



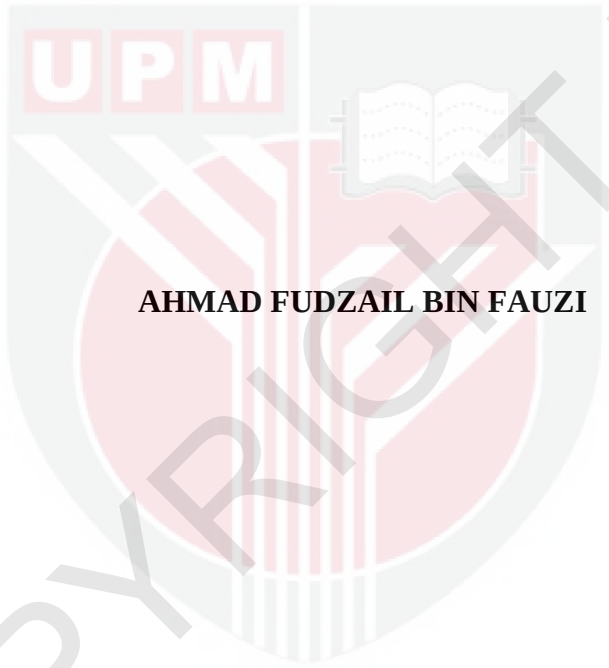
UNIVERSITI PUTRA MALAYSIA

***KNOWLEDGE, ATTITUDE AND PRACTICE ON THE IMPORTANCE
OF GREEN AREA AMONG YOUTHS IN PUTRAJAYA***

AHMAD FUDZAIL BIN FAUZI

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ABSTRACT

KNOWLEDGE, ATTITUDE AND PRACTICE ON THE IMPORTANCE OF GREEN AREA AMONG YOUTHS IN PUTRAJAYA

AHMAD FUDZAIL BIN FAUZI

Objective: This study investigated the relationship between knowledge, attitude and practice (KAP) on the importance of green area among youths in Putrajaya.

Method: This was a cross-sectional study whereby, a (KAP) survey was conducted, involving community from 2 precincts in Putrajaya which are Presint 8 and Presint 9. A validated and pilot-tested questionnaire was distributed to 176 youths and results were analysed using SPSS. The questionnaire consists of four parts (social-demographic characteristic, general questions, (KAP) on the importance of green area, recommendation). The data was analysed by descriptive frequency, Pearson correlation test and Mann-Whitney U test to find the association between KAP on the importance of green area among youths in Putrajaya.

Result: This study found a significant relationship between knowledge towards importance of green areas of Presint 8 and Presint 9 by using Mann-Whitney U test for independence. However, there was no association between attitude and practice on the importance of green area. The findings further showed there is a moderate level of knowledge, attitude and practice towards the importance of green areas. The study discovered that social media is the primary source for information regarding the importance of green areas for them.

Conclusion: According to our findings, respondents have moderate level of knowledge, attitude and practices (KAP) regarding the importance of green area with the mean score of 17.18 for knowledge, 58.87 for attitude and 71.56 for practice. Our preliminary findings can be used as a reference to develop effective health promotion interventions to increase the use of green areas, which would benefit society, the economy and the environment of the country.

Keywords: *Urban Green Area, Knowledge, attitude and practice (KAP), Youth*

ABSTRAK

PENGETAHUAN, SIKAP DAN AMALAN TERHADAP KEPENTINGAN KAWASAN HIJAU DALAM KALANGAN BELIA DI PUTRAJAYA

AHMAD FUDZAIL BIN FAUZI

Pengenalan: Kajian ini mengkaji hubungan antara pengetahuan, sikap dan amalan (KAP) terhadap kepentingan kawasan hijau dalam kalangan belia di Putrajaya.

Metodologi: Ini adalah kajian keratan rentas di mana satu tinjauan (KAP) telah dijalankan, melibatkan komuniti dari 2 presint di Putrajaya iaitu Presint 8 dan Presint 9. Satu soal selidik yang telah disahkan dan diuji rintis telah diedarkan kepada 176 belia dan keputusan dianalisis menggunakan SPSS. Soal selidik terdiri daripada empat bahagian (ciri sosial-demografi, soalan umum, (KAP) tentang kepentingan kawasan hijau, cadangan). Data dianalisis dengan kekerapan deskriptif, ujian korelasi Pearson dan ujian Mann-Whitney U untuk mencari perkaitan antara KAP terhadap kepentingan kawasan hijau dalam kalangan belia di Putrajaya.

Keputusan: Kajian ini mendapati hubungan yang signifikan antara pengetahuan terhadap kepentingan kawasan hijau Presint 8 dan Presint 9 dengan menggunakan ujian Mann-Whitney U untuk perkaitan. Walau bagaimanapun, tiada perkaitan antara sikap dan amalan tentang kepentingan kawasan hijau. Dapatan kajian selanjutnya menunjukkan terdapat tahap pengetahuan, sikap dan amalan yang sederhana terhadap kepentingan kawasan hijau. Kajian itu mendapati bahawa media sosial adalah sumber utama untuk maklumat mengenai kepentingan kawasan hijau untuk mereka.

Kesimpulan: Mengikut dapatan kami, responden mempunyai tahap pengetahuan, sikap dan amalan (KAP) yang sederhana mengenai kepentingan kawasan hijau dengan skor purata 17.18 untuk pengetahuan, 58.87 untuk sikap dan 71.56 untuk amalan. Penemuan awal kami boleh digunakan sebagai rujukan untuk membangunkan intervensi promosi kesihatan yang berkesan untuk meningkatkan penggunaan kawasan hijau, yang akan memberi manfaat kepada masyarakat, ekonomi dan alam sekitar negara.

Kata Kunci: *Kawasan Hijau Bandar, Pengetahuan, sikap dan amalan (KAP), Belia*

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LIST OF ABBREVIATIONS

KAP	Knowledge, Attitude and Practice
SPSS	Statistical Package for The Social Sciences
WHO	World Health Organization
ASEAN	Association of Southeast Asian Nations
DOE	Department of Environment



CHAPTER 1

INTRODUCTION

1.1 Background

Currently, there is no commonly accepted definition of urban green space with respect to its impacts on humans' health and well-being (WHO Regional Office for Europe, 2016). Hunter R.F., Cleary A., and Braubach M. (2019) described that urban green area as areas of the city that are paved in vegetation of some kind and this green area comprises smaller green space amenities as for examples, 'street trees and greenery', non-public or entertainment green areas as an instance, 'greenery and edifices, or private greenery', and broader green spaces with different social and recreational purposes such as 'parks, playgrounds or green-ways'.

Green areas would also include areas with 'natural surfaces' or 'natural environments,' as well as unique forms of urban greenery, including street trees, and 'blues rhythm,' which reflects water elements varying from ponds to coastal regions (WHO Regional Office for Europe, 2016). There are so many definitions that are made by the researchers on green space areas which it could be different to any circumstances. WHO Regional Office for Europe (2016) explains that the meanings are complex and dependent on the situation which they could, for instance, be influenced by the environmental wellbeing mechanisms under some evaluations. Because of over-urbanization and a lack of consideration for environmental preservation, large cities have had a negative impact on avian biodiversity in both developed and developing countries. These regions are typically characterised by low

biodiversity (Nadia, N. et al., 2016). Nath, T. K. et al. (2018) state that in most other regions of the world such as Australia, Europe, North America, the connection of urban green space with well-being has been thoroughly researched. There are several examples of these kind of research findings in tropical regions, particularly in developing countries such as Malaysia (Nath, T. K. et al., 2018). Green areas are increasingly considered to be vital to citizens in terms of balancing their urban living by providing areas for restoration and addressing mental exhaustion and pressure or stress by assisting to mitigate for the negative psycho-physiological results of working and living in dynamically constructed in urban settings (Nath, T. K. et al., 2018; Lee et al., 2015; Zhang et al., 2015; Braubach et al., 2017). Hence, Braubach et al. (2017) state that offering green areas is therefore a solution centred on biodiversity with a range of identified health and medical advantages.

A number of cities all around the world have the renewing impacts of their urban green spaces. According to Yale and Columbia universities, the top ten greenest and cleanest pure air countries in the world are all in Europe which Denmark is the world's largest green country with a total score of 82.50 (2020 Environmental Performance Index | Yale Center for Environmental Law & Policy, 2020). Each and every year, the result of global warming, heatwave records continuing to be broken and keep increased (Jacobo, 2021). Thus, it has become immensely necessary to live a sustainable and environmentally friendly lifestyles. In order to prevent global warming, green areas are needed to be conserved and preserved. Green areas are vital to balance the ecosystems, lower the temperature of surroundings, absorb excessive noise and much more. Example of well-known green areas in worldwide are Uruguay country, Ecuador country and much more that provide sustainable and green lifestyles to the people. Not

only in worldwide, Malaysia also has its own popular green areas such as Perdana Botanical Garden, Kuala Lumpur Bird Park, Bukit Tabur, Kuala Lumpur Butterfly Park and much more that give not only economic benefits to tourism industry but also give health benefits.



1.2 Problem Statement

Despite advancing technology, current society depends on natural resources and services, not just for physically and mentally recovery and cultural and educational values that nature provides to human beings and food availability, but even more significantly clean air, soil conservation, water purification and adaptation to climate change or good disaster management (Włodarczyk-Marciniak, R. et al., 2020; Alcock, White, Wheeler, Fleming, & Depledge, 2014; Kabisch et al., 2016; Liu, Chen, & Peng, 2014; Millennium Ecosystem Assessment, 2005).

Hunter et al. (2019) mentioned that despite the increasing interest in and support for urban green space, nevertheless, the existing information on environmental, health, well-being and equity-related interventions is relatively limited because the effects of these interventions on biodiversity and adaptation to climate change are relatively inadequate. It might be because the mechanisms by which green space could have an effect on climate change are minimal (Hunter, R. F. et al., 2019). In just the last few years, keeping green areas in urban settings such as lush, recreational areas have become increasingly difficult in many cities worldwide (Munyati, C. & Drummond, J. H., 2020; Fuller and Gaston, 2009; Kabisch, 2015). In metropolitan areas, open green areas are now becoming harder to find, and yet many open green spaces have been converted into concrete blocks and bricks, characterised by a decrease in the green open spaces and the domination of physical buildings (Dewi, O. C. et al., 2018).

Several studies (Nath, T. K. et al., 2018; Ulrich, 1981; Takano et al., 2002; Lee et al., 2011; Barton and Pretty, 2010; Bratman et al., 2012; Ward-Thompson et al., 2012; Horiuchi et al., 2013; Jiang et al., 2018; Silva et al., 2018) have documented observable benefits of green spaces to health and well-being, such increased mental well-being, as lowered blood pressure, decreased stress, expanded longevity in the elders, improved sensorimotor functioning, beneficial effects on cognitive functions and psychophysiological conditions, and healthier cortisol patterns. However, green space areas might give some consequences that influence humans' health if not handle and prevent the consequences without any knowledge. Thus, it's very important for the people to actually have knowledge and awareness on the importance of green area to overcome or be cautious on the health consequences of green spaces. For an example, other studies (WHO Regional Office for Europe, 2016; Carlisle & Sharp, 2001) found that where there is green space next to pollution sources, such as heavily trafficking routes, increased exposure of particulate substances, ozone, nitrogen dioxide, sulphur dioxide and other contaminants can be correlated with physical activity particularly within certain climatic conditions. Next, a study which has been conducted in United States reported that pollen in public parks and tress was identified as one of Philadelphia's self-reported asthma triggers (WHO Regional Office for Europe, 2016; Keddem et al., 2015). Another claim made by WHO Regional Office for Europe (2016) explain that continuing to live near green spaces can be linked to increased pesticides and herbicides disclosure, particularly if pesticides and herbicides are being used in unsafe ways and at excess quantities.

The finding from various of previous studies indicate that there was lack of knowledge and awareness on the importance of green area and negative social attitudes

among public especially youths which obviously affect the practice to control and maintain green space areas. Besides, there is less study on knowledge, attitude and practice on the importance of green area being done among communities in Putrajaya. Hence, the purpose of this research is to study the knowledge, attitude and practice (KAP) on the importance of green area among youth in Putrajaya.



