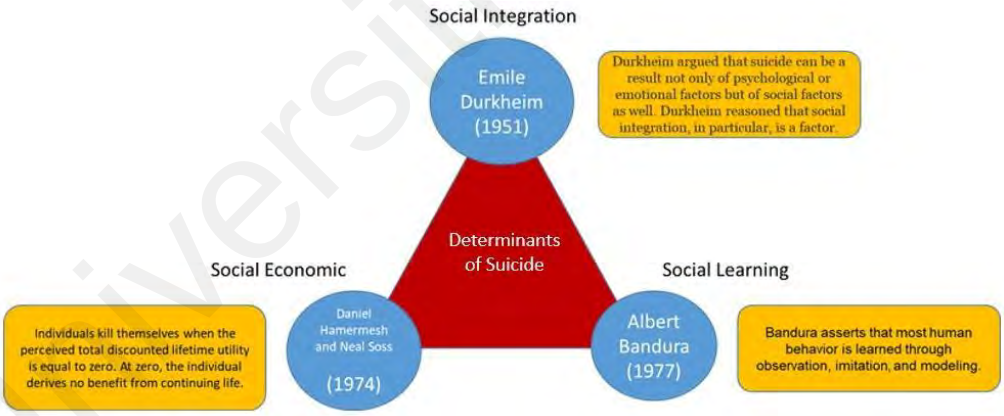


**Figure 2.3: Theoretical framework**

Emile Durkheim's seminal work on suicide challenges the conventional understanding of self-destructive tendencies by emphasizing the pivotal role of social integration. Durkheim argued that suicide cannot be solely attributed to individual psychological or emotional factors; rather, it is profoundly influenced by the individual's connection to the broader social fabric. Social integration, encompassing the degree of attachment and

involvement in social structures, emerges as a critical determinant. This theory posits that individuals with weaker social ties are more susceptible to suicidal tendencies, highlighting the profound impact of societal cohesion on mental well-being.

Building upon the economic perspective, Hamermesh and Soss introduce the concept of perceived total discounted lifetime utility as a crucial determinant of suicide. According to this theory, individuals evaluate their lives in terms of utility, considering the benefits derived from continued existence against the perceived costs. When the perceived utility reaches zero, the individual no longer derives any benefit from life, leading to a state of despair that may end in suicide. This economic lens provides a unique angle for understanding the complex interplay between individual well-being and societal factors.

Albert Bandura's social learning theory broadens the scope by asserting that most human behaviour, including the inclination towards suicide, is acquired through observation, imitation, and modelling. In this context, suicidal tendencies are not only influenced by personal experiences but are also shaped by the behaviours and actions of others in the social environment. Bandura's theory introduces a social cognitive dimension, emphasizing the role of interpersonal dynamics and the transmission of behaviours within a community. This perspective prompts an exploration of how social learning contributes to the emergence and diffusion of suicidal tendencies.

This theoretical framework integrates diverse perspectives, recognizing that suicide is a multifaceted phenomenon shaped by intricate interactions between social integration, economic considerations, and social learning processes. By synthesizing Durkheim's emphasis on social ties, Hamermesh and Soss's economic evaluation, and Bandura's

social learning principles, this framework provides a comprehensive lens for understanding the determinants of suicide. The interplay of these theories offers a nuanced exploration, shedding light on the complex web of factors that contribute to the vulnerability of individuals to suicidal tendencies.

This synthesized framework serves as the guiding lens for the empirical investigation, allowing for a holistic analysis that considers the intertwined nature of social, economic, and cognitive factors in the context of suicide within Southeast Asia.

## 2.5 Conceptual Framework

Concluding this chapter, we present a conceptual framework that visually maps the interconnections between suicide mortality, unemployment, health, urbanisation and religion. This framework serves as a roadmap for our subsequent empirical analysis, providing a structured approach to unravelling the intricate relationships within the Southeast Asian context.

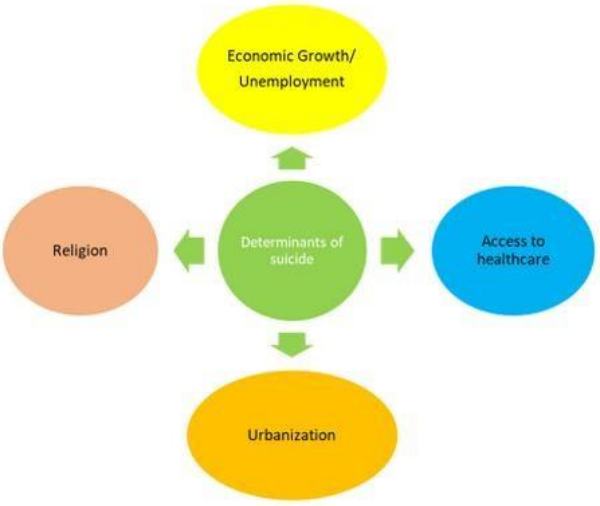


**Figure 2.4 : Conceptual framework**

The conceptual framework for this study aims to explore the determinants of suicide within the unique context of Southeast Asia. Drawing on theoretical perspectives from Hamermesh and Soss, Durkheim, and Bandura, this framework integrates four key determinants: unemployment, access to healthcare, urbanisation, and religion.

Unemployment, considered through the lens of Hamermesh and Soss's utility theory, plays a crucial role in shaping an individual's perception of lifetime utility. Economic despair associated with joblessness may push individuals toward a point where the perceived benefits of life are outweighed by the costs. Access to healthcare is aligned with Durkheim's social integration theory, limited access to healthcare contributes to feelings of isolation. Individuals facing health challenges without sufficient support may struggle to integrate into social structures, potentially heightening vulnerability to suicidal tendencies. Building on Durkheim's social integration theory, urbanisation introduces complexities in social ties. Rapid urbanisation may disrupt traditional community structures, affecting the degree of social integration. The potential isolation in urban settings may influence the prevalence of suicidal tendencies. Integrated with Bandura's social learning theory, religion is a determinant that significantly shapes behaviour. Religious beliefs may act as a protective factor, providing individuals with a sense of purpose and support. Changes in religious practices or beliefs may contribute to variations in suicidal tendencies through social learning processes.

There are also interconnections between the determinants of suicide within the conceptual framework. Unemployment, influencing economic despair as per the utility theory, has broader implications for social integration. Economic despair can impact an individual's ability to maintain strong ties within the community, potentially weakening the social

fabric. Limited access to healthcare, linked to social integration, can act as a barrier to effective integration. Individuals facing health challenges may experience heightened social isolation, influencing their mental well-being and susceptibility to suicidal tendencies. Rapid urbanisation, a determinant related to social integration, may disrupt traditional community structures. This disruption could affect the depth of social ties, potentially contributing to an increased susceptibility to suicide. Religion, as a determinant, influences social learning processes according to Bandura's theory. Strong religious beliefs may act as a protective factor, shaping behaviour and providing a support system that mitigates the impact of other determinants.

This conceptual framework integrates the identified determinants within the theoretical underpinnings of utility theory, social integration theory, and social learning theory. By exploring the interconnections between unemployment, access to healthcare, urbanisation, and religion, this framework aims to unravel the complex web of factors influencing suicide in the context of Southeast Asia. The subsequent empirical analysis will provide insights into the nuanced relationships and contribute to a holistic understanding of the determinants of suicide within the region.

## 2.8 Summary

In the journey through this pivotal chapter, an exploration of the multifaceted landscape surrounding suicide in Southeast Asia is made. The comprehensive literature review provided a foundation to understand, revealing global and regional trends while exposing critical gaps that demanded attention. Scholars such as Emile Durkheim, Daniel

Hamermesh and Neal Soss, and Albert Bandura guided us through diverse theoretical perspectives, each contributing unique lenses to the complex phenomenon of suicide.

Durkheim's social integration theory underscored the significance of communal bonds in shaping susceptibility to suicide. Hamermesh and Soss expanded our comprehension by introducing economic dimensions, emphasizing how unemployment can influence perceived lifetime utility. Bandura's social learning theory enriched our framework by highlighting the role of observational learning and the potential protective influence of religious beliefs.

Building upon these theoretical foundations, our conceptual framework for this study embraced four key determinants: unemployment, access to healthcare, urbanisation, and religion. This framework, intricately woven with insights from Durkheim, Hamermesh and Soss, and Bandura, seeks to unravel the nuanced interconnections among these determinants. By doing so, we aim to provide a holistic understanding of the factors contributing to suicide within the distinctive socio-cultural context of Southeast Asia.

Unemployment, as a determinant, not only affects economic dimensions but also intertwines with social integration, influencing the fabric of community ties. Access to healthcare, linked to social integration, becomes a crucial factor, acting as both a consequence and contributor to vulnerability. Rapid urbanisation introduces complexity, altering the dynamics of social ties and impacting susceptibility to suicide. Religion, grounded in Bandura's theory, emerges as a potential protective factor, shaping behaviours and mitigating the impact of other determinants.

# CHAPTER 3: BACKGROUND TO SUICIDE

## 3.1 Introduction

In delving into the exploration of suicide within the intricate tapestry of Southeast Asia, Chapter 3 serves as the crucial backdrop that contextualizes the region's unique socio-cultural, economic, and healthcare landscapes. Understanding the historical, demographic, and contextual dimensions is imperative for unravelling the complexities associated with suicidal tendencies in this diverse region. This chapter aims to provide a comprehensive background, offering insights into the historical evolution, demographic nuances, and contextual factors that set the stage for our empirical investigation into the determinants of suicide.

As we navigate through the historical currents that have shaped the sociocultural fabric of Southeast Asia, we recognize the region's dynamic evolution and the diverse trajectories that each country has taken. Demographic considerations, including population dynamics and urbanisation trends, lay the groundwork for understanding the contemporary landscape. Additionally, an exploration of healthcare infrastructure and accessibility becomes pivotal, recognizing the disparities that may influence individuals' experiences and vulnerabilities.

By delving into the background of Southeast Asia, this chapter seeks to create a rich contextual foundation for the subsequent empirical analysis. The interplay of historical legacies, demographic shifts, and contextual factors will serve as the backdrop against which we unravel the determinants of suicide, contributing to a nuanced and holistic understanding of this critical issue in the region.

### 3.2 The Background of Suicidal Behaviour

The question of suicide in human history is hazy. At this time, it is impossible to say with any degree of certainty when the first suicide took place, what the driving forces behind it were, or when the idea of suicide was originally created. The cognitive revolution in humans, according to Professor Yuval Noah Harari, started around 70,000 years ago when language and cognitive abilities greatly improved, allowing for abstract ideas and the ability to plan. Contrary to earlier ancestors who thought that life ought to be lived until death, being capable to envision alternatives enabled people to decide between purposefully going on their lives or ending them.

Over the centuries, a person's decision to try suicide could have been motivated by a wide range of causes, including the desire to avoid being captured by a hostile enemy. The Jewish people's decision to kill themselves at Masada is an illustration of how liberty and freedom affected the choice to commit suicide rather than be subjected to slavery. Secondly, choosing suicide as a means of ending pain and suffering because of a persistent injury or sickness. The issue of quality of life becomes even more crucial due to the expansion of life-extension alternatives brought about by medical research. Experts in mental health and other medical fields are anticipated to have a role in resolving the debates around physician-assisted suicide and euthanasia.

Suicide is also linked to shame for failing to defend one's family, culture, or nation. Examples include Seppuku, also known as *harakiri*, or "cutting the belly," which is frequently referred to as an "honour suicide," and suicide in Ancient Greece following a military defeat. The third option is suicide for a good reason, like that of suicide bombers

and *kamikaze* pilots. Such suicides may share similar mental processes with euthanasia, suicides committed for honour, and suicides motivated by depression. Finally, the type of suicide that mental health practitioners encounter and try to cure the most is suicide to end extreme emotional distress.

It is impossible to truly comprehend what individuals thought, despite studying archaeology and human civilizations helping us understand some aspects of what took place. The Sumerian writings, which date from only around 4000 BC, first gave us a chance to delve into human thought. The suicide narrative is comparable. The earliest note ever regarded as a suicide note was written in Egypt around 2040 BC. Ancient Greece is where the topic of suicide received some of the earliest recorded attention in the western world, where it was approached more from a society or state viewpoint than an individual one. Aristotle saw it as a loss to society, although Plato saw it as a bad behaviour, save in some instances. Sometimes, forcing someone to commit suicide as with hemlock for Socrates or encouraging it as with *sati* (suttee) in ancient Hindu culture was done in the sake of honour or a good cause.

Suicide was conceptualized as an act, with little distinction made between "imposed" and "volitional" suicide. Suicide first entered religious discourse in Europe during the fifth century, when St. Augustine condemned it as wicked. Suicide developed a taboo status, crossing over from the religious to the cultural sphere and putting both the act and the perpetrator at risk of public condemnation. These historical conclusions serve as the foundation for the underreporting of suicide that persists even in modern culture.

The concept of "sin" as the cause and effect of suicide became less rigid as society moved toward more intellectual freedom, allowing for more research into the act of suicide. The

idea that suicide is a social issue with societal integration as the suicide's main theme was put out by French sociologist Emile Durkheim. He believed that a person's over identification, under identification, or social isolation influenced their likelihood of suicide. These advancements paved the way for the study of suicide from the viewpoint of external effects on an individual. Suicide has been linked to several theories, including those that link industrialisation, the influx of women into the labour, and social status compatibility. According to a study by Morris and Crooks, there is a strong correlation between the steep rise in suicide among Canadian Inuit Indians and their exposure to the profound societal and cultural changes brought on by swift and intense colonisation and its lasting effects. It has been demonstrated that a lack of social integration strongly correlates with suicide, regardless of the existence of psychiatric condition. According to some studies, economic factors, particularly unemployment, can have a long-term impact on suicide rates in many societies.

Since the 17th century, steadily expanding knowledge and science have connected the medical area with suicide. In recent decades, the connection between mental illness and suicide has gained prominence. A stress-diathesis model has been proposed because of advancements in our understanding of neurobiology and behaviour. In this model, suicidal conduct is influenced by both genetic predisposition and stress exposure. Risk factors are divided into trait-dependent and state-dependent categories. Increasing efforts have been made to comprehend and prevent suicide because of all these discoveries.

Suicide is a term used to describe the act of committing suicide (Turecki, 2016). Although there are many different and complex reasons why people try suicide, they tend to do so because they are experiencing severe physical or mental anguish that they cannot bear.

There are numerous possible causes for someone to think about killing themselves. It frequently happens due to ongoing struggles with ideas, feelings, or events that the person thinks they can no longer handle. A person who is thinking about ending their life may experience a variety of emotions, including sadness, grief, intense guilt, worthlessness, rage, or the desire to seek revenge. They may also feel burdensome to other people, unworthy of life, trapped physically or emotionally, and in excruciating pain. Numerous elements can result in a person feeling this way. Events in life such as losing someone you love, bullying, prejudice, or abuse, terminating a relationship, or going through a major shift in conditions could trigger it (divorce, unemployment, retirement, homelessness), being diagnosed with a serious illness, having financial issues, being incarcerated, having an unwanted pregnancy or losing a pregnancy, surviving traumatic events, and many others. Though not everyone who experiences these situations may consider suicide, some life events do not always lead to suicide. Different people react differently to moments of difficulty.

