

**INFORMATION-SEEKING BEHAVIOUR:
TUBERCULOSIS HEALTH-RELATED SOCIAL
MEDIA USAGE AMONG GENERATION Y IN
MALAYSIA**

SARINA HARUN

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**INFORMATION-SEEKING BEHAVIOUR:
TUBERCULOSIS HEALTH-RELATED SOCIAL
MEDIA USAGE AMONG GENERATION Y IN
MALAYSIA**

by

SARINA HARUN

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LIST OF ABBREVIATIONS

| | |
|---------------|----------------------------------------------------|
| AIDS | Acquired Immunodeficiency Syndrome |
| AVE | Average Variance Extracted |
| BCG | Bacille Calmette-Guérin |
| CB-SEM | Covariance-based Structural Equation Model |
| CR | Composite reliability |
| DOTS | Directly Observed Short-course |
| HBM | Health Belief Model |
| HIV | Human Immunodeficiency Virus |
| MCMC | Malaysian Communications and Multimedia Commission |
| MDR-TB | Multi-drug-resistant Tuberculosis |
| MOH | Ministry of Health |
| PLS | Partial Least Squares |
| SCT | Social Capital Theory |
| SDG | Strategy and Sustainable Development Goals |
| SEM | Structural Equation Model |
| SNS | Social Networking Sites |
| SPSS | Statistical Package for the Social Sciences |
| TAM | Technology Acceptance Model |
| TB | Tuberculosis |
| WHO | World Health Organisation |

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**GELAGAT PENCARIAN MAKLUMAT: PENGGUNAAN MEDIA SOSIAL
BERKAITAN KESIHATAN TUBERKULOSIS DALAM KALANGAN
GENERASI Y DI MALAYSIA**

ABSTRAK

Kajian ini mengkaji penggunaan media sosial berkaitan kesihatan Tiba (TB) dalam kalangan Generasi Y di Malaysia. Generasi Y adalah generasi yang paling aktif di media sosial. Walaubagaimanapun, pencarian maklumat kesihatan di media sosial dalam kalangan Generasi Y semakin berkurang dan Generasi Y adalah penyumbang terbesar bagi kes TB di Malaysia. Mengambil kira dari Model Penerimaan Teknologi (TAM), kajian ini menawarkan perspektif teori yang lebih menyeluruh bagi membantu dalam memahami aspek teknologi, yang menyumbang pada literasi tanggapan kemudahan penggunaan dan tanggapan faedah penggunaan media sosial berkaitan kesihatan TB. Selain itu, tanggapan kemungkinan dan tanggapan keseriusan mengenai penyakit TB dan isyarat tindakan dari Model Kepercayaan Kesihatan (HBM) turut menyumbang pada literasi dalam memahami aspek kesihatan. Malah, kajian ini menawarkan pemahaman yang lebih baik dalam memahami aspek sosial dari Teori Kapital Sosial (SCT) yang menghuraikan konsep perikatan sosial dan perhubungan sosial yang wujud dalam media sosial. Selain itu, kajian ini turut menjelaskan konsep sikap dari TAM sebagai perantara antara tanggapan kemungkinan, tanggapan keseriusan, isyarat tindakan, tanggapan kemudahan penggunaan, tanggapan faedah penggunaan, perikatan sosial dan perhubungan sosial terhadap penggunaan media sosial berkaitan kesihatan TB. Empat ratus lima puluh responden telah terlibat dalam kaedah soal selidik dengan mengisi borang Google dalam talian bagi menguji

hipotesis. Data yang telah dikumpulkan dianalisis dengan menggunakan *IBM Statistical Package for Social Science (SPSS) version 23* dan *Partial Least Squares-Structural Equation Modelling (PLS-SEM)*. SPSS digunakan bagi mendapatkan statistik deskriptif responden, manakala PLS-SEM digunakan untuk menguji model penyelidikan. Kemudian, hasil kajian menunjukkan daripada 15 hipotesis yang dicadangkan, 9 daripadanya disokong secara positif manakala 6 lagi tidak mendapat sokongan. Oleh itu, berdasarkan analisis yang dibuat, kajian menunjukkan bahawa tanggapan kemudahan penggunaan, tanggapan faedah penggunaan, perikatan sosial dan perhubungan sosial terhadap penggunaan media sosial berkaitan kesihatan TB mempunyai hubungan yang signifikan, begitu juga apabila diuji dengan kehadiran sikap sebagai perantara. Walaubagaimanapun, tanggapan kemungkinan dan tanggapan keseriusan berkaitan kesihatan TB tidak mempunyai hubungan yang signifikan terhadap penggunaan media sosial berkaitan kesihatan TB, begitu juga apabila diuji dengan kehadiran sikap sebagai perantara. Isyarat tindakan dengan kewujudan media sosial turut menunjukkan hubungan yang tidak signifikan terhadap penggunaan media sosial berkaitan kesihatan TB, begitu juga apabila diuji dengan kehadiran sikap sebagai perantara. Berdasarkan hasil kajian, sumbangan secara teoretikal dan praktikal telah dibincangkan. Batasan kajian juga telah diakui dan cadangan untuk penyelidikan di masa hadapan turut diberikan.