1.3 Study Justification

Various studies typically include green space area as public parks and gardens, but they may or may not also include a variety of many other areas, along with other public open space, street trees, sports grounds and recreation centres such as golf courses, private managed and semi-private gardens and other residential open space, roof gardens, urban agriculture, commercial forests, vegetated wading pools, and some other vegetation cover wading pools (WHO Regional Office for Europe, 2016). Klompmaker, J. O. et al. (2018) state that green areas also can indeed be summarized and divided into various categories such as public and private green or into natural, agricultural and urban green areas.

In Malaysia, the knowledge about the importance of green area is somehow limited and people here are generally lacking awareness. They sometimes have no idea or completely clueless on the significance of green areas whether it's man-made or natural. Thus, it will significantly affect the practice on the importance of green area among the communities in a bad way such as mismanagement of green spaces, open burning, improper waste of disposal and much more. Given these gaps in knowledge, this research is focusing on the knowledge, attitude and practice (KAP) on the importance of green area among youth in Putrajaya.

In this study, the target population is to be studied among youth which brings more flexibility to the study. Young people or youths are better defined as a time of transformation from childhood reliance to adult dependence which is as a result, youth

as a classification seems to be more diverse than many other specified age categories (United Nations, n.d.). In addition, United Nations (n.d.) also explain that age is the best way to describe this category (Youth), especially as it relates to education and work, as youths also refer to people between two different phases which is the age of obligatory education and during the moment first job seeking which specifies to ages of 15 to 24. Previously, youth is distinguished of people that are between 15 and 40 years old in Malaysia (Yunus, 2007). However, the National Youth Policy (2015) have redefined youth as being between age of 15 to 30 (UNICEF, 2018). Thus, it is important for young people mainly youth to have knowledge, attitude and practice on the importance of green area in order to take change for better environment and control purpose in the near future. However, only youths aged 18-30 will be the respondents in this study. Other than that, this study only focused on youths as there was a study that shows an outcome, claiming that younger groups perform better in their KAP (Yezli et al., 2019). Youths' seamless transition to autonomous and healthful adulthood, admission into the profession, ongoing performance and efficient parenthood may all contribute to the country's overall security and well-being and the study also mentioned that the success or failure of any cohort of young people as a whole has implications for the stability and advancement of society as a whole (Bonnie et al., 2015).

In order to address this issue, study of knowledge, attitude and practice (KAP) among youth, should be done. This is because this group of people will be the next generation who involve directly or indirectly in control and management of green space area in Malaysia. As a result, it is critical to educate the current and future generations that will be involved in this profession. The purpose of this research is to

ascertain and identify the KAP regarding the importance of green space in order to improve its management and preservation, as well as to present valuable findings that will aid in improvement efforts such as the addition of green space areas in Malaysian urban areas. Additionally, this study may contribute to increasing KAP toward the value of green space among youth, hence raising awareness among younger generations about the necessity of preserving green spaces for improved health and quality of life. Other than that, since there is less study on KAP on the importance of green area conducted in Putrajaya, so this research will help to provide more data and resources for authorities such as Putrajaya Corporations. Other than that, this study can provide data that will serve as baseline for future cohort studies for preservation and conservation of green area in Malaysia.

The Prime Minister has announced during the 2010 Budget that Putrajaya and Cyberjaya are to be established as Pioneer Township of Green Technology as a model for establishment of other townships, and Putrajaya Corporation has since been developing its commitment to reach that goal as a state government for the Region of Putrajaya (Putrajaya Corporations, 2013). Other than that, Putrajaya is a Malaysia's bureaucratic capital, showcases nature-inspired designs that are both practical and effective (Ariffin, M., 2018; Moser, 2010). Last but not least, Putrajaya Corporations (2013) also explains in 'Towards Putrajaya Green City 2025 Report' that the 1994 Putrajaya Grand Plan strongly shows the concept of green technology which is nearly 40% of 4391 hectares was classified as green and open zone, consisting 400 hectares of manmade lake, 200 hectares of wetland and 12 regional parks.

1.4 Objectives

1.4.1 General Objectives

To study knowledge, attitude and practice (KAP) on the importance of green area among youth in Putrajaya.

1.4.2 Specific Objectives

1. To classify the socio-demographic status of respondents.
2. To analyse the level of knowledge, attitude and practice towards the importance of green area among youth from Presint 8 and Presint 9.
3. To determine if there any association between socio-demographic data towards knowledge, attitude and practice of the importance of green area.
4. To determine the association between knowledge and attitude with practice level on the importance of green area.
5. To compare knowledge, attitude and practice on the importance of green area among youth from Presint 8 and Presint 9.

1.5 Hypotheses

1. There is a significant association between socio-demographic data towards knowledge, attitude and practices on the importance of green area.
2. There is a significant association between knowledge and attitude with practice level on the importance of green area.
3. There is a significant difference between youth of Presint 8 and Presint 9 towards knowledge, attitude and practice on the importance of green area.

1.6 Definition of Variables

1.6.1 Conceptual Definition

I. Green area

Urban green spaces are described as areas of the city that are paved in vegetation of some kind and this green area comprises smaller green space amenities as for examples, ‘street trees and greenery’, non-public or entertainment green areas as an instance, ‘greenery and edifices, or private greenery’, and broader green spaces with different social and recreational purposes such as ‘parks, playgrounds or greenways’ (Hunter R.F. et al., 2019).

II. Socio-demographic factors

Socio-demographic factors refer to a group defined by its sociological and demographic characteristics. For example, age, gender, education level, income level and etc (Reference, 2016).

III. Knowledge factors

Knowledge is defined as facts, information and skills acquired through experience or education; the theoretical or practical understanding of a subject (Oxford Dictionary).

IV. Attitude factors

Attitude is a predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation. Attitude influences an individual’s choice of action, and responses to challenges, incentives and rewards (Business Dictionary).

V. Practice factors

Practice is the action of an individual in response to a stimulus. This is something that is usually or regularly done, often as a habit, tradition or custom (Cambridge Dictionary).

VI. Youth

Young people or youth are better defined as a time of transformation from childhood reliance to adult dependence which is as a result, youth as a classification seems to be more diverse than many other specified age categories which specifies to ages of 15 to 24 (United Nations, n.d.). Previously in Malaysia, youth is distinguished of people that are between 15 and 40 years old in Malaysia (Yunus, 2007). However, the National Youth Policy (2015) have redefined youth as being between age of 15 to 30 (UNICEF, 2018).

1.6.2 Operational Definition

I. Green area

In this research, green space that has been the best for researcher's interest is Putrajaya. Respondents are randomly picked from areas that represent Putrajaya (Green area) population as a whole.

II. Socio-demographic factors

Socio-demographic factors will be measured using self-administered questionnaire which consist of information about age, gender and race in Section A of the questionnaire.

III. Knowledge factors

Knowledge factors will be evaluated by using self-administered questionnaire that consist of questions related to the general information about simple definition of green area, benefits of green area, consequences of green area and also the preservation of green area in Malaysia.

IV. Attitude factors

Attitude factors will be evaluated by using self-administered questionnaire consist of questions on the attitude that should be have related to the green area.

V. Practice factors

Practice factors will be evaluated by using self-administered questionnaire that comprises of questions on the practices that should be done to conserve and preserve green area.

VI. Youth

In this research, youth from selected districts in Putrajaya will be the respondents from simple random sampling. The questionnaire will be distributed among them.

1.7 Conceptual Framework

Conceptual framework is defined as a visual or written product, one that explains, either graphically or in narrative form, the main things to be studied. A study of KAP of the importance of green area among youths in Putrajaya was conducted with socio-demographic factors such as age, gender and race were included.

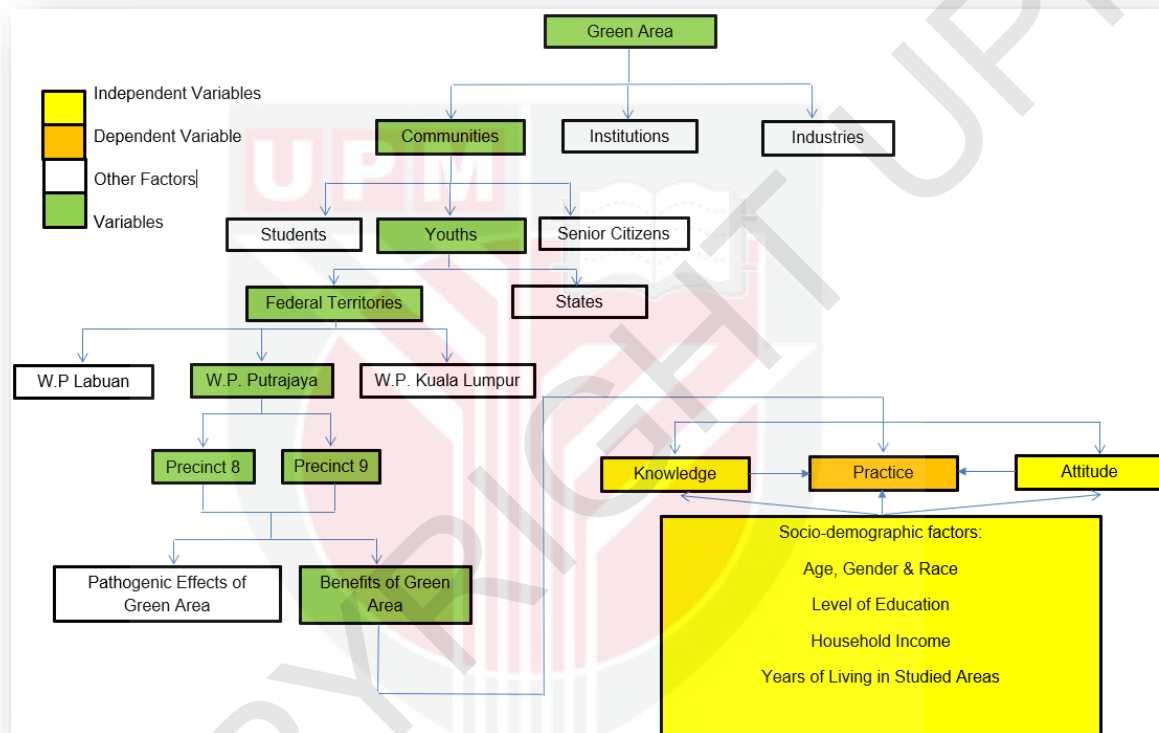


Figure 1.0: Conceptual Framework

CHAPTER 2

LITERATURE REVIEW

2.1 Green Areas

Various studies typically include green space area as public parks and gardens, but they may or may not also include a variety of many other areas, along with other public open space, street trees, sports grounds and recreation centres such as golf courses, private managed and semi-private gardens and other residential open space, roof gardens, urban agriculture, commercial forests, vegetated wading pools, and some other vegetation cover wading pools (WHO Regional Office for Europe, 2016). Klompmaker, J. O. et al. (2018) state that green areas also can indeed be summarized and divided into various categories such as public and private green or into natural, agricultural and urban green areas.

In addition, there is presently no widely agreed concept of urban green space with respect to its impacts on humans' health and well-being (WHO Regional Office for Europe, 2016). Hunter R.F., Cleary A., and Braubach M. (2019) explain that urban green spaces are described as areas of the city that are paved in vegetation of some kind and this green area comprises smaller green space amenities as for examples, 'street trees and greenery', non-public or entertainment green areas as an instance, 'greenery and edifices, or private greenery', and broader green spaces with different social and recreational purposes such as 'parks, playgrounds or green-ways'. Green areas would also include areas with 'natural surfaces' or 'natural environments,' as well

as unique forms of urban greenery, including street trees, and 'blues rhythm,' which reflects water elements varying from ponds to coastal regions (WHO Regional Office for Europe, 2016). There are so many definitions that are made by the researchers on green space areas which it could be different to any circumstances. WHO Regional Office for Europe (2016) explains that the meanings are complex and dependent on the situation which they could, for instance, be influenced by the environmental wellbeing mechanisms under some evaluations.