Suicide poses a significant challenge to global public health, with 703 000 people worldwide committing suicide each year. It stands as a leading cause of death, surpassing the combines fatalities from homicide, conflict, HIV/AIDS, breast cancer, and malaria. In 2019 alone, suicide claimed over 1.3% of lives globally (WHO, 2019). Generally, males exhibit higher suicide attempt rates at than females, ranging from 1.5 times in developing nations to 3.5 times in developed nations. It i is predicted that 1.5 million individuals will succumb to suicide by the year 2020. In 2015, there were 10.7 sui2cide deaths per 100,000 persons, equating to approximate one fatality every 20 seconds. Globally, suicide ranks as the fifteenth leading cause of mortality, constituting 1.4% of all deaths (WHO, 2014). Notably, suicide disproportionately affects males, with the male-

to-female ratio being higher in wealthy countries (4 to 1 in Europe and the Americas, 1.5 to 1 in the Eastern Mediterranean and Western Pacific regions) (Hawton, 2009).

These suicide statistics likely underestimate the actual number of cases due to the challenging process of suicide registration, often involving legal authorities. Deaths by suicide may go unrecognized or be mislabelled as accidents or other causes. The complex and taboo nature of suicide also contributes to underreporting (De Leo, 2015). Suicide attempts, referred to as non-fatal suicidal conduct, are estimated to occur 10–20 times more frequently than completed suicides. Records indicate three suicide attempts per 1,000 people each year, with approximately 2.5% of individuals attempting suicide at least once in their lifetime (Alonso et al, 2010).

Regions exhibit significant variations in suicide rates, with 80% of suicides occurring in countries with low to medium incomes (WHO, 2018). In Southeast Asia, the suicide death rate stands at 15.6 per 100,000 people, while in the Eastern Mediterranean, it is only 5.6 per 100,000. Compared to the global average of 10.7 per 100,000 people, Europe reports a suicide death rate of 14.1 per 100,000 people. European nations show considerable differences, ranging from 3.3 per 100,000 in Azerbaijan to 32.7 per 100,000 in Lithuania. Western and Northern Europe, aligning closely with the European norm, have the lowest suicide mortality rates, followed by the Mediterranean region. Eastern and Central Europe exhibit the highest rates (WHO, 2017).

Suicide risk tends to be higher in individuals over 70 years old, but in certain countries, those between 15 and 30 are particularly vulnerable (WHO, 2014). Globally, suicide ranks among the leading causes of mortality in late childhood and adolescence, with older people being more prone to suicide than their younger counterparts This results in the loss

of many young lives, coupled with profound psychological and detrimental socioeconomic effects. Although suicide affects people of all ages, a clear upward trend is observed in suicide rates worldwide as individuals age. The highest rates are found among the oldest adults; those 80 and older (60.1 per 100,000 men and 27.8 per 100,000 women) and those 70 to 79 (42.2 and 18.7, respectively), while those of 60 to 69 years old (28.2 and 12.4 respectively). Rates for individuals aged 15 to 29 are significantly lower, with 15.3 and 11.2 per 100,000 for boys and girls, respectively, and 0.9 and 1.0 per 100,000 for those between the aged 5 and 14. In Europe, rates decreased from 53.2 and 14.0 per 100,000 men and women aged 80+ to 19.9 and 4.2 per 100,000 for those aged 15 to 29, and 1.0 and 0.4 for those aged 5 to 14, respectively (Varnik, 2012). Suicide ranks as the second leading cause of death globally for individuals between the ages of 15 and 29, despite the lower rates in younger age groups (WHO, 2018).

Suicide, is more prevalent in Europe where rates of adolescent suicide are declining, is the second most common cause of mortality for people aged 10 to 19. It is the leading cause of death for all girls between the ages of 15 and 19 in this group. (6.15 per 100,000). Approximately 24,000 deaths annually, roughly one-fifth of all deaths among older adolescents and young adults in Europe (15-29 years), are attributed to suicide (WHO, 2017). In contrast, the top ten most common causes of death in older age groups do not even include suicide. These figures, along with the observation that overall numbers have not consistently and significantly decreased over recent decades, raise concerns among scientists and decision-makers. The public is increasingly aware of the severe negative effects of youth suicide, encompassing not only the sudden loss of many young lives but also distressing psychosocial consequences and harmful socioeconomic effects on a large scale. Public mental health necessitates focused attention on effective preventive measures for youth suicide.

Risk factors for substance use disorders include alcohol use disorder, alcohol dependence, and the use of and withdrawal from benzodiazepines. Physical illnesses like chronic fatigue syndrome share characteristics with mental illnesses like melancholy, bipolar disorder, autistic spectrum disorders, schizophrenia, personality disorders, anxiety disorders, and nihilistic beliefs (Hawton and Van Heeringen, 2009). Some suicides are impulsive acts brought on by stress, such as struggles with money or school, issues in personal relationships, such as breakups or the loss of loved ones, or bullying or harassment.

Existential concerns of a wide-ranging nature, including religion, honour, and the meaning of life have influenced people's opinions on suicide (Tomer, 2013). Due to the sanctity of life, Abrahamic religions traditionally view suicide as a sin against God. Seppuku, a form of suicide practiced during the time of the Japanese samurai, was revered as a way to atone for mistakes or to express dissent (Colt, 1992). According to Sati, a custom that the British forbade, an Indian widow was expected to commit suicide on her husband's funeral pyre, either voluntarily or as a result of pressure from her family and community. While previously illegal, most Western countries no longer prohibit suicide and attempted suicide (White, 2010). It remains illegal in certain countries (Lester, 2006). Suicide has rarely been used as a form of dissent in the 20th and 21st centuries, and kamikaze and suicide bombing have been employed as military or terrorist methods (Aggarwal, 2009).

## 3.3 Determinants of Suicide

Unemployment, as a determinant of suicide, is intricately linked to economic factors and individual well-being. Job loss or the inability to secure employment can lead to financial strain, loss of self-esteem, and a sense of hopelessness. According to Hamermesh and Soss's utility theory, individuals facing unemployment may perceive diminished lifetime utility, as the economic despair associated with joblessness contributes to a state where the perceived benefits of life are outweighed by the costs. Unemployment can also impact social integration, weakening community ties and exacerbating feelings of isolation.

Limited access to healthcare is a determinant that influences an individual's vulnerability to suicide, particularly within the framework of Durkheim's social integration theory. Inadequate healthcare access can contribute to feelings of isolation and hinder an individual's ability to integrate into social structures. The absence of proper mental health services, in particular, may exacerbate psychological distress, increasing the risk of suicidal tendencies. Additionally, the stigma surrounding mental health issues may further impede individuals from seeking help.

Urbanisation, a determinant related to social integration, brings forth a myriad of factors that can impact an individual's susceptibility to suicide. Rapid urbanisation often disrupts traditional community structures and social ties. The anonymity and fast-paced nature of urban life can contribute to feelings of isolation, alienation, and stress, influencing mental health outcomes. Urban areas may also present distinct challenges in terms of access to mental health services and coping mechanisms.

Religion, as a determinant, plays a multifaceted role in shaping an individual's behaviours and coping mechanisms. Aligned with Bandura's social learning theory, religious beliefs can act as a protective factor by providing a sense of purpose, community support, and moral guidance. On the contrary, shifts in religious practices or beliefs may impact an individual's mental well-being. Struggles with faith, religious discrimination, or changes in religious structures within a community can contribute to the emergence of suicidal tendencies.

The determinants are not isolated entities; they are intricately interconnected. Unemployment may lead to economic despair, influencing both social integration and mental well-being. Limited access to healthcare can compound the challenges associated with unemployment, exacerbating psychological distress. Urbanisation introduces additional stressors, potentially amplifying the impact of unemployment and healthcare disparities. Religion, acting as a protective or exacerbating factor, is woven into the fabric of each determinant, shaping individuals' responses to the challenges they face.

### 3.4 Urbanisation and Suicide

The urbanisation of a place can be measured by the density of population over an area. An urban region is a human settlement with substantial facilities and a dense populace. Urban regions are created through urbanisation, and depending on their urban morphology, they can be categorised as cities, villages, conurbations, or neighbourhoods. According to the UN World Urbanisation Prospects report from 2017, 4.1 billion people reside in urban areas worldwide. In other terms, cities are home to 55% of the world's population.

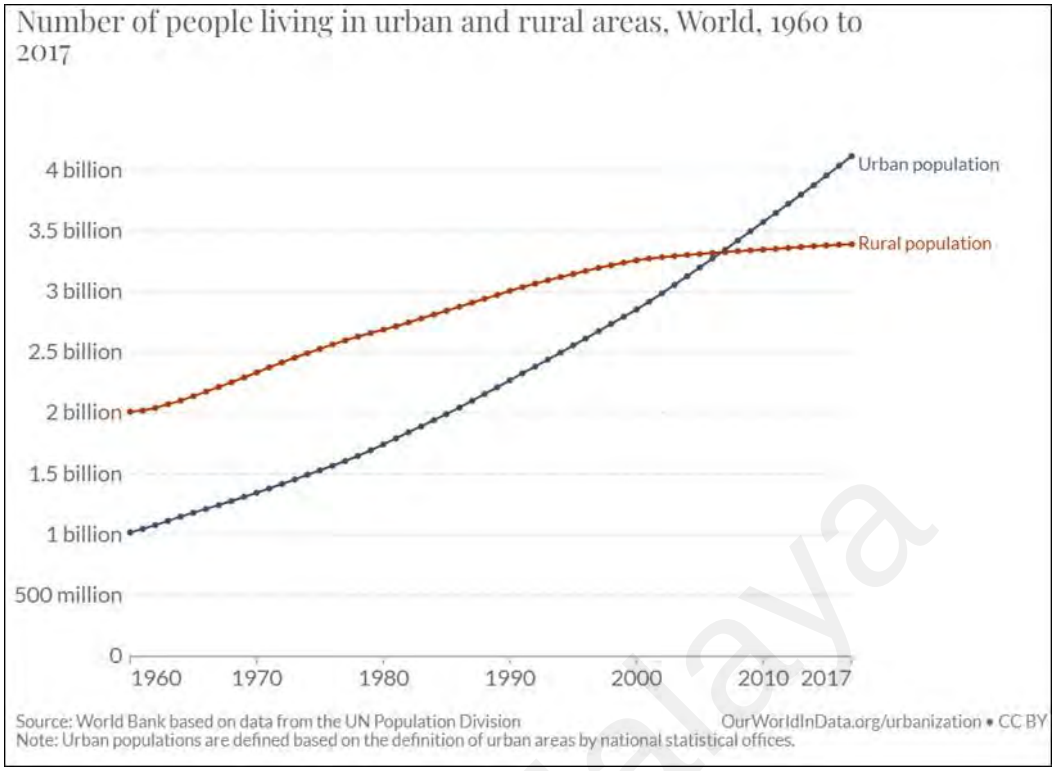


**Figure 3.1: Number of people living in urban and rural areas, world, 1960-2017**
Source: World Bank

In the majority of high-income nations, including Western Europe, the Americas, Australia, Japan, and the Middle East, more than 80% of the populace resides in urban areas. In most upper-middle-class countries, including those in Eastern Europe, East Asia, North and Southern Africa, and South America, between 50% and 80% of the people reside in metropolitan areas. The bulk of people continue to reside in rural areas in many low- to lower-middle-income nations.

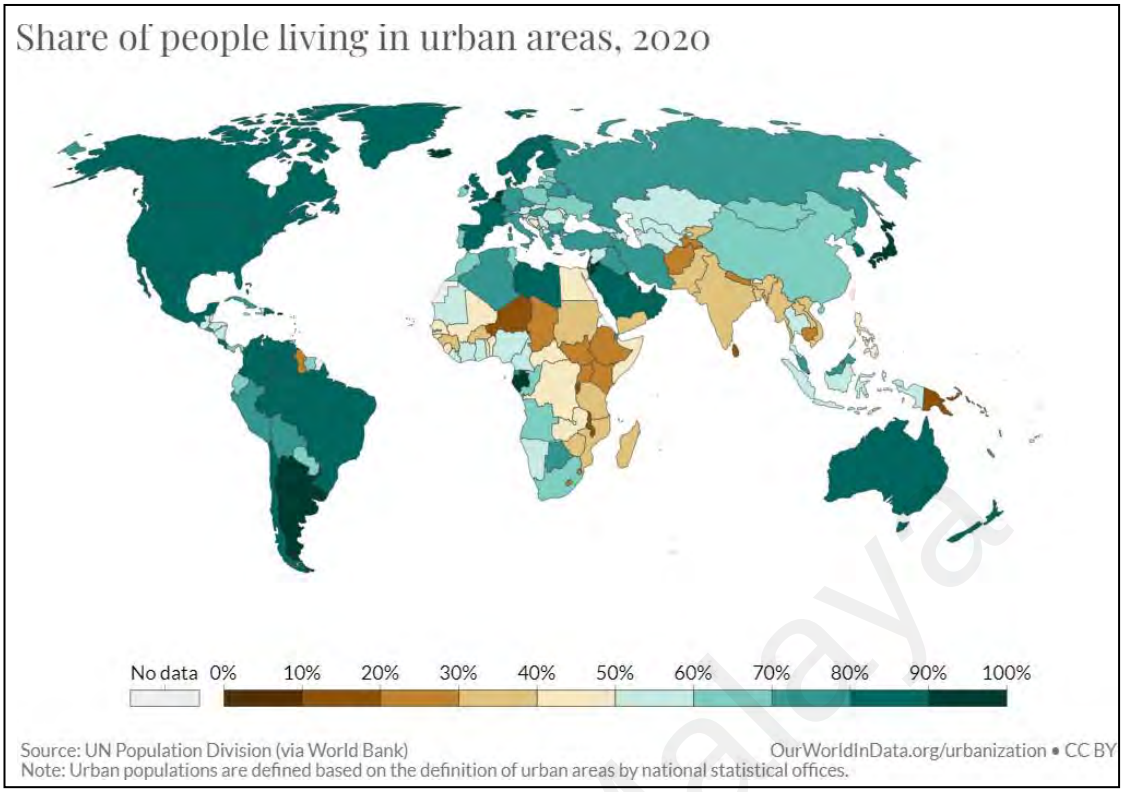


**Figure 3.2: Share of people living in urban areas, 2020**

Source: UN Population Division

Due to the substantial increase in the percentage of the population residing in cities, the world is rapidly urbanising. The majority of people on Earth will reside in cities by the end of 2008. Demographers, sociologists, scientists, and politicians are all paying attention to this change in perspective in population patterns. The advantages and drawbacks of urbanisation are distinctive. Although urbanisation is the main driver of the economics of most of the world's countries, there is legitimate cause for grave concern about its effects on mental health.

It is necessary to investigate how urbanisation in South Asian nations is affecting mental health. These nations are especially vulnerable because to their growing economies and a sizable segment of the population that continues to live in poverty. They also tend to have a heavier burden of diseases and a primary healthcare delivery system that is already

in poor shape. Urbanisation is linked to a wide variety of diseases and deviations, including psychoses, depression, sociopathy, drug and alcohol misuse, delinquency, vandalism, family dissolution, and estrangement. Because of the variety of issues, it would be difficult and undesirable to classify them under a single classification. The entire population is being impacted by urbanisation, but notably the most vulnerable members of society: the elderly, kids and teenagers, and women.