**INFORMATION-SEEKING BEHAVIOUR:
TUBERCULOSIS HEALTH-RELATED SOCIAL MEDIA USAGE
AMONG GENERATION Y IN MALAYSIA**

ABSTRACT

This study examines the use of social media related to Tuberculosis (TB) health among Generation Y in Malaysia. Generation Y is the most active generation on social media. However, the search for health information on social media among Generation Y is decreasing, and Generation Y is the largest contributor to TB cases in Malaysia. Taking into account the Technology Acceptance Model (TAM), this study offers a more comprehensive theoretical perspective to understand the technological aspects contributing to literacy of perceived ease of use, and perceived usefulness of using social media related to TB health. In addition, perceived susceptibility and perceived severity regarding TB disease and cues to action from the Health Belief Model (HBM) also contribute to literacy in understanding health aspects. Moreover, this study provides a better understanding of the social aspects of Social Capital Theory (SCT), which elucidates the concept of social bonding and social bridging existing in social media. Furthermore, this study also explains the attitude concept from TAM as a mediator between perceived ease of use, perceived severity, cues to action, perceived usefulness, social bonding, and social bridging in the use of social media related to TB health. Four hundred and fifty respondents were involved in the online questionnaire survey to test hypotheses. The collected data were analysed using IBM Statistical Package for Social Science (SPSS) version 23 and Partial Least Squares-Structural Equation Modelling (PLS-SEM). SPSS was used to obtain descriptive statistics of the

respondents, while PLS-SEM was used to test the research model. Subsequently, the study's results show that out of 15 proposed hypotheses, 9 of them are positively supported, while the remaining 6 did not receive support. Therefore, based on the analysis conducted, the study indicates that perceived ease of use, perceived usefulness, social bonding, and social bridging in the use of social media related to TB health have a significant relationship, as well as when tested with the presence of attitudes as a mediator. However, perceived susceptibility and perceived severity related to TB health do not have a significant relationship with the use of social media related to TB health, as well as when tested with the presence of attitudes as a mediator. Cues to action with the presence of social media also show an insignificant relationship with the use of social media related to TB health, as well as when tested with the presence of attitudes as a mediator. Theoretical and practical contributions based on the research results have been discussed. The study's limitations have also been acknowledged, and suggestions for future research have been provided.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter offers an outline that includes the research background, the problem statement, the research goals and the research questions. This chapter also addresses the significance of the study. Other than that, the operational definitions and the organisation of this thesis are discussed.

1.2 Background of Study

Tuberculosis or TB mortality in Malaysia increased by 4% in 2018 to 2,184 from 2,098 in 2017. Additionally, TB incidence in Malaysia decreased by only 1.3%, up from 26,168 cases in 2018 to 25,837 cases in 2017 (Bernama, 2019). The 1.3% reduction in morbidity in 2018 is not an ideal outcome for achieving the strategy to end TB by 2035 (Aiman, 2019) of a 95% reduction in morbidity and a 90% reduction in mortality according to the recommendations of the World Health Organization (WHO) (WHO, 2018). Generation Y is the age group with the highest rates of TB infection, with a worldwide number of reported cases of 3.826 million (WHO, 2019). Similarly, the highest reported cases in Malaysia were 9944 in 2018, as reported by WHO (2019). The Bacille Calmette-Guérin (BCG) vaccine, widely used for nearly 100 years to prevent tuberculosis infections in children (WHO, 2017) is still available in many countries, including Malaysia. However, efficacy against pulmonary tuberculosis in adults varies widely (Davenne & McShane, 2016). Therefore, the dissemination of knowledge about tuberculosis must be done more aggressively. This

case was confirmed by Dr Subramaniam, former Minister of Health of Malaysia, on World Tuberculosis Day and World Leprosy Celebration 2018 (Ramli, 2018). In addition, TB cases must be taken into account to prevent spread and death (Diah et al., 2016).

1.2.1 Tuberculosis (TB)

Tuberculosis is an infectious disease caused by the *Mycobacterium tuberculosis* bacillus, causing pulmonary and extrapulmonary tuberculosis such as lymphadenitis tuberculosis and meningitis tuberculosis (Turner et al., 2017). The spread of this bacteria is through the air, such as by sneezing or coughing. About 5% to 15% of the 1.7 billion people infected with *Mycobacterium TB* will develop TB during their lifetime. It is estimated that a quarter of the world's population has latent TB bacteria in the body but is not sick and unknowingly transmits the bacteria to others (Houben & Dodd, 2016). The likelihood of developing TB is much higher in people who are seropositive for human immunodeficiency virus (HIV) and in those with risk factors such as malnutrition, diabetes, smoking, and drinking alcohol (Narasimhan, Wood, MacIntyre, & Mathai, 2013). Assume an individual develops or has symptoms of active tuberculosis such as cough, fever, night sweats, and weight loss. In this case, these would delay the search for health information and subsequently lead to the transmission of the bacteria to others (Viney et al., 2014). This infection will spread to 10-15 closely related people within a year (Sandhu, 2011). However, tuberculosis can be cured and prevented with the right knowledge (Garnett et al., 2016).

1.2.2 TB Worldwide

Tuberculosis has existed for millennia or is the oldest infectious disease in the world and remains a major global health problem (Kashyap & Singh, 2018). It caused health problems for about 10 million people in 2018, a number that has remained stable in recent years (WHO, 2019) as shown in Table 1.1. However, tuberculosis is the 10th leading cause of death worldwide from a single infectious agent, ahead of HIV/AIDS in 2018. Currently, most WHO regions and many high TB burden countries are not in track with the Strategy Milestones target of End TB by 2035. Geographically, most TB cases were in 2018 is in the WHO Southeast Asia Region (44%). Indonesia, bordering Sabah and Sarawak, had the highest number of global TB cases reported since 2013, increasing from 331,703 cases in 2015 to 563,879 cases in 2018 (+70%), with a significant increase of 121,707 cases (+28%) between 2017 and 2018 alone. Thailand bordering Perlis, Perak, Kedah, Kelantan, and the Philippines bordering Sabah are among the 10 countries with the highest number of TB cases, accounting for about 80% of the gap to achieving a TB end strategy to reduce the number of cases by 90% and morbidity by 95% by 2035. Therefore, as a country in the Southeast Asia Region and bordering high TB burden countries, Malaysia should improve the dissemination of TB awareness by considering the relevance and acceptance of Malaysia's dissemination of TB knowledge materials.