Furthermore, green areas also can be defined as spaces wherein residents may go for amusement, recreation and physical fitness activities, as well as to just relax and enjoy the calm and tranquillity of nature (Brosens et al., 2008). Taylor and Hochuli (2017) have stated that it really is common, although not necessarily, for greenspace to be composed of plants and to be related with natural components. Green areas in urban settings can be natural and also man-made.

2.2 The General Importance of Green Area

The importance of urban nature and green spaces in promoting residents' health and well-being has long been discussed (Jalkanen, J. et al., 2020; Ayala-Azcárraga, Diaz, & Zambrano, 2019; Cox, Shanahan, Hudson, Fuller, & Gaston, 2018; Ekkel & de Vries, 2017; Norwood et al., 2019). Chiabai, A. et al. (2020) state that the association involving environmental and semi-natural ecosystems, on the present side, and human health and welfare, on the other, has been studied not only by scientists but also by organisations responsible for health promotion and environmental protection. There are two studies (Laan, C. M. & Piersma, N., 2021; Haaland and van den Bosch, 2015) indicate that in urban areas, green spaces are critical for preserving ecosystems, regulating climate, reducing air pollution, and protecting against fire.

Next, green areas are used by locals for leisure, fitness, and recreational activities and there is a connection seen between the availability of green spaces and residents' health and well-being, according to scientific findings (Laan, C. M. & Piersma, N., 2021; Ostoić et al., 2017; Ma et al., 2018; Stewart et al., 2018). In addition, there are several studies (Bonilla-Bedoya, S. et al., 2020; Benedict & McMahon, 2012; Bottalico et al., 2016) state that forests and urban green spaces, also known as green infrastructure, support holistic, systematic approaches to land management, as well as land-use strategy and sustainability activities for both people and the natural environment. In terms of ecology, urban green spaces have attracted a lot of attention in recent times because they can help promote biodiversity and ecosystem resources (Miller, 2005; Tratalos et al., 2007; James et al., 2009; Lugo, 2010; Hostetler et al., 2011; Verboven et al., 2012; Elmqvist et al., 2015; Aronson et

al., 2017; Locke and McPhearson, 2018). Urban parks and green areas contribute numerous directly and indirectly to the prosperity, well-being, social ties and everyday life of people (Abdul Aziz, 2012). Green spaces area are suggested as a determinant of health, enhancing health and well-being with various mechanisms (Rojas-Rueda et al., 2019).



2.2.1 The Effects of Green Areas on Psychological Health

Green areas actually do affect or influence well-being and also mental health. Mental health is a major cause of disabilities worldwide, and there is a growing focus on promoting mental well-being as more of a preventive and society alternatives to the care of mental disease (Wood, L. et al., 2017; United Nations General Assembly, 2011; WHO, 2013; WHO; 2014). Wood, L. et al. (2017) mentioned that despite the fact that mental disease or mental health disorders have been the subject of most studies to date, there is growing international attention in the definition and assessment of good mental health and its relation to other facets of human well-being. In addition, going outside and having exposures to nature are conceptually linked to mental health, and there has been a significant body of research demonstrating this connection (Wood, L. et al., 2017; Kaplan, 2001; Douglas, 2012; Sullivan et al., 2004; Maller et al., 2006; Bratman et al., 2012). Moreover, several studies (Qin, B. et al., 2021; Kardan et al., 2015; Pfeiffer & Cloutier, 2016; White, Alcock, Wheeler, & Depledge, 2013) have found that green areas were proposed as a central aspect of the urban landscape in relation to healthy mental health. A huge range of observational evidence has shown that nearby exposure benefits for emotional well-being and prevents mental illnesses (Liu, Y. et al., 2019; Astell-Burt et al., 2014, Cohen-Cline et al., 2015, de Vries et al., 2013, Gascon et al., 2018, Helbich et al., 2018, Helbich et al., 2019, Sarkar et al., 2018, Sugiyama et al., 2008). (Vujcic, M. et al., 2019; Annerstedt et al., 2012; Richardson et al., 2013; Bratman et al., 2015) It has been well established that daily access to healthy, local, and high-quality green spaces promotes increased physical exercise and also improves mental health

Several studies have shown that proximity to green space has various clear advantages, including reducing negative thoughts, gives more concentration or focus, restorative feeling, and accelerating both stress and care fatigue recovery (Qin, B. et al., 2021; Bowler, Buyung-Ali, Knight, & Pullin, 2010; Hartig, Evans, Jamner, Davis, & Gärling, 2003; Kaplan, 1995; Ulrich, 1984). Other than that, Berg et al. (2007) also found that unintended passive green space interaction influences the neurological mechanism of restoration, blood pressure reductions and mental stress. Besides, there are some research (Qin, B. et al., 2021; De Vries et al., 2013; Koohsari et al., 2015) that conclude green areas can promote outdoor activities, including running, cycling, even walking and other sports that give mental or cognitive advantages. Equally important, Hartig et al. (2003) having contact with natural environments can increase physical and emotional benefits and lowering blood pressure. Thus, the promotion of physical activity is therefore considered as a mediator for the combination involving green space and mental well-being (Qin, B. et al., 2021; Richardson, Pearce, Mitchell, & Kingham, 2013; Sugiyama, Leslie, Giles-Corti, & Owen, 2008).

Thompson Coon et al. (2011) have proved that performing of physical exercise in a green space environment contributes to increased feelings of reinvigoration while relieve stress, frustration, rage and also distress. Green areas could also foster social gatherings by offering gathering areas for community events including talks, group activities, picnics and other (Qin, B. et al., 2021; Maas, Van Dillen, Verheij, & Groenewegen, 2009), and also good social networks and associations are linked to a range of better health results (Qin, B. et al., 2021; Berkman, Glass, Brissette, & Seeman, 2000; Hawe & Shiell, 2000). Lastly, Grahn and Stigsdotter (2003) state that regular green spaces trips have been shown to relieve tension.

2.2.2 The Effects of Green Areas on Physical Health

Green areas have been shown to minimise the likelihood of a variety of negative health effects through a variety of methods, which include physical exercise (Klompaker, J. O. et al., 2018; James et al., 2015). Next, a study by Biddle, S. J. (2004) indicates that Individuals who walk frequently or do physical activities in green areas are less likely to become obese and have greater bone health which lowering their risks of getting osteoporosis. In addition, by providing appropriate environments that promote physical exercise, green areas can greatly reduce the chance of being overweight and obese (Klompaker, J. O. et al., 2018; Hartig et al., 2014; Lee and Maheswaran, 2011). Another study from Nielsen and Hansen (2007) has identified that near access to and the use of green space has been shown to support youngsters in overcoming obesity issues. Thus, it's important to highlight that physical inactivity or inactive physical behaviours and being obesity or overweight are significant risks for non-communicable diseases such as mental illness, diabetes and cardiovascular diseases (Klompaker, J. O. et al., 2018; Lachowycz & Jones, 2011). Therefore, green areas serve as a natural preventive tool that promotes healthy lifestyles and provide sufficient oxygen and also greenness to nearby communities.

Additionally, physical exercise is vital for body health preservation and development (Romagosa, F., 2018; Bedimo-Rung et al., 2005, Blair and Brodney, 1999, Hardman and Stensel, 2003, Rosenberger et al., 2009, Scully et al., 1998). After that, other several studies (Huang, B. et al., 2021; Dzhambov et al., 2018b; Jia et al., 2018; Markevych et al., 2014; Ochiai et al., 2015; Park et al., 2010; Sung et al., 2012; Xie et al., 2018) have found that residences' greenness might have had a preventive

effect towards hypertension or elevated blood pressure, according to a growing number of quantitative and laboratory research studies previously. Moreover, people would choose to do physical activity in green space areas more rather than other places as a number of studies have found that physical exercise rates in green spaces can be higher than the one at homes (Romagosa, F., 2018; Barton, Hine, & Pretty, 2009; Bird, 2004; Giles-Corti et al., 2005; Godbey, 2009; Mitchell, 2013; Oftedal & Schneider, 2013; Pretty et al., 2007; Ryan et al., 2010; Thomson Coon et al., 2011). Thus, people from any communities would definitely choose to have physical activity in green areas and it will increase the rate of physical activity in places where green areas are available. Last but not least, a number of studies (Ho, J. Y., 2021; Gascon et al., 2016; Nieuwenhuijsen, 2018; Nieuwenhuijsen et al., 2017) elaborate that green areas have been linked to positive health benefits which include all death rates, cardiovascular disease, and psychological well-being, amongst many other things.

2.2.3 The Effects of Green Areas on Social

Greenways or green areas have indeed been proposed as contributes to community cohesion by motivating people to engage in social interactions and by offering spaces and also platforms for people to interact with one another (Wan, C. et al., 2021; Elands et al., 2018; Swanwick, Dunnett, & Woolley, 2003). In communities, green areas have been served as places for gathering and any casual activities in neighbourhood settings. A study by Sullivan et al. (2004) has concluded that green areas have become people's choice to do any social events instead of spending time indoor. Another study by Enssle, F. and Kabisch, N. (2020) has found that cultural environmental services offered by green areas such as recreational areas, graveyards, allocations and urban parks, urban woods, and other areas involve providing a place for recreation, sporting activities, relaxation, enjoyment and learning from natural world, as well as meeting with family members and friends, hence raising the cohesion in communities. In addition, positive connections have been identified between green areas in general neighbourhood and in regards to social engagement with the citizens (Cohen, D. A. et al., 2008). Several studies (Enssle, F., & Kabisch, N., 2020; Mytton et al., 2012; Sugiyama and Thompson, 2007; Takano et al., 2002) have elaborate that green areas also can help senior citizens which its presence or existence encourages them to be much more reasonably active in physical activity. Moreover, local green areas provide places for diverse ethnic communities to unwind and enjoy the outdoors (Peters et al., 2010).

2.2.4 The Effects of Green Areas on Environment

Green infrastructures serve as bridges between pollution sources and pedestrians on roads, preventing emissions from quickly flowing towards people due to aerodynamic forces and as just an impressive result, air travelling through plants or green areas is filtered by precipitation (Moradpour, M., & Hosseini, V., 2020; Brantley et al., 2014; Tiwary et al., 2008; Tong et al., 2016). In addition, it is also vital to highlight that green areas are parts of urban form that include a significant volume of plants, which several number of studies (Moradpour, M., & Hosseini, V., 2020; Baumgardner et al., 2012; Nowak et al., 2006; Selmi et al., 2016) have found that, it improves aerodynamic efficiency and accumulation effects of trees, as well as improving air quality at the city level. Lastly, green areas in cities have initially been acknowledged as being beneficial to the ecosystem and communities by increasing the quality of local living spaces and also contributing to environmental protection by absorbing emissions such as carbon and engaging in climate regulation (Du, M. & Zhang, X., 2020). Green areas is very important where it aids in slowing the movement of rain down dramatically while also retaining some of the water that falls (Haliza Abdul Rahman, 2022). Whenever this "seepage area" is no longer present, muddy water seeps into the ground, eroding the soil and resulting in landslides and flash floods. So, green area should be kept up because floods and landslides happen all too often in this country.

Pertahan kelestarian hutan demi warisan masa depan



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Hutan membekalkan sumber dan perkhidmatan tidak ternilai kepada manusia bagi meneruskan kelangsungan hidup. Malangnya, ramai mungkin belum dapat menilai kepentingan ekosistem ini dan keperluan mempertahankannya. Pemeliharaan hutan simpan kekal amat penting bagi menjamin peranan hutan dalam memastikan kestabilan alam sekitar dan sumber bekalan air bersih, selain memelihara sumber biodiversiti, kawalan hakisan tanah, pemeliharaan dan pemuliharaan spesies flora dan fauna, sekali gus menjaga aktiviti ekolangan.

Di Pahang misalnya, terdapat 28 kawasan hutan lipur menjanjikan daya tarikan, keunikan dan keistimewaan tersendiri dengan menjalankan aktiviti seperti perkenalan, merentas hutan, mandi manda, berkelah serta berkhemah.