Rapid urbanisation has also resulted in the emergence of a "fringe population," the majority of whom live in poverty. The connection between mental health and poverty is intricate and multifaceted. Changes in cultural dynamics have a significant impact on urban populations, which might result in specific psychiatric issues including depression, alcoholism, and delinquency. For the proper growth of the developing economies of the South Asian region, prudent resource management, a balanced approach to development, and solid public policy are encouraged.

Urbanisation is taking place on a scale that has never been seen before and is defined as the relative growth of the urban population as a percentage of the overall population (Harpham T. et al., 1988). Humanity is coming near to the day when for the first time more people will reside in cities than in rural areas, according to the "State of the World Population 2007" report released by the United Nations Population Fund (UNFPA) in June 2007 (SWP, 2007). Demographers' predictions for 2008 indicate that this major event will be the most important pattern in human development. These new urban inhabitants will be predominately poor and live in emerging countries (such as those in the South Asian region). The constraints that result from urbanisation will be particularly challenging for the nations that are least prepared to manage them. Because they offer

greater access to jobs, education, healthcare, and cultural possibilities, cities are alluring. Cities also contribute significantly more than other regions to national budgets.

However, unchecked, fast urban development is frequently associated with poverty, environmental deterioration, and population demands that outstrip available resources. People's health is in peril due to these conditions. Few trustworthy urban health data are available on a worldwide scale. Disaggregated intra-urban health statistics, or information for different areas of a metropolis, are even less prevalent.

Urban health risks and risks connected to them include unsafe living conditions, congestion, polluted air, insufficient sanitation and waste materials removal services, diseases transmitted by vectors, waste from industry, raised automobile traffic, anxiety caused on by poverty and joblessness, among other factors. The issues raised by urbanisation are being addressed by regional, national, and global organisations. The difficulties that urbanisation has brought about for mental health and wellbeing are unique. Cities are becoming more ethnically diverse, largely due to faster speeds and lower transportation and communication costs. As a result, cultural aspects now dominate our knowledge of urban mental health.

It is frequently questioned whether human capacity to live in a secure environment with other people's assistance and care has expanded along with the size and density of cities. Some believe that because of the density of urban life, personal identity is being forced to give way to anonymity, apathy, and narrow self-interest. Numerous articles have been written about how urban inhabitants' anxiety, helplessness, and rage are escalating.

Today's cities' diversity encourages greater tolerance, a higher standard of living, and societal stimulus, but it also frequently results in rising social tensions, interethnic competition, and cultural conflicts, all of which undoubtedly have an effect on mental health. Numerous illnesses and abnormalities, such as psychoses, melancholy, sociopathy, addiction to drugs and alcohol, criminal behaviour, acts of vandalism, family breakup, and alienation, are associated with urbanisation. Such detrimental effects frequently lead to inappropriate measures that may culminate in intergroup conflict (Glass, 1972). Additionally, the behaviour restrictions that are applied to or enforced upon urban residents have a negative influence. If conduct is overly repressive, it could lead to learned helplessness and problems associated to stress (Stokols D., 1978). Conflicts, wars, and civil unrest, like what is currently occurring in Pakistan and Myanmar, Afghanistan, and other developing nations, raise the prevalence of mental health issues there (as reflected in increased rates of post-traumatic stress disorder (PTSD), anxiety, and depressive disorders).

Over the past few decades, there has been a sharp surge in migration to urban areas. Most immigrants are from rural areas, and as a result, their attitudes, beliefs, and expectations regarding mental health are frequently extremely different from those they would find in their new country. Those who leave rural areas often endure years of loneliness, a lack of electronic links, poor health, destitution, unemployment, and subpar housing. They must acculturate and adjust to other systems of symbols, meanings, and traditions in addition to a new, demanding metropolitan environment. Numerous urbanisation-related social processes, including rivalry, class tension, accommodation, and integration, have been theorised to be connected to social deviance (Park et al., 1925).

The processes of the family and of civilization are altered by urbanisation. Rapid urbanisation has resulted in a sizable population of elderly people who are left on their own in rural areas while the youth work in cities. Less carers will be available when elderly people get sick because of this. The majority (58%) of people in the globe who are 60 years of age or older were already living in developing nations in 1990. This percentage would have increased to 67% by 2020. This oldest segment of the population would have grown by 200% in developing nations over this 30-year period, compared to 68% in the industrialised world. Unprecedented economic expansion and industrialisation, as well as significant changes in social structure and family structure, will accompany this demographic transition.

The two most significant contributors to disability adjusted life years (DALYs) in this category of neuropsychiatric diseases are dementia and major depression, which account for one-quarter and one-sixth of all DALYs in this group, respectively. In 2001, 60% of dementia patients lived in developing nations, and that number is expected to rise to 71% by 2040. Between 2001 and 2040, the number of people is expected to increase by 100% in developed countries but by more than 300% in India, China, and their allies in South Asia and the Western Pacific.

The healthcare institutions in developing countries often fail to adequately address the needs of senior people. Healthcare services are typically provided in clinics even at the primary care level, requiring elderly individuals to travel to the clinic and wait for treatment. Even if they manage to reach the facility, the assessment and treatment they receive tend to be focused on short-term issues rather than long-term ones. There is a

prevailing belief is that addressing long-term issues may be intractable and beyond the scope of healthcare, while short-term problems are perceived as more curable. In industrialised countries with extensive health and social care systems, the crucial role of families in providing care and their need for support are sometimes overlooked. On the contrary, in developing nations, the family care system is often overstressed, and elderly people become one of the most vulnerable demographics due, in part, to persistent misconceptions about their status in society.

Urban locations, especially those in developing nations where a high number of children and adolescents live in cities, render women and children particularly vulnerable to interpersonal violence. By 2025, six out of ten children are expected to reside in urban areas. Approximately 50% of the urban population in emerging nations is estimated to be under the age of 25 due to rural-urban migration and high childbearing rates. Globally, there are almost 30 million street children, and the majority of whom engage in criminal activities in cities. Children and teenagers in urban settings with low socioeconomic status are often drawn to antisocial behaviour. While it is not exclusive to urban areas, it is particularly prevalent in inner cities where blight, unemployment, drug use, and poverty explosively combine to encourage violent solutions.

Women are especially vulnerable, and they often bear an unfair share of the consequences of urbanisation. In rural settings, women would typically work from home, but the predominantly nuclear structure of cities and the overall economy are pressuring women to leave their homes. Domestic violence is also very common in urban places. Urbanised women in both developed and developing nations are more likely to experience intimate partner violence (Kessler et al., 1995). In all of India, the incidence of mental illnesses

among women was 64.8 per 1000 individuals, according to an epidemiological meta-analysis of 13 studies (Reddy et al., 1998). The prevalence of neuroses, affective illnesses, and organic psychoses was significantly higher in women than in males. In Nepal, where the sex ratio in the health posts was 2.8:1 and in district hospitals was 1.1:1, psychiatric morbidity was higher in women than in males (Wright et al., 1990). A Bangladeshi study found that the male-to-female ratio for mental disorders was 2:1 and the male-to-female ratio for suicide was 3:1. (Ministry of Health and Family Welfare, Bangladesh 1999).

Women in underdeveloped nations bear the responsibilities of being caregivers, educators, mothers, wives, and members of the labour force. They provide the majority of the household's income in 25–33% of cases. These challenges are exacerbated by significant domestic and sexual abuse, hunger, overwork, and gender discrimination. Close relationships and social support, more prevalent in rural society, appear to be deterrents to violence. While the role of women has increased in urban environments, there hasn't been the corresponding growth in social hierarchy. Cultural factors are among the elements contributing to the high rate of mental discomfort documented among working women in South-East Asian nations (Bushan and Sheikh, 2002). This emotional pain often goes unrecognised (Davar, 1999).

Rapid urbanisation has given rise to a "fringe population," the majority of whom live in poverty. The connection between mental health and poverty is intricate and multifaceted. Inadequate access to social and educational tools is considered a form of poverty. According to the social causality theory or the social drift theory, mental and behavioural illnesses are more common in poor and deprived countries (like the majority of the South Asian countries). In underdeveloped nations without established social welfare

organizations, poverty spirals forward. Major depression, substance misuse, and personality disorders are recognised to be more common among people with low socioeconomic position (Figure 3.3).

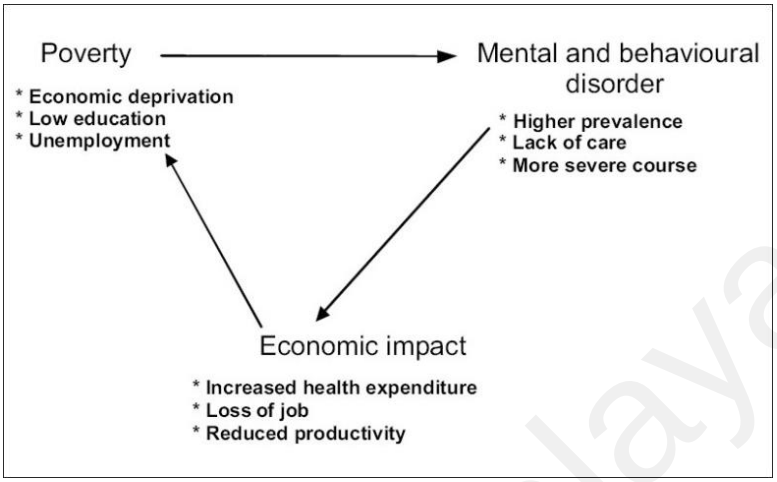


**Figure 3.3: Inter-relation of economic status and mental and behavioural disorders**

Source: The Lancet Psychiatry (2018)

Investigators from the World Health Organization (WHO) utilised a composite diagnostic questionnaire for cross-national analyses of the incidence and its correlation of mental illnesses. They identified a recurring pattern of greater urban than rural disparity in the frequency of mental diseases.

Untreated individuals often find themselves at the lower echelons of society, significantly hindering their chances of reintegrating, primarily due to cultural factors such as attitudes toward people with mental illness. Cultural variables play a substantial role in the connection between social status and both physical and mental health. The increased opportunities for geographic mobility have led to an extraordinary multi-ethnic influx to cities.

The nuanced societal influences on disorders and mental health are bringing about changes in psychiatric practice that are both challenging and beneficial. However, the drawbacks of such multi-ethnic movement may include a lack of understanding of how diseases manifest, culturally unique belief systems, and reluctance to depend on medical systems, all of which could significantly delay proper evaluation and treatment.

Findings from studies on the connection between schizophrenia and urban life are fascinating from a cultural perspective. In the global pilot research for schizophrenia, comparing 1200 patients from nine different countries (Strauss et al., 1974), researchers discovered that schizophrenia patients from poor nations typically had less severe courses and better outcomes than those from industrialised nations. These positive outcomes were associated with vertical movement, extended families, active family involvement in psychiatric services, and the lack of specific community assumptions about individuals with mental disorders. These results highlight the significance of cultural stigma, support networks, and expectations. Patients with schizophrenia in emerging nations appear to benefit greatly from societies that are highly tolerant of mental illness.

Similarly, every sign evaluated in the results of the research on serious mental illnesses in schizophrenic patients (Jablensky et al., 1992) had superior outcomes in emerging countries compared to affluent ones. The observation that 41.6% of the population from the cohort of developed nations and 15.7% of the sample from developing nations both exhibited poor social functioning over the follow-up period was a particularly startling finding. of the extent to which this significant variance can be attributed to regional cultural expectations for performance is yet unknown and needs further investigation. Depression has been associated with long-term difficulties such as unfavourable, crowded

physical environments, high rates of violence and accidents, unstable tenure, and inadequate housing. Major depression is expected to have the highest disease impact in developing countries (Murray and Lopez, 1997).

In Southeast Asia, Singapore, as a high-income country has 100% urban areas, followed by upper-middle income country urban areas such as Brunei (78.25%), Malaysia (77.16%), Indonesia (56.64%) and Thailand (51.43%). Low to lower-middle-income countries' urban areas in the region include the Philippines (47.41%), Vietnam (37.34%), Laos (36.29%), Myanmar (31.14%), and Cambodia (24.23%).

There are a few studies that note the relationship between suicide risk and level of urbanicity. While there are notable exceptions like China, suicide rates are typically higher in urban than rural locations in most nations (Philips et al., 2002). While research from Western nations has shown that urban residents face a higher risk of suicide compared to those living in rural areas (Heikkinen et al., 1994), a comprehensive study involving the entire Danish population revealed that individuals in more urbanised areas indeed have an elevated risk of suicide. However, this association is significantly minimised when considering personal factors such as marital status, financial situation, ethnicity, and mental health status. The extra risk associated with urbanisation is even negated when additional adjustments for mental status are made. Moreover, the impact of urbanisation on suicide risk varies significantly by sex and age.

The study highlighted that males, especially young men, exhibit much lower suicide rates in cities compared to females, particularly women between the ages of 24-35 or over 65. Between 1981 and 1997, the risk of suicide associated with urbanisation remained

relatively steady for women, while it considerably decreased for men-a trend that seemed to strengthen in the latter half of this period.

The findings suggest that urbanisation is linked to a higher risk of suicide, but this association is influenced by various factors such as sex, age, marital status, ethnicity, wealth, and psychiatric state. In recent years, differences between urban and rural suicide rates among men have decreased, and the influences of factors like marital status, ethnicity, wealth, and psychiatric state can account for a significant portion of the higher risk in metropolitan environments.

Health disparities between urban and rural areas may contribute to differences in the frequency of specific mental illnesses, physical conditions, and an individual's exposure to risk factors and psychological stresses associated with the greater density and diversity of city populations. Psychological autopsy research suggests that while rural suicides are more frequently linked to physical problems, urban suicides are more frequently linked to a range of mental illnesses, comorbidity, and stressful life events like separation. Factors such as high vehicular concentrations, pollution, risk behaviours like alcohol and drug abuse, and stressors like neighbourhood interactions and job rivalry occur more often and are often more severe in urbanised areas compared to rural ones.

Several demographic studies have demonstrated a dose-response association between the degree of urbanisation and rates of mental health conditions such as schizophrenia, psychotic illnesses, depression, and admission rates to mental hospitals, although not all studies align on this point. Additionally, data indicates that minorities and those with

lower socioeconomic standing are frequently overrepresented in urban regions potentially contributing to a higher suicide risk experienced by urban dwellers.

### 3.5 Social Isolation

Certain sociological and psychological theories emphasize the significant role of social factors in suicide (Stanley et al., 2016). Émile Durkheim proposed that social cohesion, considered a safeguarding factor, has a negative relationship with suicide (Durkheim, 1897). Thomas E. Joiner's interpersonal theory of suicide suggests that a loss of a sense of belonging is a major risk factor with “thwarted belongingness” being a key concept (Joiner, 2005 ; Van Orden et al., 2010). This theory posits that a lack of social integration, self-reported loneliness, living alone, having fewer acquaintances, family strife, and social disengagement contribute to suicidal thoughts. Suicidal thoughts may be triggered by perceived burdensomeness and a sense of betrayal, or thwarted belongingness. (i.e., the impression of representing a burden for others). According to Joiner, the two mental states that precede suicidal thoughts are "thwarted belongingness" and "perceived burdensomeness," while other risk factors for suicide, such as child maltreatment and psychiatric disorders, are "significantly more distant" in the causation chain (Van Orden et al., 2010). Lethal suicide attempts can be sparked by the concomitant presence of the Acquired Capability for suicide, resulting from repeated exposures to unpleasant and upsetting experiences that reduce the fear of dying and increase physical pain tolerance.