Table 1.1 *TB Morbidity and Mortality Rates from 2013 to 2018 in Global.*

| Year | Morbidity | Mortality | Source |
|-------------|------------------|------------------|---------------|
| 2018 | 10 million | 1.451 million | WHO (2019) |
| 2017 | 10 million | 1.6 million | WHO (2018) |

| | | | |
|------|--------------|---------------|------------|
| 2016 | 10.4 million | 1.674 million | WHO (2017) |
| 2015 | 10.4 million | 1.8 million | WHO (2016) |
| 2014 | 9.6 million | 1.5 million | WHO (2015) |
| 2013 | 9.0 million | 1.5 million | WHO (2014) |

Source: WHO (2019); WHO (2018); WHO (2017); WHO (2016); WHO (2015); WHO (2014)

1.2.3. Global TB Cases Classified by Generation Groups

The current generation can be classified into four generations namely Generation Baby Boomers (born in 1943 to 1960), Generation X (born in 1961 to 1981), Generation Y (born in 1982 to 2004) and Generation Z (born in 2005 onwards) (Tung & Comeau, 2014). Each generation has its own learning style to get information. Baby boomers prefer information through mass media (Hilt et al., 2016). In comparison, Generation X, Y and Z prefer to obtain information through social media (Dabija et al., 2018; Francis et al, 2018). However, Generation Y is more interactive in communication and can advise and influence peers better than Gen X and Generation Z (Mishra et al., 2018).

Unfortunately, Generation Y is the highest contributor of TB cases as shown in Figure 1.1, followed by Generation X, Baby Boomers and Veteran, and Generation Z, based on the global data on the classified generation from 2016 to 2018 as studied by Tung and Comeau (2014). In 2016, Generation Y (3.512 million), Generation X (3.32 million), Baby Boomers (2.48 million) and Generation Z (0.79 million). In 2017, Generation Y increased to 4.372 million, Generation X increased to 3.338 million, Baby Boomers decreased to 2.26 million, and Generation Z increased to 0.82 million. All cases for all generations are found to be declining in 2018. However, Generation

Y remains the highest contributor towards TB cases globally (3.512 million) followed by Generation X (3.32 million), Baby Boomers (2.48 million) and Generation Z (0.79 million) (WHO, 2019). Thus, this emphasizes on Generation Y, which is the highest contributor of TB cases globally, to understand the preferred medium on TB health knowledge dissemination by this generation group as it could reduce TB mortality and morbidity in Malaysia.

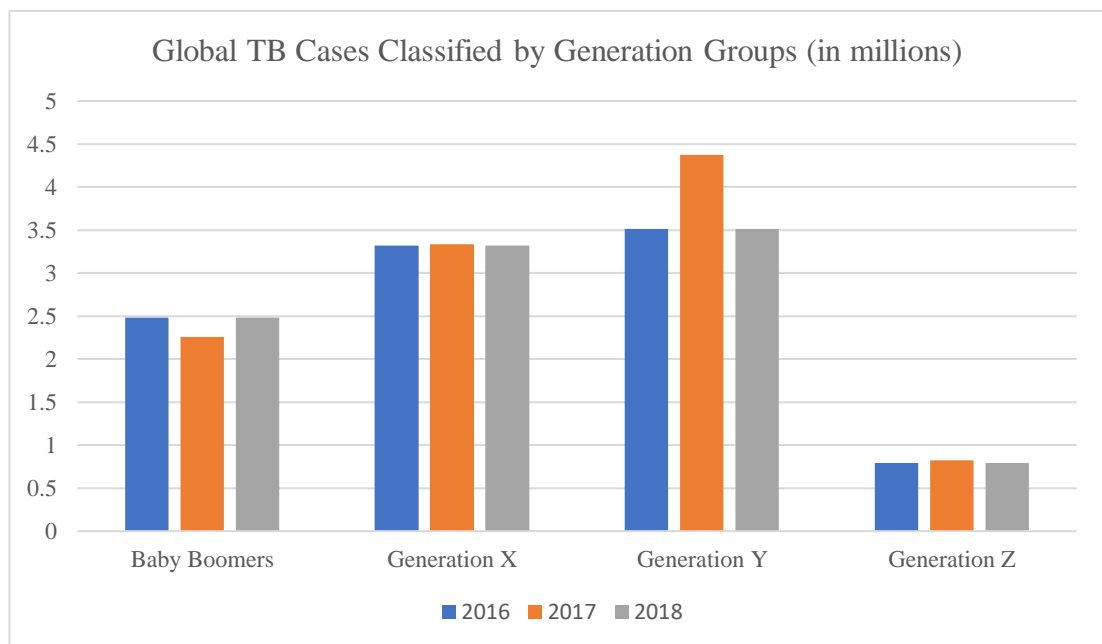


Figure 1.1 Global TB Cases Classified by Generation Groups
Source: (WHO, 2019)

1.2.4 TB in Malaysia

The trend of TB cases in Malaysia is shown in Table 1.2. The morbidity increased by 3% in 2014. However, in 2015, the morbidity rate decreased by 2%. Morbidity increased by 6% in 2016 and 2% in 2017 and decreased by 1.3% in 2018. Mortality increased from 2013 to 2018 (Bernama, 2019). Unstable trends in TB morbidity and mortality should be considered because it is not fast enough to reach the End TB strategy control milestones by 2035 (WHO, 2018).