Dari segi alam sekitar, peranan hutan dalam menstabilkan iklim dunia dan penebat kepada pemanasan global memang diakui. Penebat hutan menyumbang 12 hingga 20 peratus pelepasan gas rumah hijau global, mengakibatkan perubahan iklim.

Pembukaan naungan sila (rimbunan daun pada bahagian atas pokok) dan pemsanahan tumbuhan hutan akan mengubah rejim suhu tanah yang mempunyai implikasi penting terhadap aktiviti hidupan mikro, selain menyebabkan penurunan kelembapan relatif yang meningkatkan suhu di kawasan berkenaan.

Walaupun fotosintesis kelihatan seperti proses mudah, tetapi sangat penting kerana pokok dan hutan boleh mempengaruhi iklim, seterusnya memberi kesan kepada cuaca. Pokok mampu menyerap lebihan karbon dioksida di atmosfera dengan 0.4 hektar pokok matang boleh menyerap karbon dioksida dikeluarkan 26,000 batu kereta secara puratanya.

Kajian ahli klimatologi bandar juga mendapati berlaku pengurangan suhu pada waktu tengah hari antara 2 hingga 3 darjah Celsius di bawah pokok berbanding kawasan terbuka. Kajian saintis turut membuktikan satu ekar tanah diliputi pokok mempunyai kadar pelepasan oksigen yang mampu menampung keperluan 18 orang selama setahun.

Malah, ekosistem hutan juga sangat penting untuk melindungi negara daripada bencana alam seperti banjir, tanah runtuh, kemarau dan hakisan. Hutan paya laut misalnya, berperanan penting dalam menjamin kawasan pesisiran pantai termasuk berfungsi sebagai benteng semula jadi untuk menahan serta mengurangkan daya kekuatan pukulan ombak, hakisan tanah penehan semula jadi kepada tiupan angin kencang. Hutan tanah tinggi pula membantu memperlahankan pergerakan hujan menurut curam dan pada waktu sama mengekalkan sebahagian daripada air berkenaan. Apabila kawasan resapan ini tiada, maka wujud air berlimpur mengakis tanah yang berakhir dengan tanah runtuh serta banjir kilat.

Dengan negara kini sering dilanda bencana seperti banjir dan tanah runtuh, maka wajar hutan dikekalkan kelestariannya.

Hutan turut berfungsi sebagai tempat perlindungan semula jadi bagi Orang Asli. Mereka dapat menyara hidup melalui sumber hutan sejak beribu tahun dengan kegiatan seharian mereka amat bergantung kepada hutan.

Selain itu, ekosistem hutan menyumbang secara signifikan kepada pembangunan sosioekonomi negara dari segi pendapatan pertukaran asing, hasil kerajaan, pelaburan dan peluang pekerjaan. Malaysia mencapai jumlah eksport kayu dan produk kayu RM7.81 bilion antara Januari hingga Oktober 2020. Perabot kayu kekal penyumbang utama dengan nilai RM8.38 bilion, diikuti papan lapis (RM2.36 bilion), kayu gergaji (RM1.97 bilion) dan tanggam pada nilai RM800.7 juta.

Malah, jumlah hasil hutan dipungut daripada royalti, premium dan sumber lain seperti hukuman, denda serta pampasan berkaitan perhutanan, lesen dan perkhidmatan perhutanan turut menyumbang pendapatan tambahan kepada kerajaan.

Hutan juga penting sebagai sumber keluaran hasil hutan bukan kayu yang mempunyai kegunaan berlainan. Ia termasuk rotan, buluh, mengkuang dan pandan, tumbuh-tumbuhan pewarna, damar dan lain-lain. Manau (*Calamus manau*) rotan paling popular diperdagangkan dan berharga tinggi. Walaupun industri kayu dan produk kayu berjaya mengekalkan prestasi stabil, ia bagaimanapun tidak harus memusnahkan hutan di Malaysia.

Ketua hak asasi Pertubuhan Bangsa-Bangsa Bersatu (PBB), Michelle Bachelet, berkata "tiga krisis planet" iaitu perubahan iklim, pencemaran dan kehilangan alam semula jadi melambangkan ancaman terbesar ke atas hak asasi manusia sejagat.

Justeru, pengurusan cekap dan penggunaan sumber hutan mampan penting dalam mencapai pembangunan lestari dan memastikan kesejahteraan alam sekitar.

Namun, sebagai negara membangun, Malaysia menghadapi pelbagai cabaran dalam pemeliharaan hutan. Keterancaman hutan didorong tindakan dan perilaku manusia yang bersikap tamak demi kepentingan diri sendiri sehingga menjajaknya.

Aktiviti berisiko tinggi seperti pembalakan dan pengusahan hasil tidak lestari, perubahan guna tanah hutan kepada pembangunan dan pembinaan infrastruktur menimbulkan pelbagai kesan dan merusaknya kepada kemusnahan ekosistem serta kepelbagaian biodiversiti.

Fragmentasi hutan dilemapi membawa ancaman serius terhadap pemuliharaan hutan dan perlindungan biodiversiti. Sebanyak 70 peratus spesies haiwan, serangga dan tumbuhan hidup di hutan tidak dapat meneruskan kehidupan akibat penebatan hutan.

Apabila hutan dimusnahkan, hidupan liar kehilangan habitatnya, selain menyebabkan banyak haiwan, serangga dan tumbuh-tumbuhan pupus. Ini membahayakan dan berpotensi membawa kesan besar kepada kesejahteraan manusia.

Di Selangor misalnya, Hutan Simpan Bukit Cherakah yang diwariskan pada 1909 seluas hampir 9,642 hektar diujah warta beberapa kali sejak 1976 bagi tujuan pembangunan. Kini, Hutan Simpan Bukit Cherakah yang masih kekal hanya seluas 1,296.86 hektar.

Hakikatnya, negara khususnya kerajaan negeri mempunyai tanah cukup untuk pembangunan dan hutan simpan tidak harus dipersempit lagi bagi tujuan komersial.

Penebatan hutan secara tidak lestari menyumbang hakisan tanah, pemendapan, kerosakan erusi dan tanah runtuh di Malaysia. Pemsanahan hutan di kawasan tadahan air pula menjejaskan bekalan air dan kualiti sumber air, menjejaskan kemampuan pengambilan semula air bawah tanah dan menyebabkan lebih banyak banjir di kawasan tanah rendah.

Pembalakan di kawasan hutan pula memberi kesan langsung kepada kitaran tanah dan hidrologi, kerana pengurangan penutupan pokok menyebabkan peningkatan larian air dan hakisan tanah yang menyumbang kepada peningkatan bencana banjir, seperti berlaku di Pahang.

Diikuti proses pembangunan negara penting, namun perlu bijak tanpa memusnahkan hutan yang amat berharga. Justeru, pembangunan keterlaluan hingga mengorbankan hutan wajar dihentikan.

Memastikan keseimbangan antara pembangunan dan pemeliharaan alam bukan mudah. Tambahan pula, Malaysia bergantung sumber kayu sebagai sumber pendapatan. Satu satunya cara untuk mencapai keseimbangan adalah dengan menguruskan sumber secara lestari dan apabila ia membabitkan kayu, pensijilan adalah kuncinya.

Akhirnya, penyertaan terbuka dan telus semua pihak berkepentingan termasuk masyarakat Orang Asli dan masyarakat setempat penting untuk memupuk pengiktirafan hutan sebagai sumber warisan negara yang mesti dihargai, bernilai dan dipulihara.

Hanya dengan kesedaran mengenai kepentingan khazanah warisan negara ini dapat menyelamatkan hutan dan memastikan ia terus terpelihara kerana kita semua menikmati faedah daripada fungsi hutan.



Figure 2.0: Newspaper Cuttings About Importance of Green Areas

2.2.5 The Effects of Green Areas on Economy

The relation of a property to green areas, parks and many other green infrastructures has a significant impact on its valuation or its value. A city that has green areas is discovered to make its citizens healthier, could reduce demands on health services and assisting in the development of a better economy (WHO Regional Office for Europe, 2016). Furthermore, Jim and Chen (2006) have conducted a study in Hong Kong where the study has found that having a sight of green spaces and being nearby to water bodies increased property prices by 7.1 percent and 13.2 percent, correspondingly. In addition, there was research in Finland that discovered that green areas near residences can increase the value of a property by 5% to 6%, according to study (Tyrväinen and Miettinen, 2000; Tajima, 2003). Not only in Hong Kong and Finland, there's also a study conducted by Miller (2001) in United States of America (USA) which is in Dallas, Texas to be exact that has discovered that properties with views of 1 of 14 parks in the region were worth 22% more than residences less than a mile from the park or green areas. Finally, residential property prices in residential areas with landscaped compounds were 18.1 percent higher than in areas without environmental components in Malaysia (Tan, 2011).

2.3 Legislations, Policies and Governance Related on Green Areas in Peninsular Malaysia

The Town and Country Planning Act of 1976 (Act 172), as well as its revisions or amendments 1995 (Act A933) and in 2001 (Act A1129) are in general governed the legislations on planning of land usages in Peninsular Malaysia. Indeed, the Town and Country Planning Act acknowledges and safeguards the critical nature of public open space such as green areas, as a type of special necessary infrastructure in a growth or developing regions. The main purposes of planning on land usages are to arrange land uses pattern in a way that is consistent with and long-lasting or sustainable over numerous elements of the development cycles which in details consist of the establishments of open spaces such as green areas and also recreational areas. Apart from this, the Town and Country Planning (Act A933) describes ‘open space’ as “any land whether enclosed or not which is laid out or reserved for laying out wholly or partly as a public garden, park, sports and recreation ground, pleasure ground, walk or as a public place”.

In addition, the National Urbanization Policy (NUP) is one of the vital policy actors where it acts as Federal Town and Country Planning Department's endeavour to manifest the direct development in accordance with the 9th Malaysia Plan and the National Vision. Enhance the efficacy and value of municipal infrastructure in order to create safer, more modern, and aesthetically pleasing cities are the main purposes of the NUP. Lastly, the NUP consists of 6 ‘pillars’ where one of them highlights on the development of sustainable urban settings with a distinct character, with a focus

on environmental protection and urban living quality (National Urbanisation Policy, 2006).

Other than that, one of another vital policy actor is the National Landscape Department (NLD) where it was tasked with the details of landscaping and greening the nation, only following the approvals by the Economic Planning Unit (EPU) where NLD was founded in 1996 together under auspices of the Local Government with the Ministry of Housing. As an example, the NLD needs to develop a National Landscape Policy which then needs to launch the development of a Landscape Master Plan for each city in the nation (Kuala Lumpur Landscape Master Plan, 2002).

2.4 Preservation and Management of Green Areas

It's vital to take a good care of green areas as the areas provide numerous numbers of health benefits to humans, flora and fauna and also bring sustainability to the ecosystems. Public plays a very important role on preservation of green areas. To maintain green areas as clean as possible, residents or individuals who visit the green areas are need to throw garbage in the appropriate place, making sure that the green areas are clean after recreational activity, pick and throw the garbage that is surrounding the green area into the dustbin. Apart from this, public needs to take precautions on any damaging acts to green areas such as don't do anything that could destroy the green areas such as doing an open burning, bring their own container for drinks and food that could be reused so that it'd would reduce the amount of total garbage that might pollute green areas and also public needs to report to authorities if they see any damaging acts to green areas.

Environmental management in urban settings is clearly linked to and greatly influenced at national level by environmental management policy. At this level, a particular focus is on the Environmental Quality Act of 1974 with its many statutes relating to the environment, regulations and guidelines are very vital for managing environmental areas including green areas (Akmar, A. A. N et al., 2011). Government needs to re-examined back the act and its regulations to give an optimal care for environment. Other than that, stronger enforcements are also needed in implementing the act.

2.5 Green Areas and Natural Disasters

Green areas have many trees and plants that would act as a defence system to natural disasters. Without plant and trees, there would be many consequences on the environment where it is believed that diminished greenery will increase the chance of runoff of surface water, erosion of soil and a surge in both river and also sea levels in the long term (Loh & Yeo, 2022). Another article by Tijssen (2014) explains that green areas have an important function in water containment, which may help to decrease the consequences of heavy rainfall downstream. Hence, could prevent flash floods from happening.