In groundbreaking research, Cohen and Wills (1985) compared two opposing theories that argue social support either directly or indirectly benefits health and well-being (primary or direct-effect model) or protects individuals from stressful life events. They found that both models are accurate. In the first scenario, a person's level of social integration determines their level of social support, but in the second scenario, social resources connected to requirements brought on by stressful events determine their level of social support. Therefore, in the case of suicide, social support may function as both the main direct protective factor and a protective factor in the face of hardship. This suggests that risk factors are more likely to be associated with unfavourable outcomes, such as suicide, in people who lack strong social support.

According to many research (see for example Draper, 2014; Minayo and Cavalcante, 2010; O'Connell et al.; 2004; van Wijngaarden et al.; 2014; Yi and Hwang; 2015), being unmarried, separated, or widowed, along with feeling isolated from others, feeling lonely, isolation, loss of belonging, and a lack of/loss of social support, are all risk factors for death desire and suicidal thoughts and behaviours in older adults (see also Pompili et al., 2007).

According to the HM Government(2018) and Perlman and Peplau(1981), loneliness is the irrational feeling of not having any social contact with others. Early mortality, bodily and emotional illness, impaired cognitive function, and greater use of health services have all been related to it (Dreyer et al., 2018). All ages are affected by loneliness, according to Age UK (2018), and the UK government has designated tackling it as a ministerial duty (HM Government, 2018). While it is well established that living alone increases the

risk of self-harm and suicide, it is unclear at this time whether subjective loneliness in and of itself is the main factor contributing to this risk.

Living alone and loneliness are distinct concepts with overlapping characteristics, although they both suggest relationships and social connections (Smith and Victor, 2019). Living alone differs from cohabitating couples and sharing a residence with individuals who are not partners, such as parents, children, or acquaintances, who might be expected to offer support on an emotional, financial, and functional level (Amato, 2014; van Hedel et al., 2018). But it is clear that single people can socialise outside the house and perhaps even find mental support there. Contrarily, loneliness is the fictitious feeling of a lack of social interaction (Hawkley and Cacioppo, 2010). Support on an emotional level is a related idea. It involves developing confidence, affection, empathy, and compassion within a partnership (Langford et al., 1997) and conveys the idea that someone is cared for, cherished, not abandoned, and has a confidante (Shensa et al., 2020; Yao et al., 2015).

Theories that link loneliness, living situations, and a deficiency of emotional support to suicide can be found in Durkheim's work (Stanley et al., 2016). In particular, the definition of egoistic suicide is described as a lack of social integration brought on by elements such as a person's lack of social ties to peers and family. In contemporary theories like the Interpersonal Theory of Suicide, these concepts have been expanded upon. The idea of "thwarted belongingness" from the Interpersonal Theory of Suicide, which contends that emotional isolation and a lack of support can result in self-destructive behaviours, is one facet of the theory that is particularly pertinent (Stanley et al., 2016; Van Orden et al., 2010). But there isn't much empirical study done in this field (Van Orden et al., 2010). It is methodologically difficult to identify strong risk variables for

suicidal behaviour for a variety of reasons, not the least of which being the rarity of suicide (Klonsky et al., 2016; Stickley and Koyanagi, 2016). The majority of research on loneliness and suicidal behaviour have used self-reported measures of suicidality, which may be prone to reporting errors (Bennardi et al., 2019 ; Beutel et al., 2017; Stickley and Koyanagi, 2016). Loneliness has been studied as a possible contributor to suicide fatalities in a very small number of studies, most of which were case-control studies (Courtin and Knapp, 2017; Holt-Lunstad et al., 2015).

Social isolation increases the chance of mental health issues like melancholy, anxiety, and drug abuse as well as chronic diseases like high blood pressure, heart disease, and diabetes. According to Dr. Maris:

> Loss of essential social supports, increases in hostility and aggression, a corresponding decrease in targets for the aggression other than oneself, as occurs in prison, greater impulsivity as a result of fewer social restraints, and isolation-enhanced depression, sleep disorder, and hopelessness all increase the likelihood of suicide. In survey research in Chicago, Dr. Maris discovered a substantial inverse relationship between population per household and suicide rate. Follow-up research in Chicago found that, on average, the suicide cases had half as many close friends as the natural death controls. Dr. Maris discussed an earlier study that discovered a connection between suicide rates and indicators of little social contact, such as living alone and going through a divorce.
>
> The number of people behind bars increased the severity of suicide cases. Prisoners in the US commit suicide at a rate that is four times higher than that of the general community. Dr. Maris noted that suicide is most common among new arrivals in prison and, to a lesser extent, in jail (58 percent of prison suicides occurring with 48 hours of confinement; 29 percent in the first three hours). The majority of suicide victims (95 to 100 percent) are men who fit the diagnostic criteria for antisocial personality disorder and have anxiety or affective problems (67 percent). They are frequently kept apart from other prisoners. There is little cognitive damage and few people are psychotic. The majority of inmates who commit suicide have histories of beginning and continuing alcohol and other drug misuse. Since hanging or asphyxiation, which can happen in as little as six minutes, are the most popular methods of suicide by people who are imprisoned, the standard fifteen-minute gaps between checks are insufficient (Maris, 2001).

Prisoners are not only population that face a higher risk of suicide due to incarceration; veterans who fail at reintegration into civilian life also face the same high risk of suicide. Veterans' suicide may be a disturbing sign of a failed transition back into normal life. Incarceration is another consequence that has negative effects for the returning warrior and high expenses to society. Wortzel's hypothesis in the study of veterans who are in prison is that they have a higher risk of suicide than both the general veteran population and the entire prison population due to a number of risk factors that could interact to make them more lethal (Wortzel, 2009).

In comparison to the general community, the suicide rate among American veterans is higher. Numerous studies indicate that veterans utilising Veterans Affair (VA) care may be at an elevated risk of suicide. Thompson et al., (2015) searched the VA case registers for 1,075 veterans who passed away in 1998 for causes of death before doing chart checks to identify those patients who had successfully committed suicide. Male veterans have significantly higher suicide rates than the general population—between two and three times higher, according to these experts. They explained the large percentage of mental health patients inside the VA system as the cause of the excess suicides. Prior diagnoses were prevalent in this group of patient deaths and included melancholy (31.6%), psychotic disorder (15.8%), and drug abuse (15.8%). In contrast to nonelderly suicides, which were more likely to have sought mental health treatment and none of the senior suicides had any suggested psychiatric diagnoses in their charts, more than half of nonelderly suicides did.

In a 2004 study, Price et al. examined how drug abuse and post-traumatic stress disorder (PTSD) affected the suicidal behaviour of male Vietnam veterans. According to the study, the cumulative effects of mental comorbidity place patients with these disorders in socially disadvantageous situations that lead to sentiments of hopelessness and, eventually, suicidality. Nine veterans out of the study's total of 943 died by suicide, and all but one of the deaths were white and enlisted in the military freely. Lester(2005) made the important claim that suicides among Vietnam veterans are significantly underreported, probably because they are mistakenly labelled as accidents. According to Price et al., (2004), the two factors that have the biggest impact on the timing of suicidality are serious depression and drug abuse. They provided a description of a vicious circle in which drug abuse exacerbates PTSD and suicidality, and PTSD and suicidality then urge more drug abuse, demonstrating the necessity of identifying and treating PTSD and substance abuse at the beginning of their respective courses.

### 3.6 Copycat and Suicide Contagion

The term "copycat suicide" refers to the replication of another suicide that the person attempting to kill themselves is aware of, either personally or as a result of stories or depictions of the original suicide on television and in other media. When there are no protective factors present, the reported suicide acts as a trigger for the subsequent suicide by a weak or suggestible person. This phenomenon is known as suicide contagion (Halgin et. al, 2006). The Werther effect refers to an increase in imitative suicides after a suicide that garnered a lot of media coverage. It is called after Goethe's masterpiece The Sorrows of Young Werther. The literature on suicide groups and the effects of the media provides a wealth of data that suggests suicide is “contagious”. Suicide contagion can be seen in

the larger context of behavioural contagion, which is characterised as a situation in which the same behaviour spreads quickly and naturally among a group (Gould, 1990). Another framework for understanding suicide contagion is social learning theory. This idea contends that the majority of human behaviour is taught through modelling and observation (Bandura, 1977).

Since 1990, numerous other nations besides the United States have studied the impact of media coverage on suicide rates. These other nations include Western nations like Austria (Etzersdorfer, Sonneck and Nagel-Kuess, 1992), Germany (Jonas, 1992), and Hungary (Fekete and Mascai, 1990), as well as East Asian nations like Japan and Australia (Hassan, 1995; Ishii, 1991; Stack, 1996). The extensive research conducted in the US prior to 1990 found plenty of evidence that suicide stories in the mass media, such as newspaper articles (e.g., Barraclough, Shepherd and Jennings, 1977; Blumenthal and Bergner, 1973; Etzersdorfer et al., 1992; Ganzeboom and de Haan, 1982; Ishii, 1991; Jonas, 1992; Motto, 1970; Phillips, 1974, 1979, 1980; Stack, 1989, 1990a, 1990c, 1992, 1996; Wasserman, 1984) and television news reports (e.g., Bollen & Phillips, 1982; Phillips & Carstensen, 1986; Stack, 1990b, 1991, 1993) the incidence of deaths rises significantly afterward.

The volume, importance, and duration of media coverage are all negatively correlated with the size of the rise in suicides following a suicide story (Gould, 2001). When Etzersdorfer, Voracek and Sonneck (2001) investigated the connection between an increase in firearm suicides and the geographic spread of tabloid newspaper coverage of a famous suicide in Austria, they discovered a "dose-response" relationship. Approximately 40% of the variance in patterns in gun suicide was attributed to the

varying tabloid dissemination. This aligns with the dose-response effect initially reported by Phillips (1974). Based on a quantitative review of 293 data points from 42 studies, Stack (2000) found that studies investigating the influence of the suicide of an artist or political figure were 14.3 times more likely to find a "copycat" effect than those that did not. Additionally, research based on real deaths was 4.03 times more likely to find an imitation effect than research based on fictional stories. Although Stack (2000) could not find any age-specific impacts, it has been reported that teenagers are most affected by suicide stories when it comes to subsequent suicides that are successfully carried-out (Phillips and Carstensen, 1986).

According to research cited by Dr. Maris, suicide rates among people rose by 2-3% for seven to ten days after suicide tales were made public due to contagion. Artists, members of the governing elite, and criminals do not have their suicides copied, but performers and celebrities do. Further impacts on contagion have been revealed by additional data. The danger is increased by demographic similarities between the suicide stimulus and those who could replicate it. Teenagers are roughly twice as likely as adults to emulate a stimulus suicide.

Since ancient times, suicide groups have been identified (e.g., Bakwin, 1957; Popow, 1911). Early studies only provided descriptive descriptions of suicide "epidemics" (see Gould and Davidson, 1988), but over the past ten years, inferential studies have become more common as a consequence of methodological and qualitative shifts (Velting and Gould, 1997). According to temporal-spatial factors, several of these have discovered a notable clustering of young people's deaths (Brent et al., 1989; Gould, Petrie, Kleinman and Wallenstein, 1994; Gould, Wallenstein and Kleinman, 1990; Gould, Wallenstein,

Kleinman, O'Carroll and Mercy, 1990), with minimal impacts on individuals over the age of 24 (Gould, Wallenstein and Kleinman, 1990). Gould et al., (1990) showed that the relative risk of suicide among those between the ages of 15 and 19 was 2 to 4 times greater than that of other age categories.

A substantial correlation between exposure to a peer's suicidal conduct and a subsequent adolescent suicide attempt was identified in the majority of the 16 studies, Insel and Gould (2008) assessed on the effects of exposure to a suicidal peer on adolescents. The odds ratios for suicide attempts ranged from 2.8 to 11.0. "Teens who know friends or family members who have attempted suicide are about three times more likely to attempt suicide than are teens who do not know someone who has attempted suicide", according to analysis of information from the National Longitudinal Study of Adolescent Health (ADD Health) on a group of Americans in high school who are regionally representative (Cutler et al., 2001). Girls were more likely to attempt suicide if they knew someone who had attempted suicide, in contrast to males who were more likely to do so if they knew someone who had died by suicide. The importance of contagion and the possible effects of assortative connections among high-risk teenagers are both supported by the time ordering. If they knew someone who had tried suicide in the interim, teens who had not attempted suicide in wave one of the research projects were more likely to have done so in wave two. When a person is exposed to the suicidal conduct of a close friend or family member, contagion may occur due to the stress or sadness that a bereaved teen experiences as well as social learning about suicide.

## 3.7 Summary

Chapter 3 has offered a comprehensive exploration of the contextual landscape that serves as the backdrop for our study on the determinants of suicide in Southeast Asia. Delving into historical, demographic, and contextual dimensions, this chapter establishes the foundation for a nuanced understanding of the factors influencing suicidal tendencies within the region.

The historical exploration highlighted the dynamic evolution of Southeast Asia, recognizing the diverse trajectories that each country has undertaken. The region's history has shaped the sociocultural fabric, influencing community structures, economic patterns, and the overall mental health landscape. Demographic nuances, including population dynamics and urbanisation trends, were scrutinized to uncover the shifting societal structures. Urbanisation, in particular, emerged as a significant factor, introducing both challenges and opportunities in the realm of mental well-being and social integration.

The examination of the healthcare landscape underscored the disparities in access to mental health services. Limited access to healthcare, especially mental health support, was identified as a critical determinant, echoing Durkheim's social integration theory and its implications for vulnerability to suicide. Religious dynamics within the region were explored, acknowledging the diverse belief systems and their potential impact on individual behaviours and coping mechanisms. The interplay of religion as a determinant, aligned with Bandura's social learning theory, introduced layer of complexity to the multifaceted phenomenon of suicide.

Recognising the interconnected nature of determinants, the chapter highlighted how unemployment, access to healthcare, urbanisation, and religion are intertwined. Economic despair, mental health outcomes, and social integration were identified as common threads, weaving through each determinant and contributing to the complexity of suicidal tendencies. Emphasizing the importance of context, the chapter acknowledged the variability of these determinants across different countries and communities within Southeast Asia. Historical legacies, cultural norms, and regional disparities were identified as crucial factors influencing how these determinants manifest and impact the prevalence of suicide.

In summary, Chapter 3 sets the stage for this study empirical investigation by providing a rich contextual background. As the study move forward, armed with a deepened understanding of the historical, demographic, and contextual dimensions are better equipped to unravel the intricate web of factors that contribute to suicide within this diverse and dynamic region**.**

# CHAPTER 4: RESEARCH METHODOLOGY

## 4.1 Introduction

This chapter elucidates the research methodology employed in this study. Firstly, the variables used are explained in greater detail. Secondly, the model and the method of data analysis used are highlighted. Finally, the advantages of using the said model are also elaborated in detail.

## 4.2 Variables and measurements

Four main variables are identified in analysing the dynamics of suicide mortality in Southeast Asian countries, comprising one dependent variable and three independent variables. The dependent variable is the suicide rate, while the independent variables include urbanisation rate, health care expenditure and income per capita.