Table 1.2 *TB Morbidity and Mortality Rates from 2013 to 2018 in Malaysia.*

| Year | Morbidity | Mortality | Source |
|-------------|------------------|------------------|-----------------|
| 2018 | 25 837 | 2 184 | Bernamea (2019) |
| 2017 | 26 168 | 2 098 | MOH (2017) |
| 2016 | 25 739 | 1 945 | |
| 2015 | 24 220 | 1 696 | |
| 2014 | 24 711 | 1 603 | |
| 2013 | 24 071 | 1 597 | |

Source: Bernama (2019) and MOH (2017)

Sabah, Sarawak and Selangor were the top three states that had the highest TB morbidity (Table 1.3) and mortality (Table 1.4) in Malaysia. Indonesia, on the border of Sabah and Sarawak, has recorded the highest number of global TB cases since 2013, increasing from 331,703 cases in 2015 to 563,879 cases in 2018 (+70%), with a significant increase. is 121,707 cases (+28%).) from 2017 to 2018 alone. The Philippines bordering Sabah is among the 10 countries with the highest number of TB cases, accounting for about 80% of the gap to achieving a TB end strategy to reduce the number of cases (90%) and morbidity (95%) by 2035. Selangor is the state with the most immigrants in Malaysia (Unit, 2021c). In addition, a total of 41,607 out of 1.53 million immigrants between 2016 and 2018 did not pass the health screening, although a total of 17,520 people passed the health screening in their home country. A total of 7,197 of these had tuberculosis (Anuar et al., 2022). According to Mohidem et al. (2018), immigrants in high-density areas may accelerate the progression of TB infection in Malaysia. Hence, proper attention is required on the nasty reductions of morbidity and the increase of mortality to achieve the three milestones of End TB

strategy recommended by World Health Organisation (WHO) to reduce mortality, morbidity and the percentage of household WHO (2017).

Table 1.3 *Malaysia TB Morbidity Classified by State in 2018.*

| State | Morbidity |
|-----------------|-----------|
| Selangor | 5 071 |
| Sabah | 5 008 |
| Sarawak | 31 22 |
| Johor | 2 150 |
| WP Kuala Lumpur | 2 017 |
| Perak | 1 546 |
| Kedah | 1 336 |
| Pulau Pinang | 1 228 |
| Kelantan | 1 172 |
| Pahang | 940 |
| Terengganu | 777 |
| Melaka | 622 |
| Negeri Sembilan | 591 |
| Perlis | 134 |
| WP Labuan | 123 |
| Malaysia | 25 837 |

Source: MOH (2019)

Table 1.4 *Malaysia TB Mortality Classified by State in 2018.*

| State | Mortality |
|-----------------|-----------|
| Sabah | 376 |
| Selangor | 375 |
| Sarawak | 240 |
| Perak | 195 |
| Kedah | 154 |
| Pulau Pinang | 151 |
| Johor | 146 |
| Kelantan | 125 |
| WP Kuala Lumpur | 113 |
| Pahang | 91 |
| Terengganu | 70 |
| Melaka | 64 |
| Negeri Sembilan | 51 |
| Perlis | 18 |
| WP Labuan | 15 |
| Malaysia | 2 184 |

Source: MOH (2019)

1.2.5 Malaysia TB Cases Classified by Generation Groups

Classified by generation groups based on Tung and Comeau (2014), Figure 1.2 shows that Malaysian Generation Y cases is the highest contributor to the gap of End TB Strategy from 2016 to 2018 followed by Generation X, Baby Boomers and Generation Z. In 2016, Generation Y (9 960), Generation X (8 560), Baby Boomers

and Veteran (5 780) and Generation Z (60). In 2017, Generation Y decreased to 8 896, Generation X increased to 8 820, Baby Boomers and Veteran increased to 6 620, and Generation Z increased to 116. In 2018, Generation Y increased abruptly to 12 276, Generation X increased to 10 710, Baby Boomers decreased to 5 060, and Generation Z increased to 524 cases. Based on the trend of cases by each generation, it clearly shows that Generation Y is the highest contributor to TB disease in Malaysia. The same thing was reported by WHO (2019). Thus, it is essential to emphasize the appropriate medium as a channel for disseminating TB knowledge, especially for Generation Y in Malaysia.

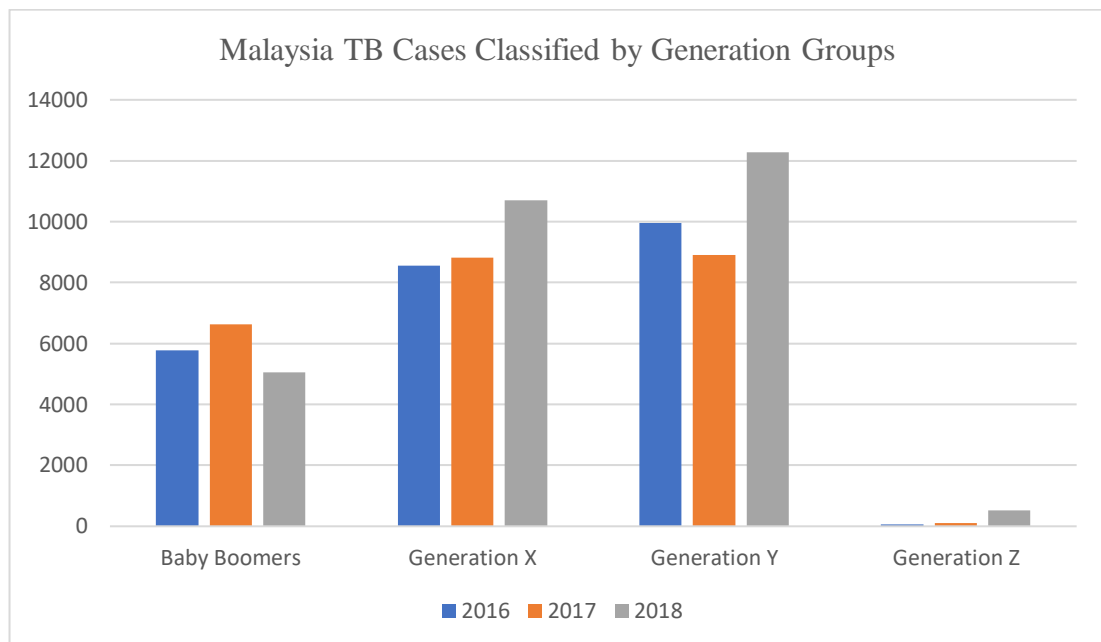


Figure 1.2 Malaysia TB Cases Classified by Generation Groups
Source: (WHO, 2019)