Other than that, following the tsunami, it has been confirmed that at the very least well-established mangrove ecosystems and seaside tree plantings provided an effective natural border against the tidal surges, therefore saving lives and property in certain instances (Çelik, 2008).

CHAPTER 3

METHODOLOGY

3.1 Study Design

A cross-sectional study has been conducted in this research. This study has used knowledge, attitude and practice (KAP) to assess correlation with the importance of green area among youths in Putrajaya.

3.2 Study Location

This study involves two green neighbourhoods in Putrajaya, namely Presint 8 and Presint 9. Putrajaya has been established as Pioneer Township of Green Technology as a model for establishment of other townships or to be called as a model for showcase to be set as an example for other cities, said by Prime Minister in 2010 Budget (Putrajaya Corporation, 2013). It has become bureaucratic capital that displays nature-inspired designs which are both practical and also effective (Ariffin, M., 2018; Moser, 2010), which was perfect for this study. In addition, Presint 8 and Presint 9 have been chosen as the specific study location because as stated by Putrajaya Corporation (2018) in 'Putrajaya Low Carbon Green City Initiatives Report' that both of the precincts have implemented Putrajaya Urban Farming Programme in their own community farms which multiple series of rock melon cultivations have been done. Other than that, there were 123 plants or trees planted in two locations (Sisiran tasik & monorail bridge area) which were both in Presint 8 under a program that is called 'Pledge and Plant a Tree Programme' in 2017, organised by Malaysian Institute of

Planners which Putrajaya Corporation was in line to participate in making Putrajaya as a low carbon and green city (Putrajaya Corporation, 2018). Both of the precincts are edged with the same lake but with different names where the lake is manmade and have multiple recreational space surround it for people to do outdoor activities like cycling, running, social activities and much more. Presint 8 is edged with Lakeside Putrajaya while Presint 9 is edged with Putrajaya Lake where both lakes are actually connected. In addition, there's a nearby botanical park to both Presint 8 & 9 which is Taman Botani Putrajaya that's located in Presint 1. Other than that, both of the precincts have its own multiple recreational parks with residential areas which are very suitable for this study.

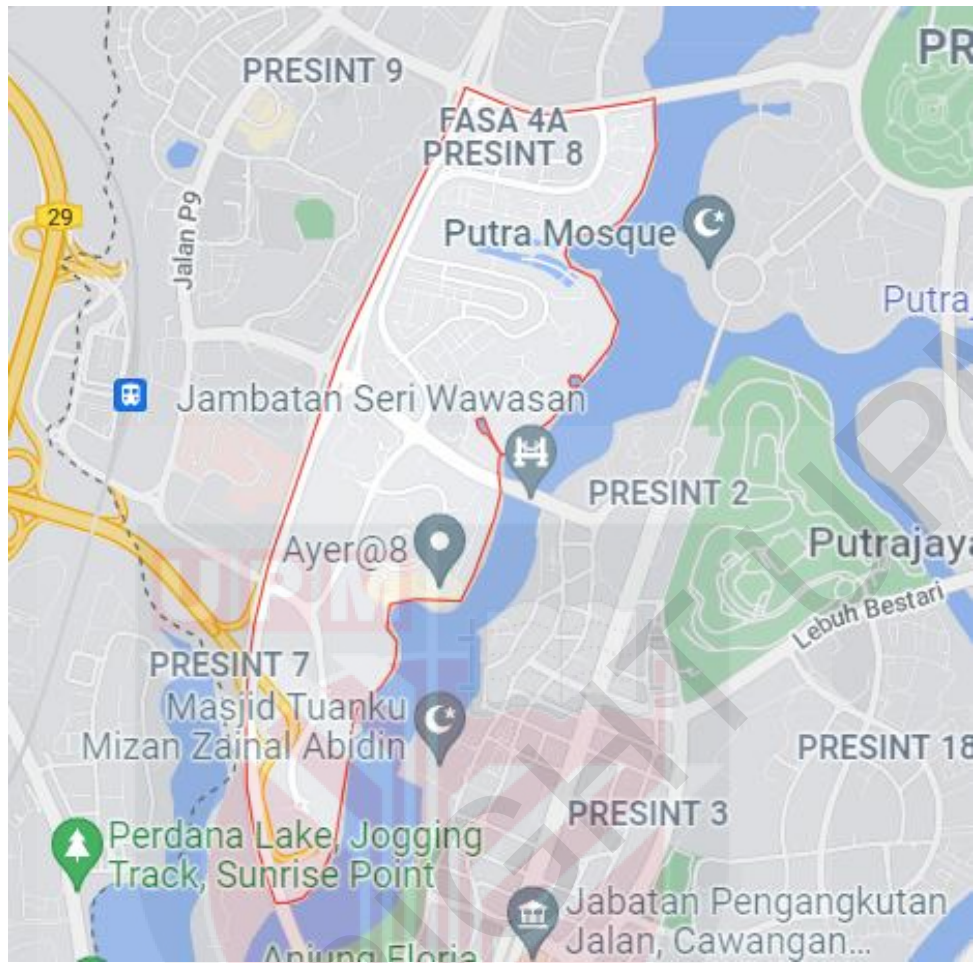


Figure 3.0: Presint 8 (Source: Google Map)

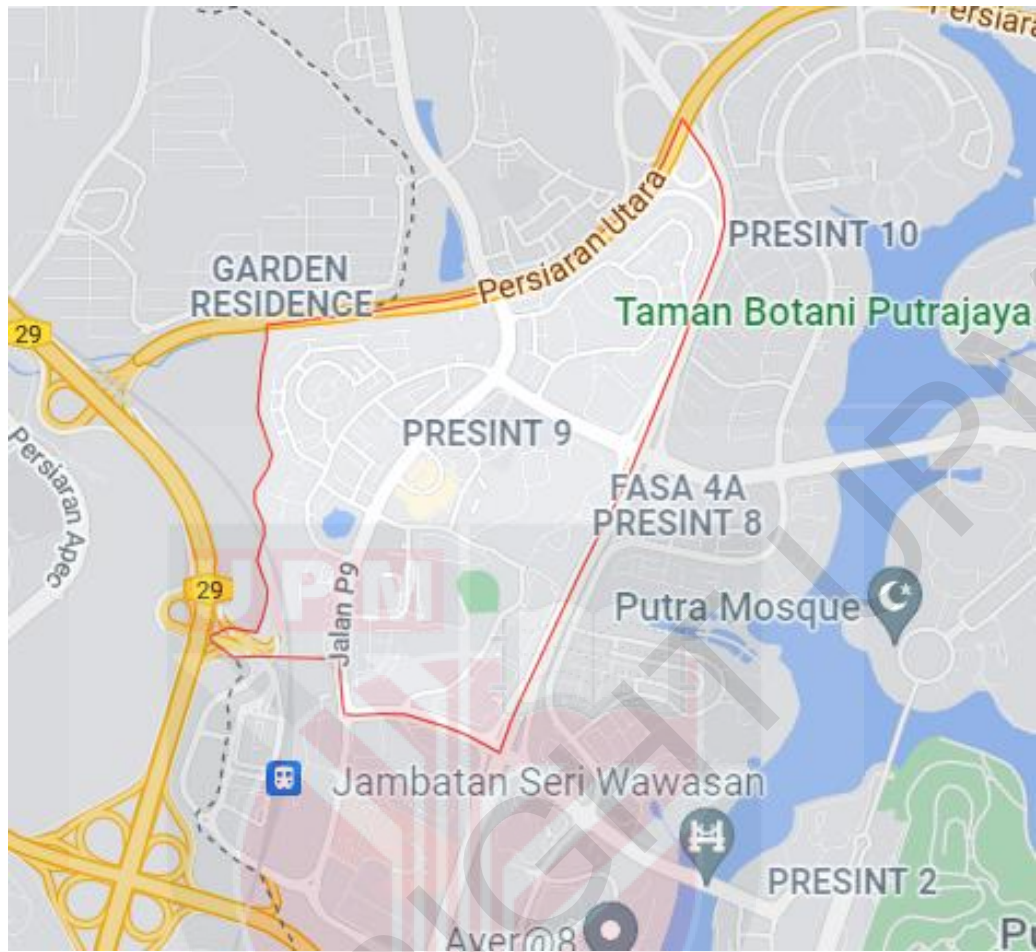


Figure 3.1: Presint 9 (Source: Google Map)

3.3 Study Sampling

3.3.1 Sample Population

The sampling population was among youths in Presint 8 and Presint 9 of Putrajaya. Only youths aged 18-30 will be the respondents for this study with the amount of 86 900 in Putrajaya (World Data Atlas, 2020).

3.3.2 Sample Frame

The sample frame in this study has been randomly selected from youth in Putrajaya specifically in Presint 8 and Presint 9. Respondents who were currently living in both Presint 8 and Presint 9 of Putrajaya, that fulfilled the inclusive criteria has been randomly selected.

3.3.3 Inclusive and Exclusive Criteria

- Inclusive Criteria:
 1. Citizens of Malaysia (Youths) that are in range from 18-30 years old residing in Presint 8.
 2. Citizens of Malaysia (Youths) that are in range from 18-30 years old residing in Presint 9.
- Exclusive Criteria
 1. Children and senior citizens in Putrajaya.

2. Foreigners that are living in Putrajaya.

3.3.4 Sampling Unit

The sampling unit in this study has been youths who were currently residing in Presint 8 and Presint 9 at Putrajaya.



3.3.4 Sampling Method

The first or initial method was purposive sampling where Putrajaya has been purposively selected to be included as the main location in this study due to several criteria that related with the importance of green area. Subsequently, systematic random sampling has been used which every 4th person found is selected to be the respondent and consecutively continued for the 8th person until total of sample sizes are achieved in Presint 8 and also Presint 9.

3.3.5 Sample Sizes

The estimated sample size calculated was 108. The sample size was calculated by using the following formula;

$$\text{Equation: Sample Size (n)} = Z_{(1-\alpha/2)}^2 P(1-P) / d^2 \text{ (Charan \& Biswas, 2013).}$$

Where;

$Z_{(1-\alpha/2)}^2$ = Standard normal variate (at 5% type 1 error ($P < 0.05$) which is 1.96).

P = Expected proportion, 50% (No data from previous study).

d = Absolute error or precision, 10%.

Hence,

$$n = (1.96)^2 \times 0.5(1-0.5) / (0.1)^2$$

$$n = 98$$

By using proportion for one group with 95% of confidence interval which has 1.96 of standard errors and 10% of desired precision. The smaller the precision, the

higher the number of sample size required. The precision can be ranged from 5% to 10% and I used 10% to lower the number of sample size required. The reasoning or justification of the chosen precision is the limitations caused from the implementation of Movement Control Order (MCO) started since January 2021 at Putrajaya and other states in order to prevent the spread of COVID-19 (COVID-19 Response: FAQs (MCO 2021), 2021), where researcher movement was limited on a fixed curfew and most public won't spending their times outdoor due to feeling afraid of getting infection from the ongoing outbreak.

However, 10% drop out rate is needed to be taken into consideration just in case of any likelihood for drop out respondents.

$$10/100 \times 98 = 10$$

Hence, the total estimated sample is 108 respondents.

3.4 Study Instrumentation

Questionnaire

The level of KAP on importance of green area among youths in both Presint 8 and Presint 9 has been evaluated by using self-administered questionnaire. The questionnaire includes of four components:

- I. Section A includes socio-demographic traits or characteristics of the respondents.
- II. Section B includes general questions.
- III. Section C includes three subsections:
 - Knowledge about the importance of green area.
 - Attitude towards the importance of green area.
 - Practice on the importance of green area.
- IV. Section D includes of questions on suggestion recommended by respondents for preservation and conservation of green area in Malaysia.

The questionnaire was developed by stages which consisted improvements and approvals have been obtained from the experts. Specifically, approvals have been obtained from 3 experts in the field and the questionnaire have been pre-tested after approvals are first obtained to ensure good content validity is achieved. English and ‘Bahasa Melayu’ have been used in the questionnaire as the selected languages which is understandable by people in the whole Malaysia. Then, the questionnaire has been distributed to the respondents and requiring them to fill the information as stated above. Distribution of questionnaire is explained in details in ‘3.6 Data Collection Procedure’.