### 4.2.1 Suicide rate

Suicide rate is employed as the dependent variable in this study, using three different measures: suicide mortality rate (per 100,000 of the population), suicide mortality rate in females (per 100,000 of the female population); and suicide mortality rate in males (per 100,000 of the male population).

### 4.2.2 Urbanisation

The first independent variable used in the analysis is the urban population, measured as a percentage of the total population in the present study.

### 4.2.3 Unemployment

The second independent variable used is unemployment. The present study incorporates three distinct measures of unemployment: total unemployment (% of the total labour force) (modelled ILO estimate), female unemployment (% of the female labour force) (modelled ILO estimate), and male unemployment (% of the male labour force) (modelled ILO estimate).

### 4.2.4 Health expenditure

For health expenditure, the present study utilises current health expenditure (% of GDP). Generally, health expenditure provides insight into the accessibility of healthcare in a country. An increase in health expenditure may indicate the government's ability to establish more healthcare facilities, such as hospitals and health clinics, thereby enhancing access to healthcare for the population. However, it is important to that that this variable does not capture the distribution of healthcare facilities across a country.

### 4.2.5 Religion

Many studies, such as Dervic et. al. (2004), Koenig (2009), Perlman et. al., (2011) and Zhao et. al., (2012) have proposed that religion plays a role in the determination of suicide. The present study will explore this aspect in the context of Southeast Asia. Three

main religions are practiced in Southeast Asia: Islam, Buddhism, and Christianity. Islam is the predominant religion in Indonesia, Malaysia and Brunei. Buddhism is the majority religion in Singapore, Thailand, Myanmar, Vietnam, Cambodia, and Laos. Christianity is the primary religion in the Philippines.

## 4.3 Model

The suicide model in the present study is based on Abdou et al., (2020), Sanchez et al., (2017) and Jalles et al., (2015) as follows:

$$SR = \beta 0 + \beta 1\, URB + \beta 2 UNEMPLOYMENT + \beta 3 HEALTH + RELIGION + \epsilon \quad \ldots\ldots\ldots (1)$$

where:

SR – Suicide mortality rate

URB – Urban population (% of the total population)

HEALTH - Current health expenditure (% of GDP).

UR - Unemployment, total (% of the total labor force)

RELIGION – Muslim majority, Christian majority and Buddhist majority

## 4.4 Method

### 4.4.1 Quantile regression

Quantile regression models the relationship between a set of predictors (independent) variables and specific percentiles (or "quantiles") of a target (dependent) variable, most often the median. It has two main advantages over Ordinary Least Squares (OLS) regression namely (1) Quantile regression makes no assumptions about the distribution of the target variable, and (2) Quantile regression tends to resist the influence of outlying observations (see SPSS Statistics, 2021).

The advantage of this method over OLS method was pointed out by Rodriguez and Yao (2017) as follows:

> "Although quantile regression is most often used to model specific conditional quantiles of the response, its full potential lies in modelling the entire conditional distribution. By comparison, standard least squares regression models only the conditional mean of the response and is computationally less expensive. Quantile regression does not assume a particular parametric distribution for the response, nor does it assume a constant variance for the response, unlike least squares regression".

## 4.5 Summary

This chapter outlined the dependent and independent variables used in this study and how those variables are measured. In addition, the chapter explained the method of data analysis used, namely quantile regression, and highlighted its advantages over the OLS method.

# CHAPTER 5: RESULTS AND DISCUSSION

## 5.1 Introduction

This chapter elaborates on the research results and the discusses the findings to provide a clear understanding of the determinants of suicide in Southeast Asian countries. More importantly, this chapter also provides a detailed analysis whether the three major religions embraced in Southeast Asian countries have an impact on suicide.

## 5.2 Data and Empirical Results

This study analyses the effects of five socio-economic variables : urban population, unemployment, health expenditure, majority religion (Muslim Majority, Buddhist Majority, Christian Majority), and gender (male and female) on the dependent variable, namely, suicide mortality rate. It is noteworthy that these five variables are subject to same regulatory frameworks. This study utilises yearly data from 2000 to 2018 in the form of panel data to provide evidence on whether there is a shift in the findings based on the different religions, indicating whether religion influences the suicide mortality rate.

The first set of variables comprises three socio-economic factors (urban population, unemployment, current health expenditure). Specifically, for each country, we utilise data obtained from the World Development Indicators (WDI) database. To estimate the relationship between the dependent variables (suicide mortality rate) and independent variables namely urban population (% of total population), total unemployment (% of total labour force), current health expenditure (% of GDP) and majority religion, we include parameters of nine quantiles (q=0.1 to q=0.9).

### 5.2.1 Quantile regression - Muslim majority

The analysis begins by examining the impact of religion on suicide, considering the three main religions embraced in Southeast Asia: Islam, Buddhism, and Christianity. For the Muslim majority, the trend in urban population peaked at the third quantile (q=0.3) and subsequently declined towards the ninth quantile (q=0.9). The positive coefficient for urban population indicates a positive relationship between the increase in urban population and suicide. Numerous studies support the positive association between urban population and suicide, such as studies done by Heikkinen et. al., (1994) and Philips et al. (2002).

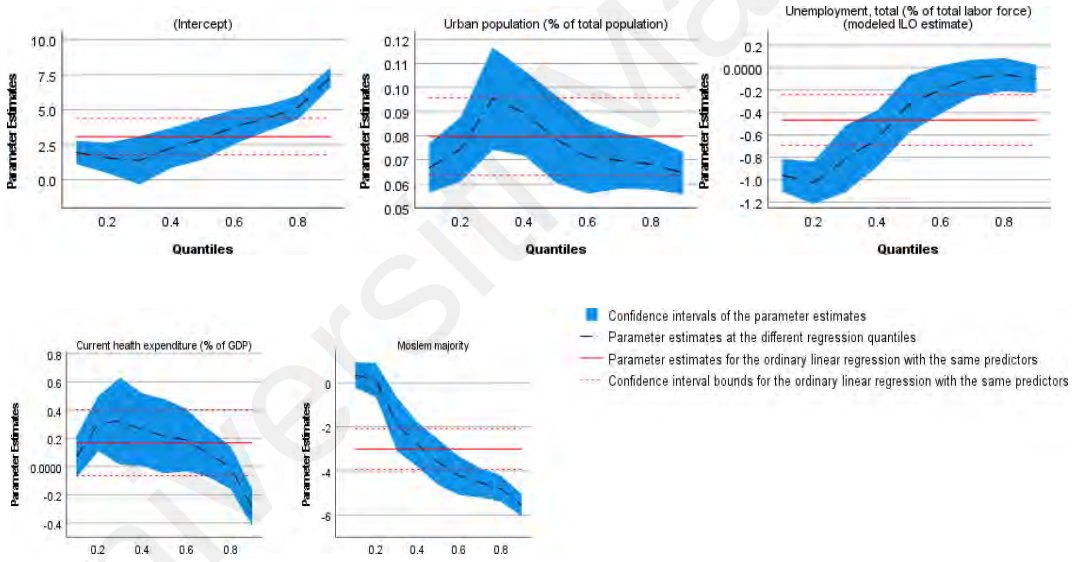


**Figure 5.1: Plot of estimated parameters for Muslim majority setting**

However, concerning the unemployment rate, a negative relationship is observed with suicide from the first to the sixth quantile, which appears to be significant. Yet, the results for the 7th, 8th and 9th quantiles seem to be insignificant. Theoretically, the suicide mortality rate should increase with rising unemployment. Still, for Muslim-majority countries, it shows a contradictory situation, strengthening the notion that Abrahamic religions do not condone suicide. The current health expenditure shows a positive

relationship with suicide from the first to the 6th quantile, which is not in line with the theory. However, in the 9th quantile, a significant negative relationship appears, indicating that the higher the health expenditure, the lower the suicide rates in Muslim-Majority countries. When the Muslim majority dummy variable is included in the analysis, a negative significant relationship remains from the 3rd until the 9th quantile, indicating that Muslim religious affiliation does not approve of suicide.

**Table 5.1: Parameter estimates by different quantiles – Muslim majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | 1.945 (.000***) | 1.555 (.005***) | 1.385 (.114) | 2.285 (.002***) | 2.912 (.000***) | 3.802 (.000***) | 4.387 (.000***) | 5.180 (.000***) | 7.306 (.000***) |
| Urban population (% of total population) | .067 (.000***) | .074 (.000***) | .095 (.000***) | .089 (.000***) | .079 (.000***) | .071 (.000***) | .070 (.000***) | .068 (.000***) | .064 (.000***) |
| Unemployment, total (% of total labor force) (modeled ILO estimate) | -.960 (.000***) | -1.025 (.000***) | -.813 (.000***) | -.631 (.000***) | -.326 (.013**) | -.195 (.076*) | -.093 (.263) | -.062 (.406) | -.100 (.116) |
| Current health expenditure (% of GDP) | .068 (.370) | .305 (.002***) | .322 (.041**) | .262 (.046**) | .215 (.108) | .189 (.095*) | .095 (.270) | -.006 (.936) | -.295 (.000***) |
| Muslim majority | .347 (.244) | .131 (.737) | -1.877 (.003***) | -2.808 (.000***) | -3.607 (.000***) | -4.223 (.000***) | -4.527 (.000***) | -4.800 (.000***) | -5.558 (.000***) |
| Pseudo R Squared | .209 | .230 | .278 | .314 | .340 | .387 | .442 | .485 | .503 |
| Mean Absolute Error (MAE) | 2.6383 | 2.2035 | 1.7210 | 1.5398 | 1.4935 | 1.5565 | 1.6691 | 1.8482 | 2.2380 |

a. Dependent Variable: Suicide mortality rate (per 100,000 population)
b. Model: (Intercept), Urban population (% of total population) , Unemployment, total (% of total labor force) (modeled ILO estimate) , Current health expenditure (% of GDP), Muslim majority

### 5.2.2 Quantile regression - Buddhist majority

The section will analyse the role of Buddhism majority in influencing suicide rates. Most Southeast Asian countries have a Buddhist majority population, including countries like Singapore, Thailand, Myanmar, Cambodia, Vietnam and Laos.

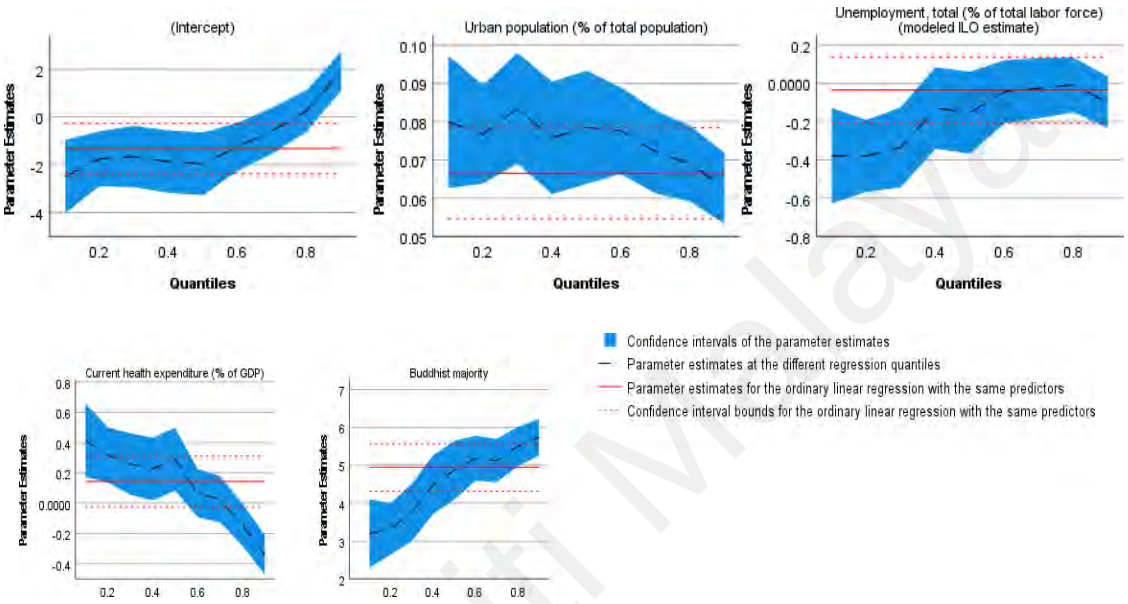


**Figure 5.2: Plot of estimated parameters for Buddhist majority setting**

For Buddhist majority, the results show a declining trend in suicide mortality rate concerning urban population. In a Buddhist majority country, a positive relationship is observed between urban population and suicide mortality rate across all quintiles. The anticipated positive association between rising urban population and suicide rates is confirmed. Regarding unemployment, a negative relationship is observed across all quintiles. However, the effect of unemployment is significant in q1, q2 and q3. Beyond q3, the coefficient for unemployment diminishes and becomes insignificant. Although the current health expenditure is significant, it shows a positive relationship until the sixth quintile. However, a negative significant relationship between current health expenditure and suicide rate only emerges at the 8$^{th}$ and 9$^{th}$ quintiles, indicating a significant inverse relationship as per the theory. In general, a positive significant relationship between the

Buddhist majority and suicide mortality rate is observed from the first quintile until the ninth quintile, indicating a positive association between being a Buddhist and suicide rates. This finding parallels to many other studies, such as those done by Snarr, Heyman and Smith (2010), Jia and Zhang (2012) and Zhang, Wieczorek and Tu (2011).

**Table 5.2 : Parameter estimates by different quantiles – Buddhist majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | -2.496 (.002***) | -1.749 (.003***) | -1.658 (.012**) | -1.875 (.005***) | -1.962 (.004***) | -1.252 (.015**) | -.575 (.240) | .252 (.572) | 1.921 (.000***) |
| Urban population (% of total population) | .080 (.000***) | .077 (.000***) | .084 (.000***) | .076 (.000***) | .079 (.000***) | .078 (.000***) | .072 (.000***) | .069 (.000***) | .063 (.000***) |
| Unemployment, total (% of total labor force) (modeled ILO estimate) | -.378 (.003***) | -.379 (.000***) | -.334 (.002***) | -.128 (.237) | -.153 (.160) | -.044 (.601) | -.025 (.757) | -.007 (.919) | -.099 (.149) |
| Current health expenditure (% of GDP) | .416 (.001***) | .318 (.001***) | .259 (.013**) | .225 (.033**) | .290 (.007*) | .067 (.408) | .026 (.736) | -.141 (.047**) | -.343 (.000***) |
| Buddhist majority | 3.196 (.000***) | 3.322 (.000***) | 3.755 (.000***) | 4.485 (.000***) | 4.866 (.000***) | 5.185 (.000***) | 5.127 (.000***) | 5.497 (.000***) | 5.740 (.000***) |
| Pseudo R Squared | .367 | .441 | .485 | .511 | .526 | .551 | .579 | .598 | .601 |
| Mean Absolute Error (MAE) | 1.7059 | 1.4988 | 1.2025 | 1.1115 | 1.0722 | 1.1091 | 1.1911 | 1.3544 | 1.6929 |
| a. Dependent Variable: Suicide mortality rate (per 100,000 population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Unemployment, total (% of total labor force) (modeled ILO estimate) , Current health expenditure (% of GDP), Buddhist majority | | | | | | | | | |

### 5.2.3 Quantile regression - Christian Majority

This section of the analysis investigates the impact of Christianity on suicide rates in Christian-majority country. The Philippines, with the highest concentration of the Christian population in Southeast Asia, is the only country considered in this category.