1.2.6 WHO TB Strategy

Global TB report is published by WHO every year (Carter et al., 2018). The global TB report has started on 1997, aiming to provide a comprehensive and up-to-date assessment of TB and the progress in the prevention, diagnosis, and treatment globally (WHO, 2017). The latest global TB strategies are the End TB Strategy

recognized by 194 WHO members during the World Health Assembly 2014 in 2016 to 2035 (Floyd et al., 2018) and Sustainable Development Goals (SDGs) from 2016 to 2030 as set by the United Nations (UN) in September 2015 (Raviglione & Maher, 2017). The End TB Strategy and SDGs share the same goals of ending global TB epidemic with specific targets set by WHO which is 90% reduction of TB mortality and 95% reduction of TB morbidity (Weyer et al., 2017). Furthermore, SDGs has seventeen goals. The third goal is closely related to the requirement of enhancing TB health-related social media usage to disseminate TB health knowledge among Generation Y, which to ensure the TB health information could be delivered to all ages. The goal is to end the global TB epidemic. Besides, there are three main targets in the WHO TB Strategy (WHO, 2017):

1. Reduce the number of TB mortality each year
2. Reduce the number of TB morbidity each year
3. Reduce the percentage of households infected with TB

1.2.7 Malaysia TB Strategy

Malaysia is no longer recognized as one of the TB highest-burden countries today, unlike what happened in 1967, where the number of Malaysians mortality related to TB disease couldn't be controlled (Rahman & Mokhtar, 2015a). Malaysia succeeds in controlling the number of TB morbidity and mortality from the 1970s to 1992 through the National TB Control Program established in 1961 (Aziah, 2004). In line with the declining TB infection and the emergence of new outbreaks such as H1N1 and SARS, public awareness related to TB disease decreases because TB has no longer considered a threat to Malaysians (Jamil, Rosli, Ismail, Idris, & Omar, 2016), as it is not the number one killer disease in Malaysia anymore. Furthermore, Malaysia is

always facing dengue fever issues every year, and this matter indirectly attracts ministries to overcome this disease as the current priority (Ismail et al., 2014). MOH has previously focused on combating communicable diseases such as TB, but currently, MOH focuses more on non-communicable diseases such as heart disease, cancer and diabetes (Geok et al., 2015). Hence, the focus on dealing with TB morbidity and mortality in Malaysia has become less important. It has been found that the lack of adequate knowledge by the Malaysian community may accelerate the progression of TB infection in Malaysia (Jamaludin et al., 2019). As a result, TB cases have been steadily increasing since 2012 (Rahman & Mokhtar, 2015b). Therefore, the spread of TB remains a major public health concern in Malaysia, as our country is not on track to meet the End TB strategy milestones by 2035. (WHO, 2019). As a result, tuberculosis remains a pressing public health problem in Malaysia, even if cases are not high compared to other countries. If transmission continues, the consequences for human life will be a cataclysm (Rajendran, M., Zaki, R. A., & Aghamohammadi, N., 2020).

In 1960, 30 000 Malaysians suffered from TB infection (Rahman & Mokhtar, 2015a). In 1967, TB disease could not be controlled and considered the greatest threat of infectious disease in Malaysia (Iyawoo, 2004). Then, the National TB Control Program was established in 1961 as a vertical program to control the spread of TB among Malaysians. The BCG vaccine was launched in the same year as one of the Program strategies (Liew et al., 2015).

Every state in Malaysia has set up TB troops since 1973. The Ministry of Health (MOH) used to collect data manually and received progress reports containing cases reports every year. However, the electronic database was developed in 2010 and

finally implemented in 2012 (Liew et al., 2015). WHO-recommended DOTS was implemented in Malaysia for special monitoring and treatment with healthcare within six months since 1984 for an impressive follow-up and treatment (Awaisu et al., 2012). Subsequently, the integrated programme was implemented in 1994. The program had changed under the general medical and health system in line with Malaysia's primary care concept. The changes from the vertical program to the integrated program was recommended by WHO (Venugopalan, 2004).

Currently, the National TB Control Program management team is a sector under the Disease Control Division, MOH, Putrajaya. The advisor for the program is the Head of Respiratory Medicine. The National TB Control Strategic Plan 2016-2010 is implemented in line with the World Health Organization (WHO) recommendation through End TB Strategy (D. N. Mohamad, 2017). Here are its three objectives:

- a) Focus on diagnosis and treatment aspects of TB patients.
- b) Focus on political commitment, government agencies, NGOs, medical practitioners, private and community groups in TB prevention activities.
- c) Intensive research and innovation are strongly encouraged to control the spread of the disease.

This study focuses on the third objective, which examined TB health-related social media usage among Generation Y. Through this study, it might enhance TB health knowledge dissemination strategies, especially on social media because 82.3% from 61.8% Malaysians, who are internet users, share online contents to raise awareness about many issues (MCMC, 2018). Thus, it is essential to take this

opportunity by using social media to disseminate TB health knowledge aggressively. Furthermore, technology development has increased significantly on social media (Balka, Krueger, Holmes, & Stephen, 2010). Therefore, it is appropriate for the researcher to focus on TB health-related social media usage. Besides, the younger generation is the most active internet user (Mishra, Maheswarappa, Maity, & Samu, 2018). Similarly, social media is a convenient medium to get health information among the younger generation (De Choudhury, Kiciman, Dredze, Coppersmith, & Kumar, 2016). Thus, it is appropriate for the researcher to study TB health-related social media usage among Malaysian Generation Y.