3.5 Variables

3.5.1 Independent Variable

The independent variables were knowledge and attitude on the importance of green area and also the socio-demographic data of respondents.

3.5.2 Dependent Variable

The dependent variable is practice on the importance of green area.

3.6 Data Collection Procedure

The youths have been randomly selected in systematic way in both Presint 8 and Presint 9 by using systematic random sampling where every 4th person found was selected to be the respondent and consecutively continued for the 8th person until total of sample sizes were achieved in Presint 8 and also Presint 9. Before the questionnaires have been distributed, the respondents would be first briefly get explained about the main purposes of the research. In details, the respondents' personal information and responses have been kept strictly confidential by the researcher of this study and they were needed to fill in the consent form to take part in this research. After that, each specific respondent has been given a self-administered questionnaire to be answered within the time of 20 to 30 minutes and the data have been collected at the end of the personal survey. Lastly, the information that have been obtained from the questionnaires have been used to measure the level of KAP on the importance of green are among Youths in Putrajaya.

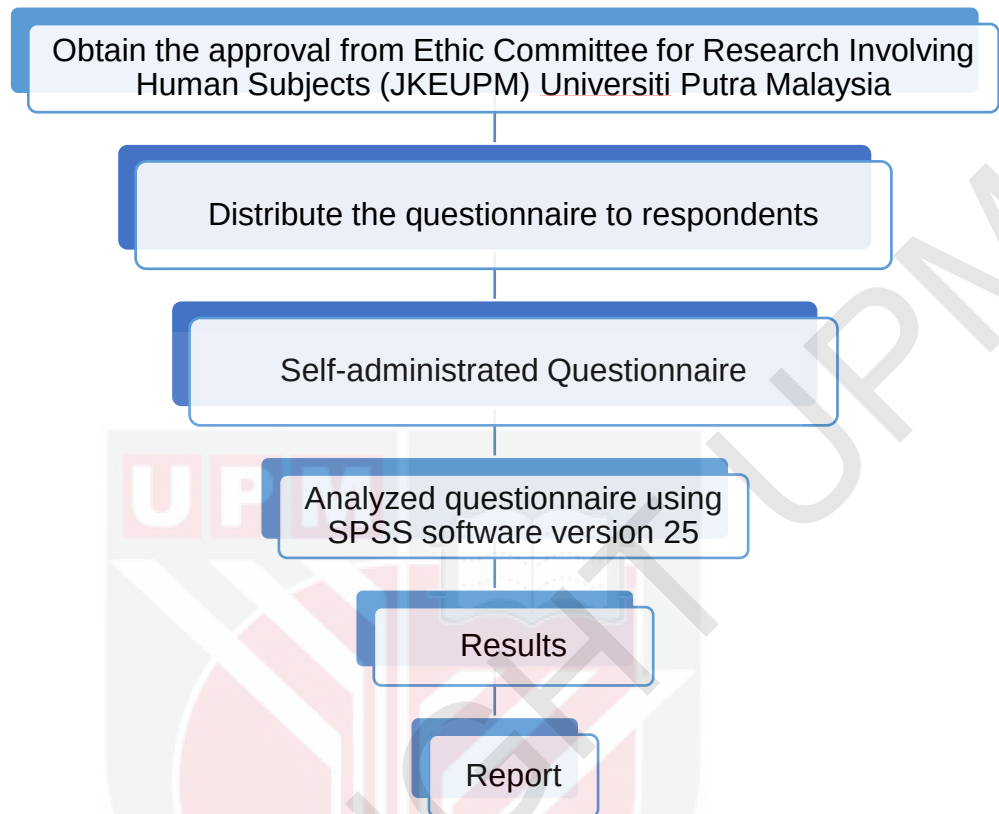


Figure 4.0: Flowchart of The Sampling Procedure

3.7 Data Analysis

After the collection of questionnaires, each specific item was coded and examined by using the Statistical Package for Social Sciences (SPSS) version 25.0. The assumption of normality for significance level was ($p > 0.05$). The normality test has been conducted to show whether the that p value data is normally distributed or not.

Table 1.0: Type of Data Analysis

No.	Variables	Type of Analysis
1.	To identify the socio-demographic status of respondents (Age, gender and race).	Descriptive Analysis
2.	To identify the source of information about the importance of green area.	Descriptive Analysis
3.	To identify the level of knowledge, attitude and practice towards the importance of green area.	Descriptive Analysis
4.	To determine the association between socio-demographic variables with knowledge, attitude and practice towards the importance of green area.	Chi-Square Test
5.	To determine the association between knowledge and attitude with practice towards the importance of green area.	Chi-Square Test
6.	To compare knowledge, attitude and practice on the importance of green area between youths in Presint 8 and Presint 9.	Mann-Whitney Test
7.	To identify the best medium to disseminate information and the most effective measure for preservation and conservation of green area in Malaysia.	Descriptive Analysis

3.8 Quality Control

To ensure reliability of the questionnaire, a pre-test has been conducted among 10% of youths from different locations who have similar characteristics with the sample subject. The youths have been taken from Universiti Putra Malaysia (UPM) which was also considered as green area. They have been excluded from this research but for only pre-test purpose only. The aim of the pre-test was to make sure that the respondents could understand the questions well and any difficulties could be found during answering the questions. The questionnaire has been examined by using Statistical Package for Social Sciences (SPSS) version 25.0 to arrive at Cronbach alpha to test the reliability and consistency of the questions. The value of the Cronbach's Alpha resulted from the pre-test was 0.796 which covered for all sections. Hence, the questions were considered acceptable and reliable.

3.9 Study Limitation and Research Ethics

3.9.1 Study Limitation

The limitation of this study has been information bias and recall bias that may be happened due to the determinant of association or relationship between variables that have been based on the questionnaire and depend on the answers filled by the respondents. The respondents may not remember and misjudge some of the important information related to this study.

3.9.2 Research Ethics

This research has been sent to Ethic Committee for research involving Human Subjects of Universiti Putra Malaysia (JKEUPM) to get approval for its implementation. A written consent forms of participant for this research have been given to the respondents and explanation about the research also has been given to them. All of the information and identity used in this research have been remained private and confidential.



CHAPTER 4

RESULTS

The results of this study were divided based on the findings from the distributed questionnaires. The questionnaire consists of four sections which is Section A (Socio-demographic data), Section B (General questions), Section C (Knowledge, Attitude and Practice) and Section D (Recommendation). This chapter includes the descriptive and analytical results on socio-demographic, knowledge, attitude and practice on the importance of green area.

This research was conducted among youths in Presint 8 and Presint 9 of Putrajaya. In this research, there was a total of 176 respondents which were among youths in Presint 8 (n=92) and Presint 9 (n=84) were involved to assess their knowledge, attitude and practice on the importance of green area. The respondent rate for this study is 100% because the number of sample size needed is fully covered. The findings of the study were displayed as the following.

4.1 Socio-demographic Characteristics

This part shows the frequency distribution of selected variables describing the background profiles of the respondents. Table 2.0 shows the socio-demographic data of total respondents such as age, gender and race. Figure 4.0, 4.1, 4.2, 4.3, 4.4 and 4.5 had summarized the socio-demographic information in bar chart form.

Table 2.0 reveals the socio-demographic profiles of the respondents who have taken part in this study. From the total of 176 youths that had participated, 92 of them are from Presint 8 and 84 of them are from Presint 9. Next, about half youths from Presint 8 have age of below 24 years old (50.00%) and another half is 24 years old and above. For Presint 9, there are 38 youths who have age of below 24 years old (45.23%) and 36 for youths who have age of 24 and above (54.76%). Besides, majority of respondents from Presint 8 are males (57.61%) and half number of respondents from Presint 9 are males (50.00%). Most of the youths from both Presint 8 and Presint 9 are Malay with the percentage of 68.48% and 67.86%. Other than that, most of the respondents from Presint 8 and Presint 9 have tertiary level of education which are 72.83% and 70.24%. In addition, majority of youths from Presint 8 and Presint 9 are coming from household income of M40 which are 45.66% and 47.62% each. Last but not least, respondents from Presint 8 have an equal percentage of years of living in Putrajaya for two groups which are 38.04% of them have been living for 1-5 years, another 38.04% have been living for 5-10 years while the last group is more than 10 years which is made up of 23.91% of respondents from Presint 8. Presint 9 has majority of 46.43% of youths that have been living in Putrajaya for 5-10 years.