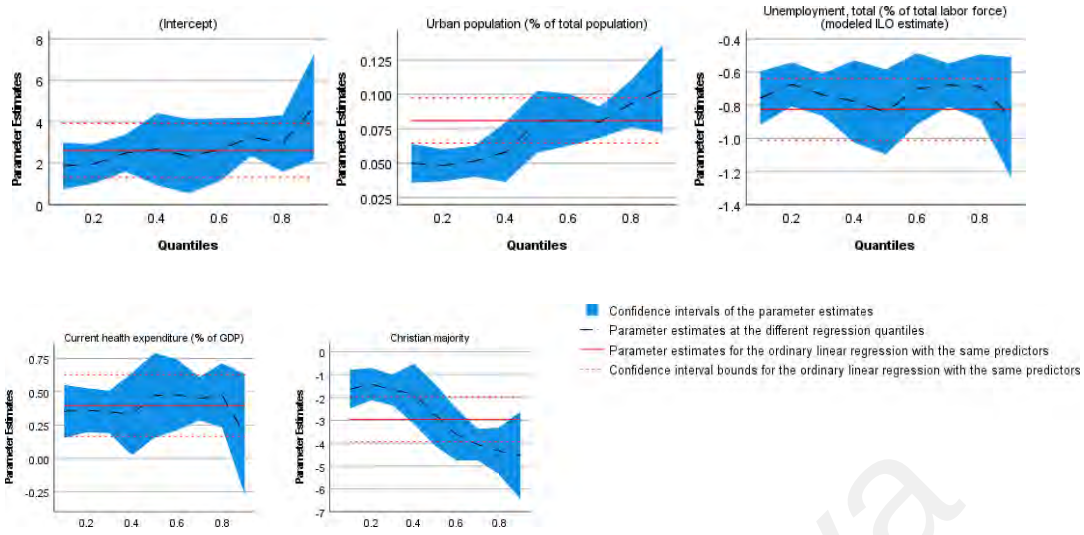


**Figure 5.3: Plot of estimated parameters for Christian majority setting**

For urban population, the positive association between urban population and suicide rates persists even for Christian-majority countries. The coefficient also remains significant throughout all quintiles. The effect of urban population on suicide rates appears to strengthen at higher quintiles. For unemployment, an inverse relationship is observed, indicating a negative correlation between unemployment and suicide rates. The negative coefficient remains significant across all quintiles. This suggests that, for a Christian-majority country like the Philippines, unemployment has no real effect on suicide rates, as the religion plays a stronger role in determining suicide. The coefficient for current health expenditure remains positive until the 8$^{th}$ quintile, becoming not significant only in the 9$^{th}$ quintile. As expected, the coefficient for Christian majority remains negative and significant throughout all quintiles, indicating that Christianity, as an Abrahamic religion, does not condone suicide, similar to the Muslim religion. Additionally, the value of the coefficient appears to strengthen at higher quintiles.

**Table 5.3: Parameter estimates by different quantiles – Christian majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | 1.869 (.001***) | 1.974 (.000***) | 2.496 (.000***) | 2.679 (.003***) | 2.343 (.011**) | 2.655 (.001**) | 3.274 (.000***) | 2.958 (.000***) | 4.705 (.000***) |
| Urban population (% of total population) | .050 (.000***) | .048 (.000***) | .051 (.000***) | .058 (.000***) | .080 (.000***) | .081 (.000***) | .080 (.000***) | .093 (.000***) | .104 (.000***) |
| Unemployment, total (% of total labor force) (modeled ILO estimate) | -.757 (.000***) | -.673 (.000***) | -.736 (.000***) | -.777 (.000***) | -.840 (.000***) | -.699 (.000***) | -.678 (.000***) | -.687 (.000***) | -.873 (.000***) |
| Current health expenditure (% of GDP) | .352 (.001***) | .362 (.000***) | .349 (.000***) | .332 (.035**) | .473 (.004***) | .478 (.001***) | .450 (.000***) | .474 (.000***) | .182 (.426) |
| Christian majority | -1.638 (.000***) | -1.414 (.000***) | -1.669 (.000***) | -1.834 (.006***) | -2.758 (.000***) | -3.618 (.000***) | -4.062 (.000***) | -4.343 (.000***) | -4.534 (.000***) |
| Pseudo R Squared | .269 | .314 | .327 | .314 | .307 | .334 | .378 | .402 | .376 |
| Mean Absolute Error (MAE) | 2.1997 | 1.9627 | 1.7609 | 1.6681 | 1.5685 | 1.6463 | 1.7812 | 1.9698 | 2.4089 |
| a. Dependent Variable: Suicide mortality rate (per 100,000 population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Unemployment, total (% of total labor force) (modeled ILO estimate) , Current health expenditure (% of GDP), Christian majority | | | | | | | | | |

The analysis is extended further to investigate whether male and female unemployment have an impact on male and female suicide mortality rates in three different settings: a Muslim, Buddhist and Christian-majority countries. The results are as presented below.

## 5.3 Female Unemployment and Female Suicide

### 5.3.1 Female Unemployment and Female Suicide Mortality in Muslim-Majority countries

This section investigates female suicide mortality rate in a Muslim-majority setting in relation to female unemployment.

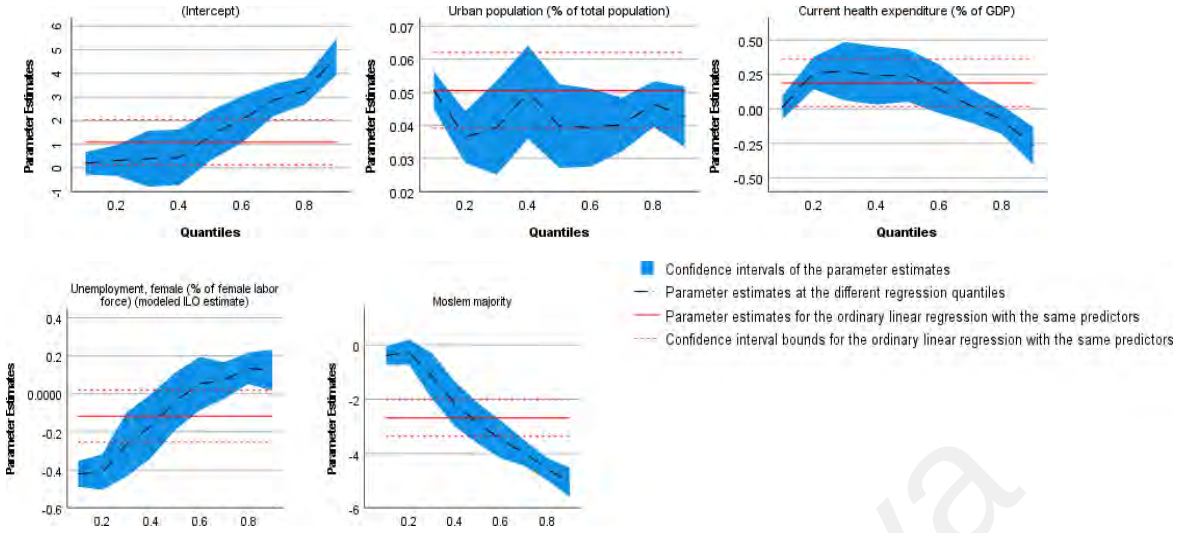


**Figure 5.4: Plot of estimated parameters for females in Muslim majority setting**

For female in a Muslim-majority country, the coefficient for urban population remains positive. The coefficient for urban population also becomes significant from the 5$^{th}$ to the 9$^{th}$ quintiles. Regarding current health expenditure, the coefficient becomes negative and significant only in the 9$^{th}$ quintile, indicating an inverse relationship between health expenditure and suicide. However, this is not the case at lower quintiles (from 1$^{st}$ to 7$^{th}$ quintiles). To isolate the impact of unemployment by gender, the female unemployment rate is used, and it was found that at the 8$^{th}$ and 9$^{th}$ quintiles, a positive significant coefficient appears, indicating that as female unemployment increases, there is higher incidence of suicide. As expected, the coefficient for Muslim majority shows a negative significant relationship with suicide rates, indicating an inverse relationship between those two variables. The significant negative coefficient also seems to strengthen at higher quintiles.

**Table 5.4: Parameter estimates by different quantiles –female Muslim majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | .204 (.398) | .320 (.335) | .394 (.512) | .455 (.446) | 1.384 (.010*) | 2.060 (.000***) | 2.875 (.000***) | 3.263 (.000***) | 4.701 (.000***) |
| Urban population (% of total population) | .051 (.000***) | .036 (.000***) | .039 (.000***) | .050 (.000***) | .040 (.000***) | .039 (.000***) | .040 (.000***) | .046 (.000***) | .043 (.000***) |
| Current health expenditure (% of GDP) | .012 (.776) | .261 (.000***) | .274 (.012**) | .243 (.024**) | .242 (.013**) | .146 (.106) | .024 (.702) | -.078 (.138) | -.268 (.000***) |
| Unemployment, female (% of female labor force) (modeled ILO estimate) | -.421 (.000***) | -.412 (.000***) | -.266 (.002***) | -.169 (.049**) | -.039 (.613) | .054 (.452) | .070 (.156) | .135 (.002***) | .125 (.025**) |
| Muslim majority | -.389 (.024**) | -.255 (.277) | -1.145 (.008***) | -2.177 (.000***) | -2.885 (.000***) | -3.483 (.000***) | -3.968 (.000***) | -4.563 (.000***) | -5.063 (.000***) |
| Pseudo R Squared | .176 | .166 | .217 | .265 | .327 | .371 | .410 | .461 | .542 |
| Mean Absolute Error (MAE) | 1.8619 | 1.5784 | 1.3361 | 1.1755 | 1.1085 | 1.1543 | 1.2585 | 1.4329 | 1.6835 |
| a. Dependent Variable: Suicide mortality rate, female (per 100,000 female population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Current health expenditure (% of GDP), Unemployment, female (% of female labor force) (modeled ILO estimate) , Muslim majority | | | | | | | | | |

## 5.3.2 Female Unemployment and Female Suicide Mortality in Buddhist-Majority countries

This section investigates female suicide mortality rate with female unemployment in Buddhist majority setting**.**

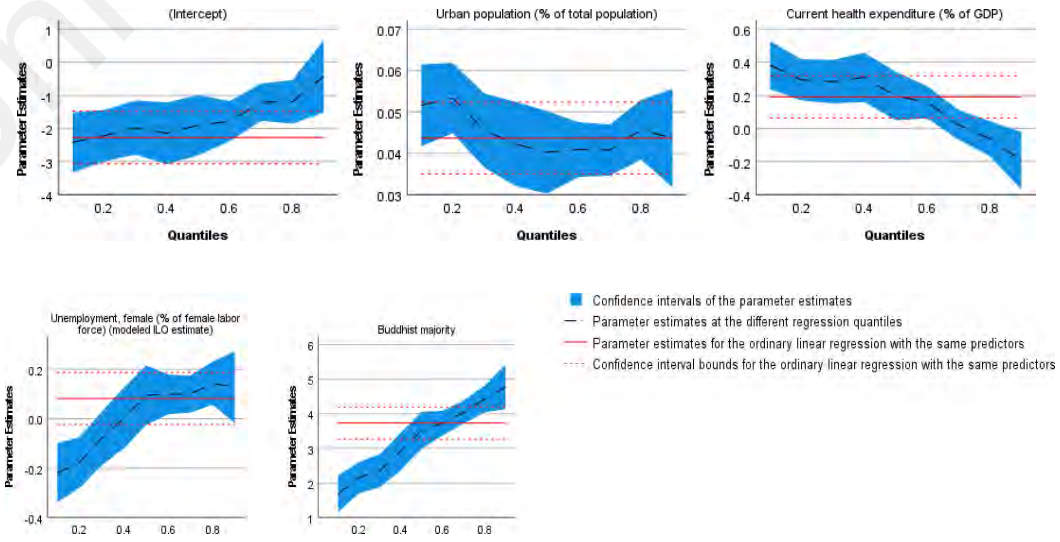


**Figure 5.5: Plot of estimated parameters for females in Buddhist majority setting**

For female unemployment in Buddhist majority countries, the urban population displays a positive significant relationship, but the value of coefficients somewhat appears not to be strong enough. The coefficient for current health expenditure appears to be positive and significant from the 1st to the 6th quintile. Only in the 9th quintile the coefficient became negative and significant, indicating that as health expenditure rises, suicide rates should decline. A positive association between unemployment and suicide rates appear to be positive and significant from the 6th to the 9th quintile, indicating that as female unemployment rises, female suicide is also likely to rise. The coefficient for Buddhist majority indicates a positive significant relationship with suicide rates, similar to many other findings, such as those done by Manoranjitham et. al., (2010), Liu Ky et. al., (2009), and Yip et. al., (2009).

**Table 5.5: Parameter estimates by different quantiles–female Buddhist majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | -2.417 (.000***) | -2.220 (.000***) | -1.973 (.000***) | -2.145 (.000***) | -1.899 (.000***) | -1.782 (.000***) | -1.204 (.000***) | -1.195 (.000***) | -.422 (.447) |
| Urban population (% of total population) | .052 (.000***) | .053 (.000***) | .046 (.000***) | .042 (.000***) | .040 (.000***) | .041 (.000***) | .041 (.000***) | .046 (.000***) | .044 (.000***) |
| Current health expenditure (% of GDP) | .382 (.000***) | .294 (.000***) | .283 (.000***) | .309 (.000***) | .196 (.009***) | .159 (.002***) | .022 (.629) | -.062 (.251) | -.195 (.029**) |
| Unemployment, female (% of female labor force) (modeled ILO estimate) | -.219 (.000***) | -.177 (.001***) | -.080 (.145) | .003 (.962) | .095 (.122) | .099 (.016**) | .100 (.009***) | .144 (.001***) | .128 (.081*) |
| Buddhist majority | 1.687 (.000***) | 2.155 (.000***) | 2.355 (.000***) | 2.912 (.000***) | 3.526 (.000***) | 3.731 (.000***) | 4.048 (.000***) | 4.428 (.000***) | 4.776 (.000***) |
| Pseudo R Squared | .286 | .361 | .419 | .461 | .514 | .540 | .559 | .587 | .633 |
| Mean Absolute Error (MAE) | 1.3424 | 1.0872 | .9580 | .8426 | .7997 | .8165 | .8931 | 1.0430 | 1.2778 |
| a. Dependent Variable: Suicide mortality rate, female (per 100,000 female population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Current health expenditure (% of GDP), Unemployment, female (% of female labor force) (modeled ILO estimate) , Buddhist majority | | | | | | | | | |

### 5.3.3 Female Unemployment and Female Suicide Mortality in Christian-Majority countries

This section investigates the female suicide mortality rate with female unemployment in a Christian majority setting.