1.3 Problem Statement

Ministry of Health (MOH) focusing on using brochures, books, posters and bunting for TB health promotions rather than social media (Rahman & Mokhtar, 2015b). Therefore, Generation Y has difficulty for obtaining TB health information via social media which is more convenience for them. Social media is the preferred communication tool for young generation to get health information nowadays (Rahman & Mokhtar, 2015b). It is agreed by Shiratuddin et al. (2016) mentioned that the technology of social media is a new way to engage in an effective communication with Generation Y. It has been found that the use of social media can motivate users to continue using it for health information (Dennison, Morrison, Conway, & Yardley, 2013). Middelweerd, Mollee, van der Wal, Brug, and Te Velde (2014) agree that “ease of use” is a better aid for health educators. In addition, ease of use should help play a positive role in health-related social media use (Lustria et al., 2013). Social media is increasingly acceptable for the convenience of information among Generation Y

(Dickey & Lewis, 2010). Moreover, Generation Y grew up with the technology (Berry et al., 2010) and has been known as the first generation to spend their life with digital environments because of the usefulness (Bennett, Maton, & Kervin, 2008). The usefulness of social media will also enhance medical innovation (Zheng, Padman, Krackhardt, Johnson, & Diamond, 2010). Generation Y is known as the “digitally literate” generation. They were the first to emerge in an environment where health information was widely available on the Internet. Therefore, it is imperative to note the enhancement of TB health knowledge dissemination through social media among Malaysian Generation Y.

Surprisingly, the young generation between the age of 14 to 36 years old, also known as Generation Y, was indicated as the highest contributor of TB disease globally and in Malaysia in 2018 (WHO, 2019). Furthermore, MCMC (2018) mentioned that the use of social media to search for health information among Malaysian Gen Y decreased from 2016 to 2018 (Figure 1.3).

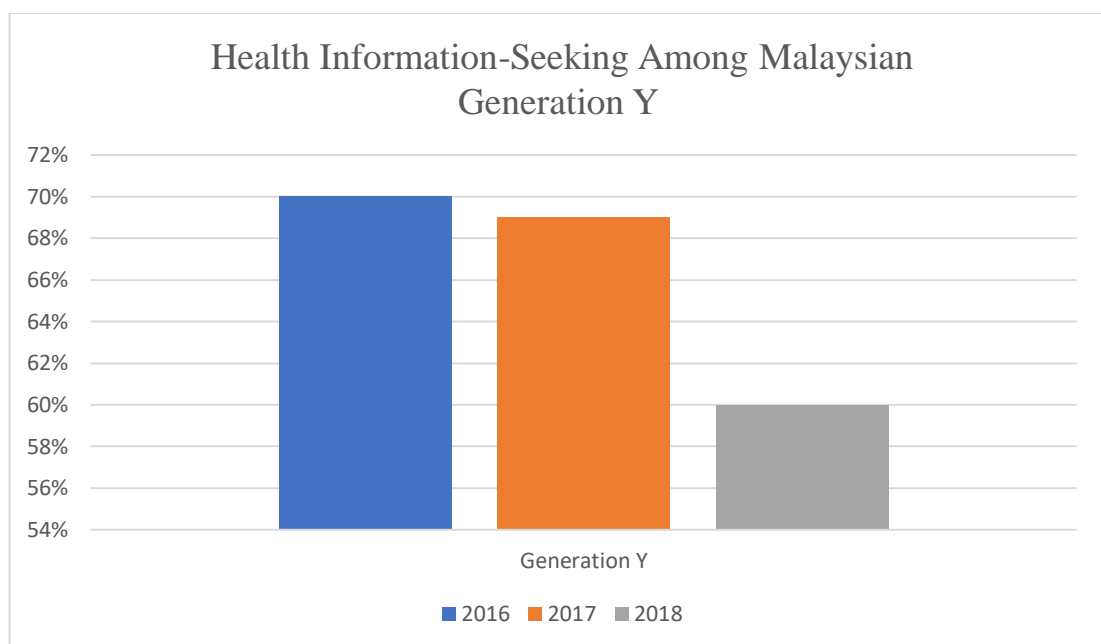


Figure 1.3 Health Information-Seeking Among Malaysian Generation Y
Source: (MCMC, 2018)

In the study by Mokhtar et al. (2012), the young generation claimed to be fully aware of TB disease, but they misunderstood the symptoms and the treatments of the disease. It is agreed by Sanusi et al. (2017), who mentioned that the young generation was not fully aware of TB treatments. Therefore, it is essential to study the reliability and validity of the social media landscape (Rahim et al., 2019). Understanding how to engage Generation Y in relation to health education on social media needs to be explored (T. C. Zhang et al., 2017). Further exploration of factors that could influence Generation Y's social media usage and the authorities' intervention to benefit social media users is still needed (Murray et al., 2016). There is social capital in social media. Social capital in community communication through social media is interesting (Armstrong & Hagel, 2000) for rapidly gathering and disseminating information through interaction (Kane & Fichman, 2009). Furthermore, health is an essential aspect of an individual's life. Participation will thus take advantage of the social capital that exists through the use of social media (Faraj & Johnson, 2011) to find and disseminate health information. Social capital can result from two types of network structures: social bonding and social bridging (Putnam, 2000). According to Nevo and Furneaux (2012), social bridging and social bonding are closely related to the behavior of Internet users. A social bridging is a relationship that provides access to new information with minimal emotional support. In contrast, social bonding is one that provides companionship, emotional attachment, mutual understanding, and emotional support (D. Williams, 2006). Therefore, this study can help the Ministry of Health define a TB health information dissemination strategy on social media to increase TB knowledge among Malaysian millennials.

The MOH official Facebook page has 988 452 followers, and Portal of MOH-MyHealth, which is another Facebook page has 84 197 followers. However, in terms of promoting health on the Facebook account of MOH, the dissemination of knowledge related to TB disease is only done periodically (Rahman & Mokhtar, 2015a). The inconsistency in health promotion is not going to lead to any action to improve healthcare (Proper et al., 2019). Cues to action or trigger in the direction of appropriate health behaviour on social media need to be taken into account because based on Data Reportal (2018), Malaysian generation Y is the highest user on social media. Social media can be used as an external motivator to deliver tailored message to encourage users (Walker et al., 2014). Therefore, it is appropriate to disseminate TB health knowledge via social media for Malaysian Generation Y consistently.