Figure 5.0: Age of Respondents

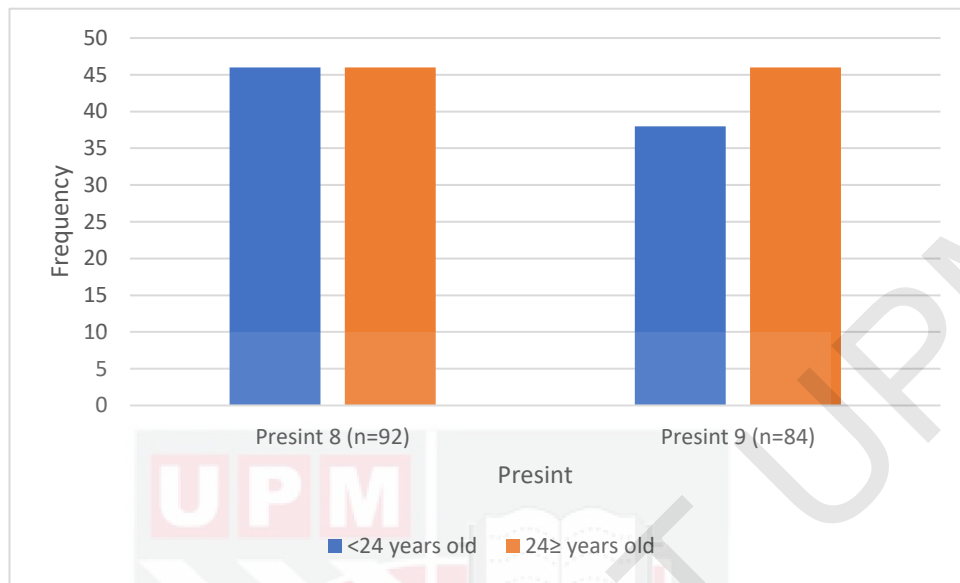


Figure 5.1: Gender of Respondents

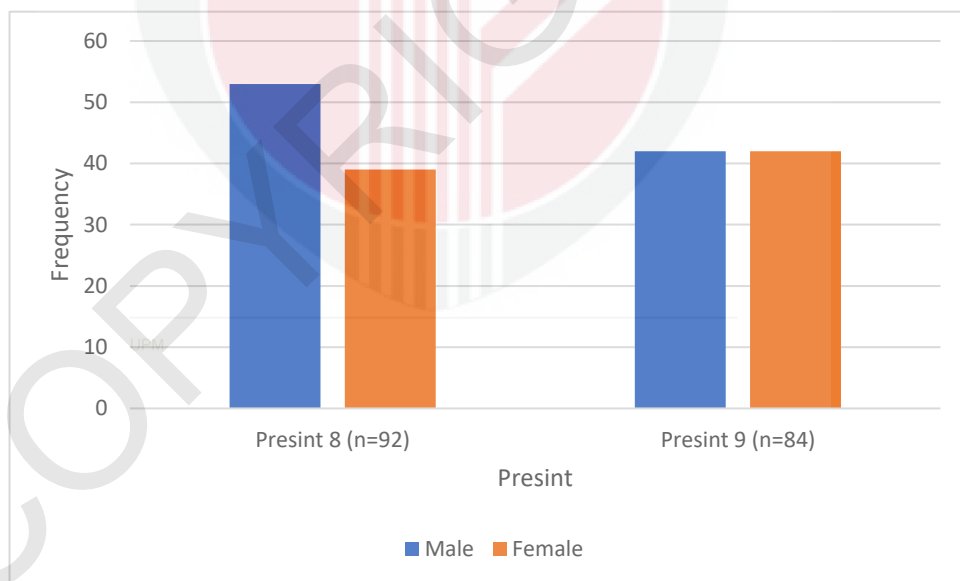


Figure 5.2: Race of Respondents

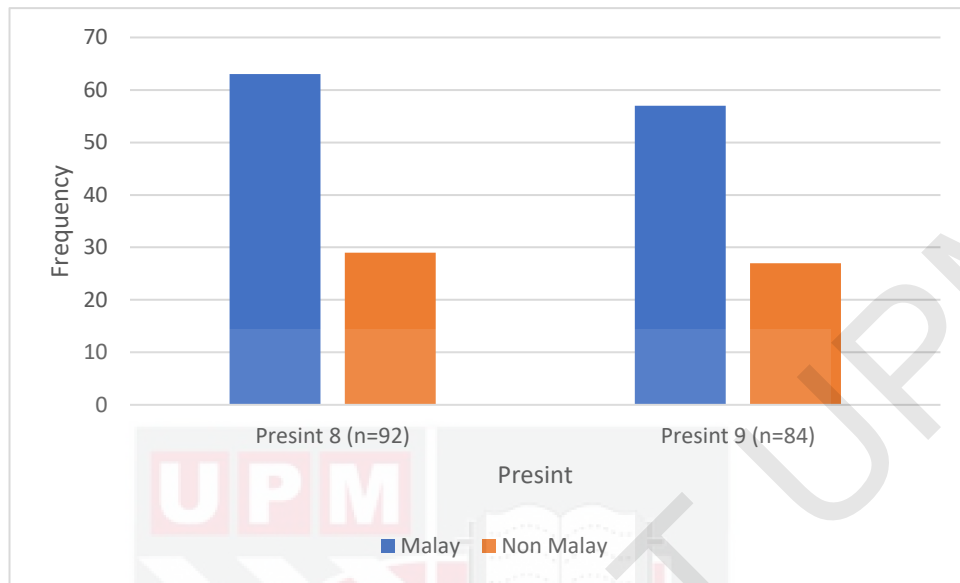


Figure 5.3: Level of Education of Respondents

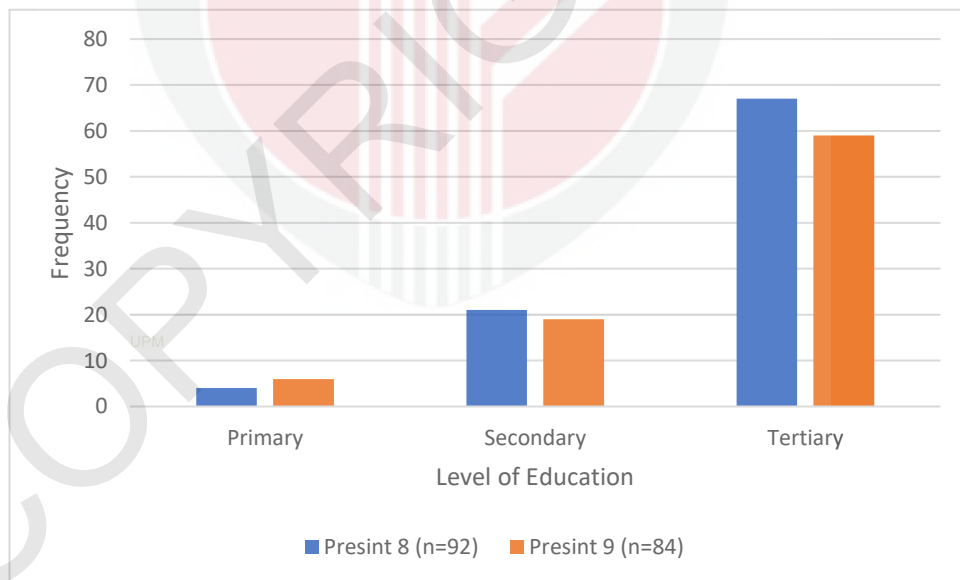


Figure 5.4: Household Income of Respondents

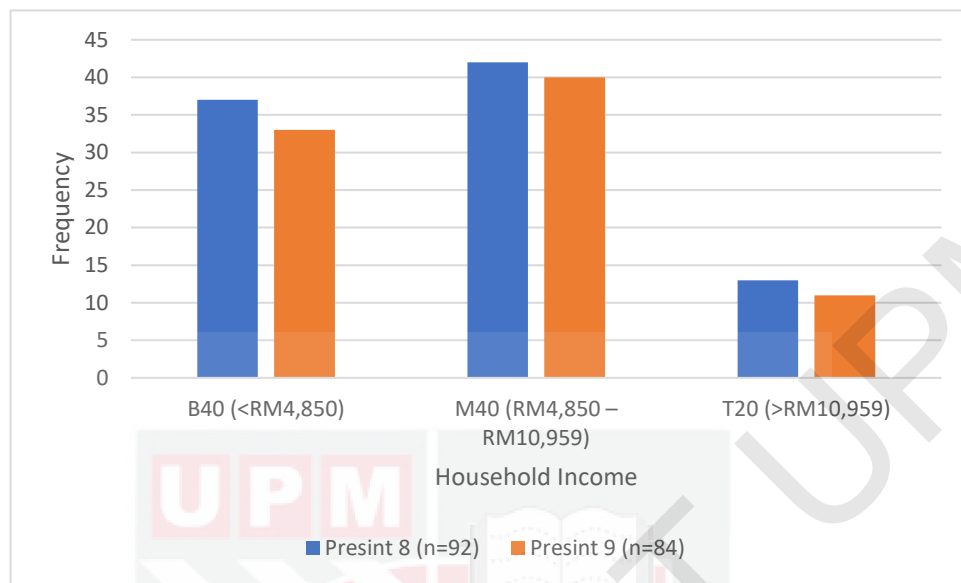


Figure 5.5: Duration of Living of Respondents

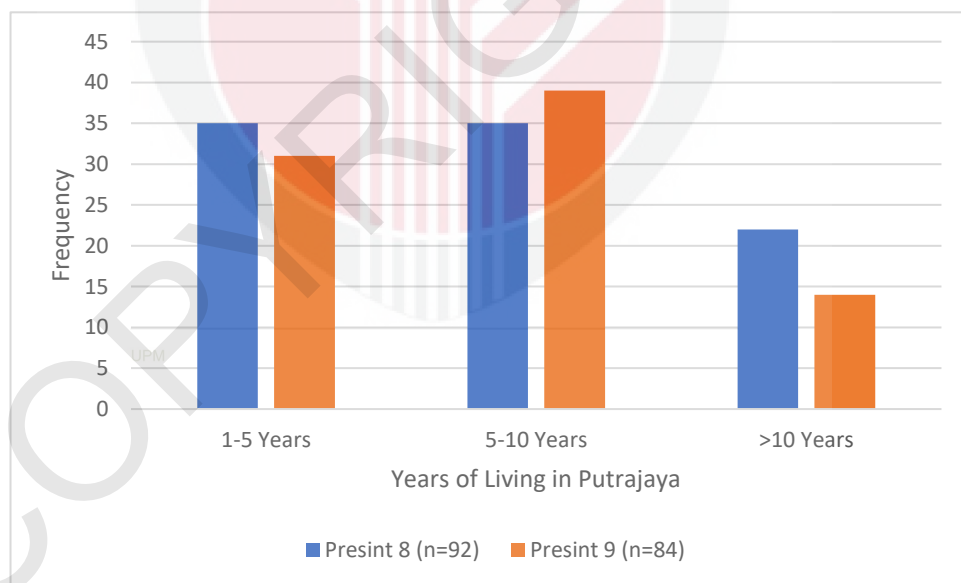


Table 2.0: Socio-demographic Characteristics (N=176)

Socio-demographic Profile		Presint 8 (n=92) N (%)	Presint 9 (n=84) N (%)
Age			
	<24 years old	46 (50.00)	38 (45.23)
	≥24 years old	46 (50.00)	46 (54.76)
Gender			
	Male	53 (57.61)	42 (50.00)
	Female	39 (42.39)	42 (50.00)
Race			
	Malay	63 (68.48)	57 (67.86)
	Non-Malay	29 (31.52)	27 (32.14)
Level of Education			
	Primary	4 (4.34)	6 (7.14)
	Secondary	21 (22.83)	19 (22.62)
	Tertiary	67 (72.83)	59 (70.24)
Household Income			
	B40 (<RM4,850)	37 (40.22)	33 (39.29)
	M40 (RM4,850 – RM10,959)	42 (45.66)	40 (47.62)
	T20 (>RM10,959)	13 (14.13)	11 (13.10)
Years of Living in Putrajaya			
	1-5 Years	35 (38.04)	31 (36.90)
	5-10 Years	35 (38.04)	39 (46.43)
	>10 Years	22 (23.91)	14 (16.67)

A total of 176 respondents were selected from two precincts in Putrajaya which are Presint 8 and Presint 9. Only youths from age of 18 to 30 years old were involved in this study. The two precincts were selected for this study because both of the precincts are edged with the same lake but with different names where the lake is manmade and have multiple recreational space surround it for people to do outdoor activities like cycling, running, social activities and much more. Such information was utilised as a check to determine whether or not the sample of respondents was generalizable to the entire population in Putrajaya.

4.2 General Information on Importance of Green Area

Table 3.0 illustrated the second section in the questionnaire which was the general knowledge. Seven questions have been asked to those respondents. The purpose of this section is to know their general knowledge regarding to the importance of green area. Descriptive statistic was done to get the frequency and percentage of respondents chosen answers based on two different precincts.

Based on the table 3.0, all of the respondents from both precincts (100%) aware and have knowledge on green areas. Besides, most of the respondents (87.5%) answered correctly to the definition of green areas question and majority of the youths (99.4%) aware that green areas are vital for quality of life. Other than that, large number of youths (55.68%) chose that the green areas can lower or cool the temperature of its surrounding and social media has been chosen mostly as the source of information in getting the knowledge of the importance of green areas by respondents (43.75%). In addition, majority of the respondents (32.95 %) also chose internet as the most referred social media platform in getting exposure to importance of green areas and most of them (39.8%) interact with green areas in about one to two times per week.

Table 3.0: General Information on The Importance of Green Area (N=176)

General Knowledge	Number (n)	Percentage (%)
Know about green areas		
Yes	176	100
No	0	0
Definition of green areas		
Consists of green trees or plants	14	8
Consists of animals such as insects, fishes and others	2	1.1
Consists of lakes	4	2.3
Surrounded with infrastructure facilities	2	1.1
All statements above	154	87.5
Aware that green areas are important for quality of life		
Yes	175	99.4
No	1	0.6
Importance of the green areas		
Absorb excessive sound	76	43.18
Lower or cool the temperature	98	55.68
Conserve environmental conditions	69	39.2
Give aesthetic effects that are beautiful, tidy, clean and could attract the public	73	41.48
Promote healthy lifestyles by providing space for recreational activities	68	38.64
Source of information		
Mass media	65	36.93
Printed media	74	42.05
Social media	77	43.75
Friends	31	17.61
Lectures	65	36.93
Parents	41	23.3
Non-governmental organization	33	18.75
Others	0	0
Most referred social media platform		
Instagram	33	18.8
Facebook	54	30.7
Twitter	22	12.5
Tiktok	9	5.11
Internet	58	32.95
Others	0	0
Duration of interaction with green areas in a week		
1-2 times	70	39.8
3-4 times	55	31.3
4-5 times	25	14.2
More than 5 times	26	14.8

4.3 Knowledge on The Use of Green Areas

This section consists of a set of several statements and the respondents needed to choose whether the particular statement is right or wrong. There were 20 questions being asked to determine the respondents' knowledge on the use of green areas. The youths involved got 1 point for every correct answer and 0 score for the wrong answer. Overall score is then converted in the terms of score level and was classified into three levels which are low, moderate and high. The range of scores is between 0 to 20 points. A mean score for knowledge which is 17.18 and standard deviation of 1.69 were used to categorize the respondents into 3 orders as following (Singh & Chapman, 2011).