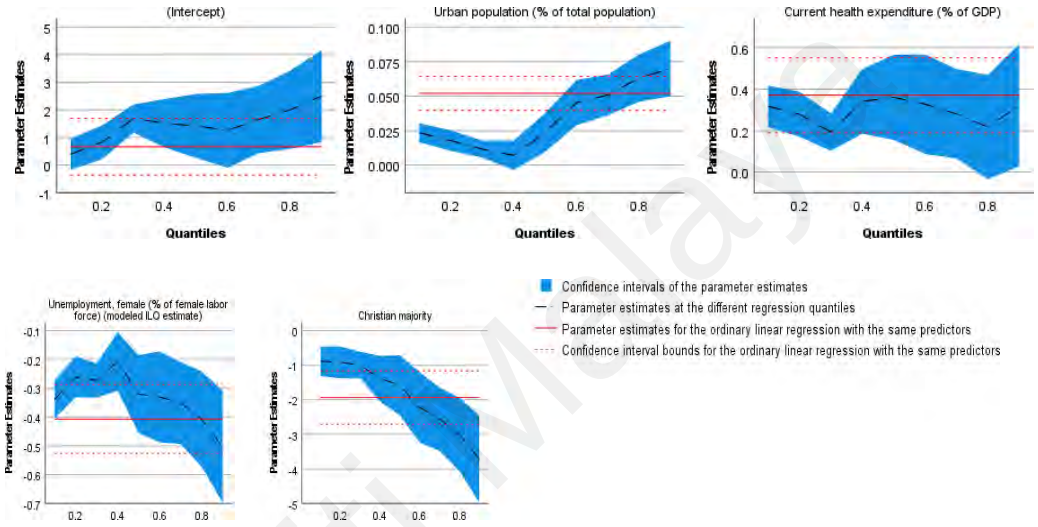


**Figure 5.6: Plot of estimated parameters for females in Christian majority setting**

For a Christian majority setting, with female suicide mortality rate as the dependent variable, the coefficient for urban population remains positive and significant at all quintile levels. The value also seems to increase in strength. However, for current health expenditure, even though the coefficient is significant, it displays a positive relationship, which is not in line with the theory. Regarding female unemployment, the coefficients show a negative relationship, indicating a relationship which is not justified by theory. However, the strength of the coefficients has not significantly improved. Finally, the value of the coefficient for Christian majority gradually increases in its strength

throughout all quintiles and is found to be significant, indicating that for a Christian majority country, female suicide mortality displays a negative relationship.

**Table 5.6: Parameter estimates by different quantiles – female Christian majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | .396 (.170) | .825 (.009***) | 1.688 (.000***) | 1.518 (.001***) | 1.420 (.017**) | 1.259 (.069*) | 1.655 (.008***) | 2.010 (.006***) | 2.505 (.003***) |
| Urban population (% of total population) | .023 (.000***) | .018 (.000***) | .012 (.000***) | .007 (.190) | .024 (.001***) | .045 (.000***) | .051 (.000***) | .063 (.000***) | .070 (.000***) |
| Current health expenditure (% of GDP) | .317 (.000***) | .279 (.000***) | .193 (.000***) | .341 (.000***) | .361 (.001***) | .328 (.008***) | .281 (.011**) | .217 (.091*) | .323 (.032**) |
| Unemployment, female (% of female labor force) (modeled ILO estimate) | -.339 (.000***) | -.260 (.000***) | -.273 (.000***) | -.206 (.000***) | -.320 (.000***) | -.330 (.000***) | -.351 (.000***) | -.407 (.000***) | -.503 (.000***) |
| Christian majority | -.886 (.000***) | -.916 (.000***) | -.995 (.000***) | -1.388 (.000***) | -1.580 (.000***) | -2.222 (.000***) | -2.562 (.000***) | -3.000 (.000***) | -3.709 (.000***) |
| Pseudo R Squared | .200 | .238 | .264 | .266 | .265 | .265 | .278 | .289 | .351 |
| Mean Absolute Error (MAE) | 1.6176 | 1.4352 | 1.3347 | 1.2299 | 1.2106 | 1.2779 | 1.3894 | 1.6373 | 2.2090 |
| a. Dependent Variable: Suicide mortality rate, female (per 100,000 female population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Current health expenditure (% of GDP), Unemployment, female (% of female labor force) (modeled ILO estimate) , Christian majority | | | | | | | | | |

## 5.4 Male Unemployment and Male Suicide Mortality

### 5.4.1 Male Unemployment and Male Suicide Mortality in Muslim Majority countries

This section investigates male suicide mortality rate with male unemployment in Muslim majority setting**.**

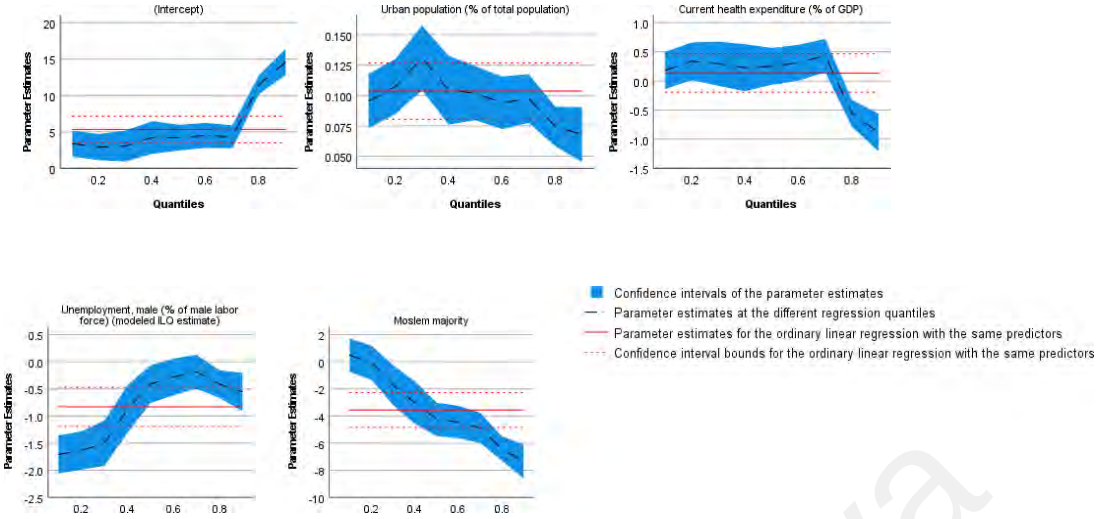


**Figure 5.7: Plot of estimated parameters for male Muslim majority setting**

For urban population, the coefficient is positive and significant for all quintiles as expected. For current health expenditure, the coefficient becomes negative and significant in the 8$^{th}$ and 9$^{th}$ quintiles, which is in line with the theory. It indicates that when current health expenditure improves, male suicide mortality declines. For male unemployment, the coefficient is significant but inversely related to male suicide mortality. This is attributable to a stronger effect of Muslim religion inducing a weak effect of male unemployment on male suicide mortality. As expected, the coefficient for Muslim majority appears to be significant and inversely related from the 3$^{rd}$ to the 9th quintile, and the effect strengthens at higher quintiles, beginning from the fourth quintile.

**Table 5.7: Parameter estimates by different quantiles – male Muslim majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | 3.384 (.000***) | 2.903 (.002***) | 3.054 (.005***) | 4.239 (.000***) | 4.205 (.000***) | 4.520 (.000***) | 4.318 (.000***) | 11.490 (.000***) | 14.618 (.000***) |
| Urban population (% of total population) | .095 (.000***) | .107 (.000***) | .131 (.000***) | .104 (.000***) | .102 (.000***) | .094 (.000***) | .098 (.000***) | .074 (.000***) | .068 (.000***) |
| Current health expenditure (% of GDP) | .179 (.270) | .339 (.040**) | .296 (.127) | .227 (.268) | .251 (.120) | .312 (.047**) | .437 (.003***) | -.555 (.000***) | -.886 (.000***) |
| Unemployment, male (% of male labor force) (modeled ILO estimate) | -1.708 (.000***) | -1.634 (.000***) | -1.503 (.000***) | -.872 (.000***) | -.413 (.020**) | -.279 (.105) | -.183 (.251) | -.409 (.002***) | -.556 (.002***) |
| Muslim majority | .489 (.436) | -.072 (.910) | -1.714 (.023**) | -3.009 (.000***) | -4.243 (.000***) | -4.438 (.000***) | -4.860 (.000***) | -6.396 (.000***) | -7.341 (.000***) |
| Pseudo R Squared | .222 | .248 | .269 | .278 | .299 | .332 | .377 | .424 | .404 |
| Mean Absolute Error (MAE) | 3.4756 | 2.9527 | 2.4445 | 2.1579 | 2.0731 | 2.1103 | 2.2825 | 2.9280 | 3.5752 |
| a. Dependent Variable: Suicide mortality rate, male (per 100,000 male population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Current health expenditure (% of GDP), Unemployment, male (% of male labor force) (modeled ILO estimate) , Muslim majority | | | | | | | | | |

## 5.4.2 Male Unemployment and Male Suicide Mortality in Buddhist-Majority countries

This section investigates the male suicide mortality rate in relation to male unemployment in a Buddhist majority setting.

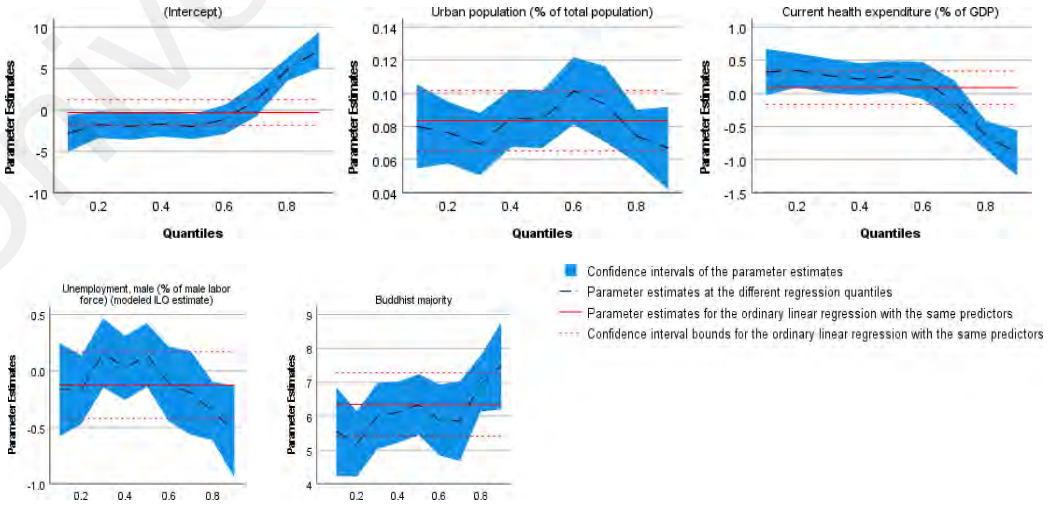


**Figure 5.8: Plot of estimated parameters for males in a Buddhist majority setting**

The coefficient for urban population indicates a positive and significant relationship, as expected. The coefficient for current health expenditure shows a positive and significant relationship from the 1st to the 5th quintile; however, this contradicts the theory and previous research findings by Hawton (2000), Sen Chang et. al. (2009), and Chang (2009). In the 8th and 9th quintile, a negative and significant relationship emerges with male suicide mortality, indicating that lower health expenditure will lead to higher male suicide mortality, as access to various health facilities will be reduced. The coefficient for male unemployment displays a significant inverse relationship in the 8th and the 9th quintiles. Finally, the coefficient for Buddhist majority appears to display a positive and significant relationship throughout all quintiles, and the effect also become stronger in the 8th and 9th quintile.

**Table 5.8: Parameter estimates by different quantiles – male Buddhist majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | -2.837 (.012**) | -1.763 (.034**) | -1.954 (.020**) | -1.697 (.029**) | -2.014 (.009***) | -1.154 (.200) | 1.194 (.238) | 4.930 (.000***) | 7.231 (.000***) |
| Urban population (% of total population) | .080 (.000***) | .076 (.000***) | .069 (.000***) | .085 (.000***) | .084 (.000***) | .102 (.000***) | .093 (.000***) | .074 (.000***) | .067 (.000***) |
| Current health expenditure (% of GDP) | .322 (.071*) | .348 (.008***) | .267 (.044**) | .215 (.079*) | .252 (.038**) | .193 (.174) | -.120 (.450) | -.632 (.000***) | -.904 (.000***) |
| Unemployment, male (% of male labor force) (modeled ILO estimate) | -.166 (.430) | -.164 (.287) | .160 (.306) | .027 (.850) | .143 (.318) | -.115 (.494) | -.194 (.304) | -.353 (.008***) | -.538 (.010*) |
| Buddhist majority | 5.543 (.000***) | 5.181 (.000***) | 6.009 (.000***) | 6.115 (.000***) | 6.342 (.000***) | 5.885 (.000***) | 5.853 (.000***) | 6.963 (.000***) | 7.486 (.000***) |
| Pseudo R Squared | .383 | .436 | .475 | .485 | .480 | .472 | .488 | .530 | .503 |
| Mean Absolute Error (MAE) | 2.5545 | 2.0145 | 1.7289 | 1.5589 | 1.5374 | 1.6067 | 1.7790 | 2.2956 | 2.8224 |
| a. Dependent Variable: Suicide mortality rate, male (per 100,000 male population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Current health expenditure (% of GDP), Unemployment, male (% of male labor force) (modeled ILO estimate) , Buddhist majority | | | | | | | | | |

### 5.4.3 Male Unemployment and Male Suicide Mortality in Christian Majority countries

Lastly, this section investigates the male suicide mortality rate in relation to male unemployment in a Christian majority setting.

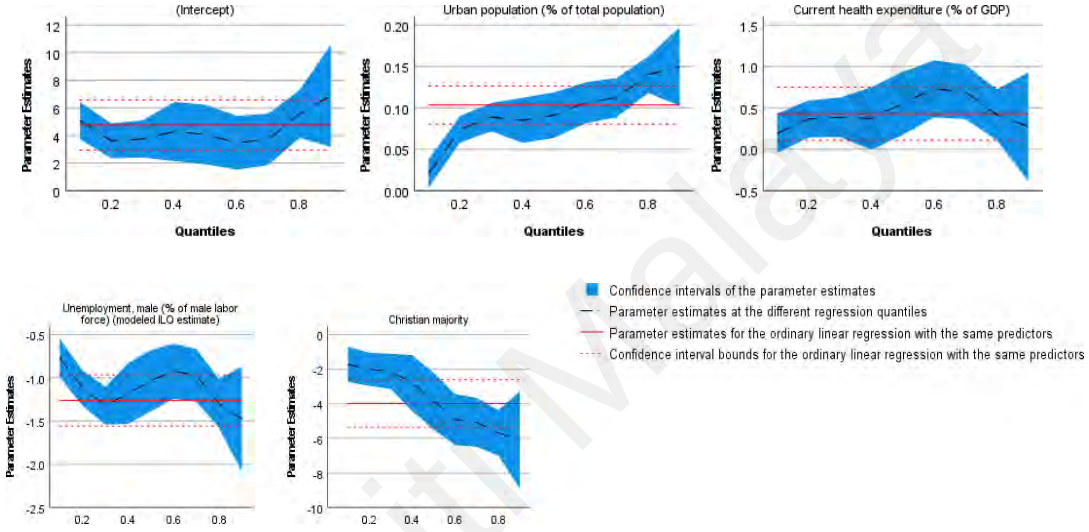


**Figure 5.9: Plot of estimated parameters for male Christian majority setting**

The coefficient for urban population, as expected, appears to be positive and significant. The coefficient for current health expenditure also appears to be positive and significant until the 8th quintile, but this finding contradicts previous studies such by Sengupta (2015), Siriwanarangsan (2004), and Sharan et al., (2017). However, for the 9th quintile, current health care expenditure coefficient emerges as insignificant. The coefficient for male unemployment emerged as negative but significant throughout the entire quintile, indicating a contradictory result with theory and previous studies. However, the strength of the male unemployment variable somewhat remains unchanged throughout the entire quintiles with minimal fluctuations. Finally, the coefficient for Christian majority appears to be negative and significant throughout the entire quintiles, as expected. The

value of the Christian majority coefficient also strengthens substantially from the 1st to the 9th quintile.