In addition, health care providers face several challenges when turning to the younger generation to provide the best health information (Yonker, Zan, Scirica, Jethwani, & Kinane, 2015). Thus, it is appropriate for the researcher to study TB health-related social media usage among Malaysian Generation Y. Many studies suggest that the healthcare provider page should consider the assessment of consumers' views and feedback to improve the development of health knowledge dissemination (Bernhardt, Lariscy, Parrott, Silk, & Felter, 2002). One-way communication will contribute to the inefficiency of health-related behaviour in society. Therefore, we need two-way communication in health behaviours development (Atherton, Sawmynaden, Sheikh, Majeed, & Car, 2012). Perceived susceptibility and perceived severity have been found in individuals mainly associated with serious illnesses. Perceived susceptibility can be defined as beliefs about the likelihood of disease, while perceived severity can be defined as beliefs about disease

seriousness (Ahadzadeh, Sharif, Ong, & Khong, 2015). Social media users need an effective means of communication (Jalilian, Motlagh, Solhi, & Gharibnavaz, 2014). They need knowledge to reduce disease risk (Parente, Salkever, & DaVanzo, 2005). Perceived susceptibility will influence an individual to seek a positive way to engage in healthy behaviour (Kamal, Fels, & Ho, 2010). Perceived susceptibility also shows better self-management outcomes (Ahola & Groop, 2013). An individual's perceived severity will also contribute to improved self-care (de Vries & Kühne, 2015). Hence, an active medium in disseminating health knowledge is needed, which is social media. Local evidence shows that the information provided about health via social media is useful and reliable. Furthermore, Generation Y spends a lot of time on social media (S. X. Zhang, Graf-Vlachy, Looi, Su, & Li, 2020a). Hence, social media is a helpful variable in targeted health communication related to TB disease especially on Generation Y.

Besides, as the usage of social media is increasing, attitude has been found to be one of the motivational factors that lead towards social media usage (Sharma et al., 2020). Attitude is an important factor in the acceptance and efficiency of technology use (Kalayou et al., 2020). Definitions of attitude have varied over time. The single perspective views attitude as an evaluative judgment of an object in terms of its degree of goodness or badness. Ajzen's (2005) definition of attitude as a "disposition to respond favourably or unfavourably to an object, institution or event. Attitude is a state of mind that takes the benefit of a system for improving the quality of the work they do (Huynh et al., 2020). However, numerous studies have found attitude to be a very poor mediator of actual behaviour such as a study conducted by Nisa et al. (2022). However, some studies also show that attitude is a very good mediator of use, such as

the study by Kim et al. (2017), Chin et al. (2021) and Namahoot et al. (2022). It was agreed by Trivedi et al. (2020) mentioned that attitude has an important direct influence on usage. Therefore, a positive attitude towards social networks to seek health information will determine participation in using social networks. Therefore, attitudes towards TB health-related social media use among Generation Y in Malaysia should be a top priority.

Technology Acceptance Model (TAM) had been used to predict technology usage, but it was ineffective for predicting health-related technology use due to its reliance on two primary factors: perceived ease of use and perceived usefulness (Ahadzadeh et al., 2015). Meanwhile, Health Belief Model (HBM) did not really explain the mechanism or process that leads to the conduct, as HBM attempted to explain the digital or technology adoption purely based on the health perspective (Chawla et al., 2020). From these arguments, researcher argued that TAM or HBM cannot explain the behavioural usage to use social media for TB health-information seeking independently. In this research, TB is deemed as threat to Malaysian Generation Y and TB health-related social media usage can be regarded as a protective health. Social media usage can be viewed as a preventative health behaviour of people in order to spare themselves from the possibility of being infected by TB disease. The involvement of interaction between two individuals and more in social media requires this study to emphasize Social Capital Theory (SCT). TAM and HBM had been investigated by Ahadzadeh (2015), Patil et al. (2022) and Le et al. (2022) without emphasizing social capital in the use of social media. Therefore, this study integrates perceived ease of use and perceived usefulness by TAM, which focuses on the belief of social media usage as well as perceived susceptibility and perceived severity by HBM, which focuses on health prevention and social bonding and social bridging by

SCT, which focuses on social interaction in social media. Combining TAM, HBM and SCT will contribute to the construction of a more comprehensive model that explains TB health-related social media usage among Malaysian Generation Y. This is a new insight on the correlations between TAM, HBM & SCT variables in addressing the identified research gaps. Indeed, numerous studies conducted worldwide have extensively examined the levels of knowledge and stigma surrounding TB infection. These research efforts consistently underscore the limited understanding of the disease among the general population. Furthermore, these studies have shed light on the presence of several misconceptions regarding TB (Chinenye, 2015). Hence, this study seeks to enrich the understanding on TB health-related social media usage among Malaysian Generation Y.

1.4 Research Questions

This study addresses the research as follows:

1. Do perceived susceptibility, perceived severity, cues to action, perceived ease of use, perceived usefulness, social bridging and social bonding influence the attitude towards TB health-related social media usage among Malaysian Generation Y?
2. Does attitude towards TB health-related social media usage influence TB health-related social media usage among Malaysian Generation Y?
3. Does attitude towards TB health-related social media usage mediate the relationship between perceived susceptibility, perceived severity, cues to action, perceived ease of use, perceived usefulness, social bridging and social bonding, and TB health-related social media usage among Malaysian Generation Y?

1.5 Research Objectives

The research objectives of this study are:

1. To examine the relationship between perceived susceptibility, perceived severity, cues to action, perceived ease of use, perceived usefulness, social bridging and social bonding, and attitude towards TB health-related social media usage among Malaysian Generation Y.
2. To examine the relationship between attitude towards TB health-related social media usage and TB health-related social media usage among Malaysian Generation Y.
3. To examine the mediating effect of attitude towards TB health-related social media usage between perceived susceptibility, perceived severity, cues to action, perceived ease of use, perceived usefulness, social bridging and social bonding, and TB health-related social media usage among Malaysian Generation Y.