**Table 5.9 : Parameter estimates by different quantiles – male Christian majority**

| Parameter Estimates by Different Quantiles[a,b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | q=0.1 | q=0.2 | q=0.3 | q=0.4 | q=0.5 | q=0.6 | q=0.7 | q=0.8 | q=0.9 |
| (Intercept) | 5.081 (.000***) | 3.618 (.000***) | 3.751 (.000***) | 4.290 (.000***) | 4.080 (.000***) | 3.467 (.001***) | 3.724 (.000***) | 5.566 (.000***) | 6.896 (.000***) |
| Urban population (% of total population) | .021 (.018**) | .074 (.000***) | .089 (.000***) | .085 (.000***) | .091 (.000***) | .106 (.000***) | .113 (.000***) | .140 (.000***) | .150 (.000***) |
| Current health expenditure (% of GDP) | .192 (.113) | .367 (.001***) | .388 (.001***) | .372 (.054*) | .555 (.005**) | .731 (.000***) | .694 (.000***) | .416 (.008***) | .273 (.412) |
| Unemployment, male (% of male labor force) (modeled ILO estimate) | -.769 (.000***) | -1.117 (.000***) | -1.320 (.000***) | -1.182 (.000***) | -1.032 (.000***) | -.922 (.000***) | -.970 (.000***) | -1.296 (.000***) | -1.476 (.000***) |
| Christian majority | -1.713 (.001***) | -2.003 (.000***) | -2.122 (.000***) | -2.803 (.001***) | -3.853 (.000***) | -4.914 (.000***) | -5.071 (.000***) | -5.684 (.000***) | -6.090 (.000***) |
| Pseudo R Squared | .281 | .325 | .332 | .306 | .290 | .313 | .363 | .380 | .303 |
| Mean Absolute Error (MAE) | 3.1408 | 2.5561 | 2.3771 | 2.1977 | 2.0979 | 2.2003 | 2.2829 | 2.9289 | 3.4628 |
| a. Dependent Variable: Suicide mortality rate, male (per 100,000 male population) | | | | | | | | | |
| b. Model: (Intercept), Urban population (% of total population) , Current health expenditure (% of GDP), Unemployment, male (% of male labor force) (modeled ILO estimate) , Christian majority | | | | | | | | | |

## 5.5 Summary

This chapter has elucidated the actual analysis using quantile regression. As stated earlier, quantile regression is superior compared to Ordinary Least Squares (OLS) regression estimates as it uses the median in estimating the equation, while OLS uses the mean approach in estimating the equation. This chapter brought to the fore the following research findings. Firstly, urban population had a positive significant impact across all models developed. Secondly, for unemployment, when female suicide mortality rate is used as the dependent variable, we found some evidence of positive correlation between female unemployment and female suicide mortality rates. Likewise, a positive relationship appears for male suicide mortality rate with male unemployment but only in one of the models. Thirdly, for suicide mortality rate, male mortality rate and female

mortality rate with current health expenditure, a negative relationship appears for two of the models but at higher quintiles. Finally, a negative relationship appears across all models between suicide mortality rate, female suicide mortality rate, and male suicide mortality rate for Muslim and Christian religions, while for Buddhists, a positive relationship emerges.

# CHAPTER 6: CONCLUSION & RECOMMENDATIONS

## 6.1 Summary

The first objective of the present study is to examine the impact of urban population on suicide in Southeast Asia. It was found that the urban population has a positive relationship with suicide in Southeast Asia. The second objective is to analyse the impact of unemployment on suicide. For unemployment, when the female suicide mortality rate is used as a dependent variable, we found evidence of a positive correlation between female unemployment with female suicide mortality rates in two of the models (B1 and B2). Also, a positive relationship appears for male suicide mortality rate with male unemployment in the third model (C3). The third objective is to investigate the role of health expenditure on suicide. For suicide mortality rate, male mortality rate and female mortality rate with current health expenditure, a negative relationship appears for two out of three models (A1, A2; B1, B2; C1, C2) but at higher quintiles. The final objective is to ascertain the impact of religion on suicide across three different religions in Southeast Asia. It is found that a negative relationship appears across all models between suicide mortality rate; female suicide mortality rate and male suicide mortality rate for Muslim and Christian religions while for Buddhist religion, a positive relationship appears.

The lower suicide mortality rate observed in Muslim-majority countries can be influenced by a combination of religious, cultural, and social factors. It's important to note that this observation is complex, and while some general trends may exist, variations among Muslim-majority countries also exist due to diverse cultural practices, socio-economic conditions, and historical contexts.

Religious beliefs and practices play a crucial role in shaping attitudes toward suicide. Islam provides a comprehensive moral and ethical framework that guides individuals in their behaviours and decision-making, emphasizing the value of life and discouraging self-harm or suicide. The stigmatization of suicide within Islamic teachings, considering it a grave sin, may act as a deterrent, discouraging individuals from contemplating or attempting suicide.

Social cohesion and community support are notable features in many Muslim-majority countries. Emphasis on communal bonds and close-knit family structures provides strong social ties and community support networks, acting as protective factors against suicide. Islamic cultures often promote collectivism, where individuals prioritize the welfare of the community over individual interests. This collective mindset fosters a sense of belonging and shared responsibility, contributing to mental well-being.

Resilience and coping mechanisms are influenced by Islamic teachings. Religious coping strategies, such as prayer and seeking solace in faith during times of adversity, may enhance individuals' ability to navigate life's challenges and reduce the likelihood of resorting to self-harm. The emphasis on patience (Sabr) as a virtue in Islam contributes to the development of resilience in the face of adversity, reducing the likelihood of impulsive or fatalistic actions.

Family and social support systems are prominent in many Muslim-majority countries. Extended family structures, where multiple generations live together, provide a strong support system, especially for individuals facing economic hardships, reducing the sense of isolation. Additionally, social safety nets, including charitable and religious

organizations, offer assistance to those in need, mitigating socio-economic factors that can lead to suicide.

Cultural attitudes toward mental health within some Muslim-majority cultures may be characterized by reduced stigma compared to some Western societies. This reduced stigma encourages individuals to seek help and support when facing mental health challenges. Furthermore, traditional healing practices, combining spiritual and cultural elements, are incorporated in some Muslim-majority countries to address mental health concerns, offering alternative avenues for support and treatment.

It is crucial to approach these factors with sensitivity, recognizing the diversity within Muslim-majority countries and avoiding generalizations. Additionally, ongoing research is essential to deepen our understanding of the complex interplay between religious, cultural, and social factors and their impact on suicide rates in different regions.

The observation of a lower suicide mortality rate in Christian-majority countries, similar to that seen in Muslim-majority countries, can be influenced by a range of religious, cultural, and social factors inherent to Christian traditions. It is essential to recognize that these trends are complex and can vary widely among Christian-majority countries due to cultural diversity, socio-economic conditions, and regional nuances.

Religious values and teachings play a significant role in shaping attitudes toward suicide within Christian-majority countries. Christianity, much like Islam, emphasizes the sanctity of life and discourages self-harm or suicide. The Bible, a foundational text in the Judeo-Christian tradition, typically views suicide as a violation of the commandment

"Thou shalt not kill." Pastoral care and support within Christian communities also contribute to addressing mental health concerns and providing spiritual guidance.

Community and social support are key features in Christian-majority countries, fostering strong ties within congregations. Church communities often serve as vital support networks, offering emotional and practical help to individuals facing challenges. Family values, emphasized in many Christian traditions, contribute to close-knit family structures and extended family support, acting as protective factors against suicide.

The moral and ethical framework provided by Christianity guides individual behaviour. Adherence to Christian principles may influence decision-making, discouraging behaviours that could lead to self-harm. Similar to Islam, Christianity has historically stigmatized suicide, viewing it as a violation of moral and ethical guidelines.

Cultural attitudes toward mental health within Christian-majority countries may include church-based mental health services that integrate psychological support with religious teachings. This integrated approach can address mental health concerns while providing spiritual guidance. Additionally, reduced stigma surrounding mental health issues within Christian communities may encourage individuals to seek help and support when facing challenges.

Ethical and social values within Christianity, such as charitable initiatives and social welfare programs, can address socio-economic factors contributing to suicide vulnerability. Christian teachings that promote ethical considerations in decision-making may guide individuals in facing challenges and reduce the likelihood of self-harm.

While these factors provide a general understanding, it's crucial to recognize the diversity within Christian-majority countries and avoid making broad generalizations. Factors such as denominational differences, regional variations, and evolving cultural norms within Christian communities can significantly impact suicide trends. Ongoing research is essential to further explore these complex dynamics and enhance our understanding of the interplay between religion, culture, and suicide rates in different contexts.

The observed positive relation between suicide mortality rates and Buddhist-majority countries suggests that there may be unique factors within Buddhist cultural and religious contexts that contribute to this trend. It's important to approach this observation with sensitivity, acknowledging the diversity within Buddhist-majority countries and recognizing that suicide rates can vary widely due to cultural practices, socio-economic conditions, and regional nuances.

Buddhism, with its emphasis on individual introspection and detachment from worldly desires, may contribute to the observed positive relation. The concept of suffering (dukkha) in Buddhism recognizes life's inherent challenges, and individuals may interpret severe mental distress as a form of personal suffering that requires transcendence. Additionally, the lack of a specific prohibition against suicide in Buddhist teachings may influence attitudes toward self-harm.

Cultural attitudes toward mental health within Buddhist-majority countries may play a role. There could be stigma associated with seeking help for mental health issues, hindering individuals from accessing appropriate support. The lack of awareness or understanding of mental health concerns within the community may contribute to delayed or inadequate interventions.

Socio-economic factors, prevalent in many Buddhist-majority countries, can contribute to the positive relation with suicide mortality rates. Economic challenges, unemployment, and limited access to social services may increase vulnerability to mental health issues and suicidal tendencies. The intersection of these factors with Buddhist cultural norms could exacerbate the risk.

Certain traditional practices within Buddhist cultures, such as the acceptance of impermanence (anicca) and the cyclical nature of life and death (samsara), may influence attitudes toward life struggles. Individuals may view suicide as a means of breaking free from perceived cycles of suffering, particularly in contexts where the broader community shares similar perspectives.

The communal aspects of Buddhist practice, including shared rituals and community engagement, may serve as both protective and risk factors. While community support can be a source of strength, the potential for social pressure to conform to cultural norms and expectations may discourage individuals from expressing or seeking help for mental health challenges.

The lack of robust mental health infrastructure in some Buddhist-majority countries may contribute to the positive relation. Limited access to mental health services, combined with insufficient awareness and education about mental health issues, may result in underreporting or inadequate support for those at risk of suicide.

It's crucial to emphasize that these interpretations are general observations and may not apply universally to all Buddhist-majority countries. Variations exist, and factors

influencing suicide rates are complex and multifaceted. Further research and nuanced exploration are necessary to deepen our understanding of the interplay between Buddhism, cultural contexts, and suicide mortality rates in diverse regions.

## 6.2 Policy Implications

Various policy implications can be proposed in line with the findings of this study. Firstly, finding immediate solutions to the problem of unemployment is essential, as unemployment can be a devastating issue for some and may lead to depression. More recently, with the invasion of the Covid-19 pandemic in Southeast Asia and globally, one approach undertaken is to ensure people remain employed. For example, the Malaysian government introduced the Wage Subsidy Program 1.0 to 4.0 to ensure that people will be continued to be employed even during difficult times.

Secondly, the rising urban population in major cities such as Jakarta, Bangkok, Manila, and Kuala Lumpur in Southeast Asia may trigger many additional problems. Southeast Asian countries' governments need to ensure that the urban population in capital cities is controlled. One way of achieving this is through employment creation in rural areas by setting up industries there. This, to a certain extent, minimises migration to urban areas where employment opportunities are abundant. It will help alleviate the problems already faced by capital cities in Southeast Asia, such as the housing issues, congestion, and the escalating cost of living.

Thirdly, improving access to health facilities is also essential. It is evident that access to health facilities is not uniform across many countries in Southeast Asia. Most mental health professionals are concentrated in urban areas in Kuala Lumpur and Bangkok. This

uneven distribution of general health professionals and mental health professionals needs to be addressed. Southeast Asian governments need to ensure that access to general health professionals and mental health professionals is made equitable throughout the country so that immediate action can be taken during times of crisis.

Finally, it is a known fact that all religions promote harmony, tolerance, and kindness to one another. Southeast Asian countries' governments need to ensure that a strong religious foundation is given to all citizens from a young age so that when challenges are faced, they can weather them. Positive values from other religions such as love and caring for one another, can be incorporated into lessons conducted in schools.

## 6.3 Contributions of the Present Study

The present study has contributed in the following ways. Firstly, this study has combined time series data (20 observations for each country) for 10 Southeast Asian countries and aggregated this data for a comprehensive analysis. The results provide readers with information related to Southeast Asia as a single entity, especially regarding the determinants of suicide mortality rates. With the recent pandemic that swept across Southeast Asia, Asia, and globally, suicide rates have increased. This study offers insights into those determinants. In the future, using relevant data to capture Covid-19 pandemic-induced suicides will provide more insights into suicide mortality across Southeast Asian countries.

Secondly, the present study utilises a more recently developed regression analysis called quintile regression. This method has several advantages over the OLS method, which

evidently may lead to biased results. The use of median values in quintile regression may offer more reliable and robust estimates compared to the OLS method.

Thirdly, this study contributes to analysing the role of three major religions as determinants of suicide mortality. These religions are Islam (embraced by the majority in Malaysia, Indonesia, and Brunei Darussalam), Buddhism (embraced by the majority in Singapore, Thailand, Cambodia, Lao PDR, Vietnam, and Myanmar), and Christianity (embraced by the majority in the Philippines). This study provides insights into the role of these three major religions as determinants of suicide mortality in Southeast Asia.

Lastly, the determinants of male suicide mortality and female suicide mortality were captured using male unemployment rates and female unemployment rates. In the past, many studies used unemployment rates alone as determinants of mortality. This study provides further insights into the gender dimensions of suicide mortality, which will be useful for future researchers.

## 6.4 Future Research Directions

Future research should explore the role of additional variables, such as digital presence, as determinants of suicide mortality. With improved access to information and communication technology (ICT) throughout Southeast Asia and globally, factors related to suicide ideation can be studied. However, a cross-sectional study will be better suited for this purpose.

Cross-country analysis for comparison purposes should be considered in future studies. While the present study gathered only 20 observations (2000-2019) per country, the

cross-country comparisons were not conducted. Future research should prioritise cross-country comparisons, as they can offer more meaningful insights on country-specific determinants and dynamics. Race variation could also be incorporated into future studies. Multi-racial demographics are inherent in Malaysia, Singapore, and Thailand. Examining race variation could provide additional insights into whether race plays a role in suicide mortality in selected Southeast Asian countries.

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