1.6 Significance of the Study

Overall, this study will be beneficial to the Ministry of Health (MOH), especially in Malaysia, to understand the perception of social media users among Malaysian Generation Y who already use social media to find health information about TB. Attitude towards TB health-related social media usage is critical to sustaining TB health-related social media usage among Generation Y in Malaysia. When Generation Y can feel content using social media to find information about TB health, they will interact more on social media. Thus, TB health knowledge among Generation Y in Malaysia will be enhanced and may have a positive impact on TB morbidity among

Generation Y in Malaysia. In addition, this research is about bringing added value to practice and academia. The study aimed to establish the relationship of attitude towards TB health-related social media usage as a mediator between perceived susceptibility, perceived severity, and cues to action from health belief model (HBM) perception, perceived ease of use and perceived usefulness from Technology Acceptance Model (TAM), social bonding and social bridging from Social Capital Theory (SCT) and TB health-related social media usage. In addition, this research will contribute theoretical and practical knowledge to further benefit the Ministry of Health and the body of knowledge in related fields.

1.6.1 Theoretical Contribution

From the academic perspective is to review current literature which is to evaluate whether or not the independent variables: perceived susceptibility, perceived severity and cues to action from Health Belief Model (HBM) by Rosenstock, Strecher, and Becker (1988), perceived ease of use and perceived usefulness from Technology Acceptance Model (TAM) by Fred D Davis in 1985, social bonding and social bridging from Social Capital Theory (SCT) by Putnam (2000) can influence TB health-related social media usage as a dependent variable by the attitude towards TB health-related social media usage as a mediator. This study donates to the conceptual understanding of the independent variables and mediator required by Ministry of Health (MOH) to disseminate TB health knowledge successfully among Malaysian Generation Y by using social media. Combination of TAM and HBM has been widely used in the context of health and technology studies. Before this, Melzner, Heinze, and Fritsch (2014) had studied perceived ease of use, perceived usefulness, perceived susceptibility, perceived severity, attitude, intention and usage related to mobile health

application. Wahyuni (2017) had studied perceived ease of use, perceived usefulness, intention, and perceived health risk related to acceptance of health services. These studies lack social norms that emphasize technology-related health behaviours. Therefore, this study will focus on integrating technology, health beliefs, and social norms regarding TB health-related social media use among Generation Y in Malaysia.

The research contribution of this study begins with a theoretical contribution, including social capital theory (SCT) by Putnam (2000) which expands the literature on social bonding and social bridging. SCT emphasizes the importance of interpersonal relationships, especially for social media usage (Huang, 2016). Several studies have demonstrated the influence of social norms in the health care system, such as the study by Beldad and Hegner (2018) regarding fitness apps, Jiao, Gao, and Yang (2015) regarding evidence of social norms on social networks, Bugshan, Nick Hajli, Lin, Featherman, and Cohen (2014) are linked to the development of social media in health services and are linked to the social media and health systems. All of these studies have shown that social norms can influence the adoption of technology by communities. Therefore, the social bonding and social bridging aspects derived from Putnam (2000) will be measured in the context of TB health-related social media usage of the Generation Y in Malaysia.

In addition, the Technology Acceptance Model (TAM) incorporates a key value in which attitude mediates between perceived susceptibility, perceived severity, cues to action, perceived ease of use, perceived usefulness, social bonding and social bridging and TB health-related social media use among Malaysian Generation Y. This is to clarify that attitude can influence usage based on a study by Ahadzadeh

et al. (2015). It showed a close relationship between attitude and health-related Internet usage. In addition, the Health Belief Model (HBM) is a critical determination framework to ensure that TB health messages in mass media campaigns reach Malaysian Generation Y to change their health care behaviours. Therefore, this study needs to further develop this model and measure relevant aspects of this model, i.e. perceived susceptibility, perceived severity and cues to action to apply to TB health behaviour among Malaysian Generation Y, on the basis of a study conducted by Wichachai, Songserm, Akakul, and Kuasiri (2016). They mentioned that appropriate use of HBM in communication-related health behaviour research can anticipate disease. Therefore, by examining the relationship between health beliefs, social norms and social network acceptance, this study will determine the views of Malaysian Generation Y on the usage of social media. This finding will expand the existing literature on key factors in improving Malaysian Generation Y awareness of TB health-related social media usage

This study will provide additional insight into these relationships, which may contribute to the improvement and development of this line of research in the future, especially in the Malaysian context. On the other hand, research on TB health-related social media use is still lacking and scattered, especially on perceptions of TB health dissemination through social media. In addition, according to Rahman & Mokhtar (2015a), the government should consider how to conduct effective health education, especially for tuberculosis, to create or raise public awareness. Therefore, this study helps the Ministry of Health (MOH) in spreading knowledge about TB to Malaysian Generation Y. Ultimately, this study contributes to filling the literature gap by examining the mediating role of attitudes, which improves our understanding of trust

in technology, health prevention, and social capital influence on TB health-related social media use of Malaysian Generation Y. Thus, it will contribute to the body of knowledge in this field of study.

The results of this study aim to develop an understanding of social media and the relationship of Malaysian Generation Y to TB health-related social media usage. This study will bring more benefits directly to the Ministry of Health and indirectly to Malaysian Generation Y by providing empirical evidence to demonstrate the relationship between the variables involved. Therefore, this information will be useful for policy making on how to improve TB health education program in Malaysia, especially for Malaysian Generation Y.

1.6.2 Practical Contribution

First, the Ministry of Health (MOH) and Malaysian Generation Y social media users can apply the research results. The MOH should be aware that social media is a practical tool to use for disseminating knowledge about TB health. Indeed, this study focused directly on TB health-related social media usage. The findings of this study provide practical implications for the MOH in carrying out the dissemination of knowledge about TB through social media specifically for Malaysian Generation Y. On the other hand, this study will guide the MOH in further disseminating TB health knowledge through popular social media platforms to achieve good result on TB morbidity among Generation Y in Malaysia. In addition, these findings will help the MOH to develop a good strategy on social media marketing to spread TB health knowledge among Malaysian Generation Y.