High Level: more than 19

Moderate Level: 15 to 19

Low Level: less than 15

Level of knowledge of the respondents on the importance of green areas and its distribution was shown in Table 4.0. Majority of the youths from Presint 8 and Presint 9 had moderate knowledge level which was 74 (80.43%) and also 75 (89.29%) respectively. Whereas, only 13 (14.13%) youths from Presint 8 and 3 (3.57%) from Presint 9 had high knowledge on the importance of green areas. Meanwhile, 5 (5.43%) and 6 (7.14%) of respondents from both Presint 8 and Presint 9 respectively had poor level of knowledge on the importance of green areas.

Table 4.0: Level of Knowledge on The Importance of Green Areas

Variables	Presint 8		Presint 9	
	N	(%)	N	(%)
Knowledge				
Low	5	5.43	6	7.14
Moderate	74	80.43	75	89.29
High	13	14.13	3	3.57

Based on Table 4.0, most of the youths of all two precincts had moderate knowledge level about the importance of green areas. Although they are living in and surrounded with green areas such as parks and recreational areas, they were still unable to identify some of the basic information regarding the importance of green areas which they usually visit.

4.4 Attitude towards The Importance of Green Areas

To explore the attitude towards the importance of green areas among youths in Presint 8 and Presint 9, there were 14 questions being asked on the opinion whether they agree or not with the statements for attitude on their behaviour. The scoring scale method was used to categorize the attitude level. The score was 5 for strongly agree, 4 for an agree answer, 3 for not sure, 2 for disagree and 1 for strongly disagree answer. The scores obtained was sum up and categorized into three orders which were high, moderate and low attitude level. A mean score for attitude which is 58.87 and standard deviation of 4.97 were used to categorize the respondents into 3 orders as following (Singh & Chapman, 2011).

High Level: more than 64

Moderate Level: 54 to 64

Low Level: less than 54

To sum up the attitude level towards the importance of green areas, the distribution was tabulated in Table 5.0. Majority of the youths from Presint 8 and Presint 9 had moderate attitude towards the importance of green areas which were 73 (79.35%) and 56 (66.7%). Besides, 12 (13.04%) of respondents from Presint 8 and 12 (14.29%) of respondents from Presint 9 had high attitude level. Other than that, 7 (7.61%) and 16 (19.05%) youths from Presint and Presint 9 respectively had low level of attitude.

Table 5.0: Level of Attitude on The Importance of Green Areas

Variables	Presint 8		Presint 9	
	N	(%)	N	(%)
Attitude				
Low	7	7.61	16	19.05
Moderate	73	79.35	56	66.67
High	12	13.04	12	14.29

4.5 Practice on The Importance of Green Areas

For practice towards the importance of green areas, there were 17 questions being asked to the respondents to know their practice to preserve and conserve the green areas. The respondents were asked about the frequency to practice each of the statement provided in the questionnaire. 1 point was given for never option answer, 2 points for seldom answer, 3 for sometimes answer, 4 for often answer and 5 points for always option answer. The scores obtained was sum up and categorized into three orders which were high, moderate and low attitude level. A mean score for practice which is 71.56 and standard deviation of 7 were used to categorize the respondents into 3 orders as following (Singh & Chapman, 2011).

High Level: more than 79

Moderate Level: 65 to 79

Low Level: less than 65

Table 6.0 shows the distribution of level of practice among youths from Presint 8 and Presint 9 towards the importance of green areas. Majority of the youths from Presint 8 and Presint 9 had moderate practice towards the importance of green areas which were 61 (66.3%) and 68 (80.95%). Besides, 14 (15.22%) of respondents from Presint 8 and 7 (7.61%) of respondents from Presint 9 had high practice level. Other than that, 17 (18.48%) and 9 (10.71%) youths from Presint and Presint 9 respectively had low level of practice.

Table 6.0: Level of Practice on The Importance of Green Areas

Variables	Presint 8		Presint 9	
	N	(%)	N	(%)
Practice				
Low	17	18.48	9	10.71
Moderate	61	66.3	68	80.95
High	14	15.22	7	7.61

4.6 Association between Socio-demographic Data with Knowledge, Attitude and Practice on The Importance of Green Areas

The association between age, gender, ethnicity, Level of Education, Household Income and duration of living with youths' knowledge, attitude and practice on the importance of green areas was analysed using Chi-square test and presented in Table 7.0, Table 8.0 and Table 9.0 below. The Chi-square Test was conducted in order to determine the relationship between two categorical variables.

Table 7.0: Association between Socio-demographic Data with Knowledge
(N=176)

Variables	Level of Knowledge, N (%)			X ²	p-value
	Low	Moderate	High		
Age					
<23	3	74	7	2.17	0.338
≥24	8	75	9		
Gender					
Male	5	79	11	1.782	0.41
Female	6	70	5		
Race					
Malay	9	97	14	4.347	0.114
Non-Malay	2	52	2		
Level of Education					
Primary	1	9	0	3.821	0.431
Secondary	4	34	2		
Tertiary	6	106	14		
Household Income					
B40	6	56	8	2.46	0.652
M40	4	71	7		
T20	1	22	1		
Years of Living in Putrajaya					
1-5 Years	5	53	8	1.791	0.774
5-10 Years	4	64	6		
>10 Years	2	32	2		

N=176, Chi-square Test, *significant at p<0.05

Based on Table 7.0, there was no association between age, gender, race, level of education, household income, and years of living in Putrajaya with youths' knowledge. The p-value for age, gender, race, level of education, household income, and years of living in Putrajaya were more than 0.05 which were 0.338, 0.41, 0.114, 0.431, 0.652 and 0.774. Hence, indicating that there were no significant association between age, gender, race, level of education, household income, and years of living in Putrajaya with knowledge of respondents.



Table 8.0: Association between Socio-demographic Data with Attitude (N=176)

Variables	Level of Attitude, N (%)			X ²	p-value
	Low	Moderate	High		
Age					
<23	9	62	13	1.086	0.581
≥24	14	67	11		
Gender					
Male	13	66	16	2.027	0.363
Female	10	63	8		
Race					
Malay	21	92	7	23.093	0
Non-malay	2	37	17		
Level of Education					
Primary	2	5	3	5.718	0.221
Secondary	5	27	8		
Tertiary	16	97	13		
Household Income					
B40	14	52	4	10.144	0.038
M40	6	60	16		
T20	3	17	4		
Years of Living in Putrajaya					
1-5 Years	10	52	4	7.633	0.106
5-10 Years	10	53	11		
>10 Years	3	24	9		

N=176, Chi-square Test, *significant at p<0.05

Based on Table 8.0, there was no association between age, gender, level of education, and years of living in Putrajaya with youths' attitude. The p-value for age, gender, level of education, and years of living in Putrajaya were 0.0581, 0.363, 0.221 and 0.106 which were more than 0.05. Hence, indicating that there were no significant association between age, gender, level of education and years of living in Putrajaya with attitude of respondents. However, there were a significant association on race or ethnicity and household income with attitude of respondents as shown in Table 8.0. The Chi-square Test obtained are 23.093 and 10.144 and the p-value for each are 0 and 0.038 which are less than 0.05. Thus, there was an association between race or ethnicity and household income with attitude level.

Table 9.0: Association between Socio-demographic Data with Practice (N=176)

Variables	Level of Practice, N (%)			X ²	p-value
	Low	Moderate	High		
Age					
<23	13	63	8	0.898	0.638
≥24	13	66	13		
Gender					
Male	13	68	14	1.61	0.447
Female	13	61	7		
Race					
Malay	23	90	7	16.834	0
Non-malay	3	39	14		
Level of Education					
Primary	2	7	1	4.772	0.312
Secondary	3	29	8		
Tertiary	21	93	12		
Household Income					
B40	13	54	3	10.004	0.04
M40	11	55	16		
T20	2	20	2		
Years of Living in Putrajaya					
1-5 Years	15	46	5	11.955	0.018
5-10 Years	8	59	7		
>10 Years	3	24	9		

N=176, Chi-square Test, *significant at p<0.05

Based on Table 9.0, there was no association between age, gender and level of education with youths' practice. The p-value for age, gender and level of education were more than 0.05 which were 0.638, 0.447 and 0.312. Hence, indicating that there were no significant association between age, gender and level of education with practice of respondents. However, there were a significant association on race, household income and years of living in Putrajaya with practice of respondents as shown in Table 9.0. The Chi-square Test obtained are 16.834, 10.004 and 11.955 and the p-value for each are 0, 0.04 and 0.018 which are less than 0.05. Thus, there was an association between race, household income and years of living with practice level.

4.7 Association between Knowledge and Attitude with Practice on The Importance of Green Areas

To analyse the association between knowledge and attitude on practice to preserve and conserve green areas, the Chi-square Test was used. The data obtained was tabulated in Table 10.0 and Table 11.0.

Table 10.0: Association between Knowledge and Practice (N=176)

Variable	Practice, N (%)			X2	p-value
	Low	Moderate	High		
Knowledge					
Low	2 (1.14)	9 (5.11)	0	2.236	0.693
Moderate	22 (12.5)	109 (61.93)	18 (10.23)		
High	2 (1.14)	11 (6.25)	3 (1.7)		
N=176, Chi-square Test, *significant at p<0.05					

N=176, Chi-square Test, *significant at $p < 0.05$

Based on Table 9.0, about 109 (61.93%) youths had moderate knowledge and moderate practice on the importance of green areas. Besides, only 3 (1.7%) youths had high level of knowledge with good practice and 2 (1.14%) had low knowledge level with low level of practice. The Chi-square Test obtained was 2.236 and the p-value was 0.693 which is more than 0.05. Hence, there was no association between knowledge and practice level.

Table 11.0: Association between Attitude and Practice (N=176)

Variable	Practice, N (%)			X2	p-value
	Low	Moderate	High		
Attitude					
Low	6 (3.41)	17 (9.66)	0	41.279	0
Moderate	19 (10.78)	101 (57.39)	9 (5.11)		
High	1 (0.57)	11 (6.25)	12 (6.82)		

N=176, Chi-square Test, *significant at $p < 0.05$

Table 9.0 shows the association between attitude and practice on the importance of green areas. There were 101 (57.39%) youths who had moderate attitude with moderate practice level and 12 (6.82%) youths had high attitude and high level of practice. Next, only 6 (3.41%) youths had low knowledge level with low level of practice. The Chi-square Test resulted to 41.279 value with the p-value of 0 which is less than 0.05. Hence, there was an association between attitude and practice in preserving and conserving green areas.

4.8 Comparison of Knowledge, Attitude and Practice on The Importance of Green Areas between Youths of Presint 8 and Presint 9

The comparison of knowledge, attitude and practice on the importance of green areas between youths of Presint 8 and Presint 9 were analysed using Mann-Whitney Test since the data was not normally distributed and it has two groups of precincts. The results were tabulated in Table 10.0 and Table 11.0.

Table 12.0: Comparison of Knowledge on The Importance of Green Areas (N=176)

Precincts	n	Median	z	p-value
Presint 8	92	18	-2.093	0.036
Presint 9	84	17		

N=176, Mann-Whitney Test, *significant at $p < 0.05$

From Table 10.0, there was a significant difference on the knowledge level between Presint 8 and Presint 9 where the p-value is less than 0.05 which is 0.036 respectively.

Table 13.0: Comparison of Attitude on The Importance of Green Areas (N=176)

Precincts	n	Median	z	p-value
Presint 8	92	59.5	-1.298	0.194
Presint 9	84	58.5		

N=176, Mann-Whitney Test, *significant at $p < 0.05$

Based on Table 10.0, the p-value obtained from the test was 0.194 which is more than 0.05. Hence, there was no significant difference of attitude level between youths of Presint 8 and Presint 9.

Table 14.0: Comparison of Practice on The Importance of Green Areas (N=176)

Precincts	n	Median	z	p-value
Presint 8	92	72	-0.143	0.886
Presint 9	84	71		

N=176, Mann-Whitney Test, *significant at $p < 0.05$

Based on Table 11.0, the p-value obtained from the test was 0.886 which is more than 0.05. Hence, there was no significant difference of practice level between youths of Presint 8 and Presint 9.

4.9 Recommendation

The recommendation was proposed in Section D of the questionnaire distributed to the youths in both Presint 8 and Presint 9.

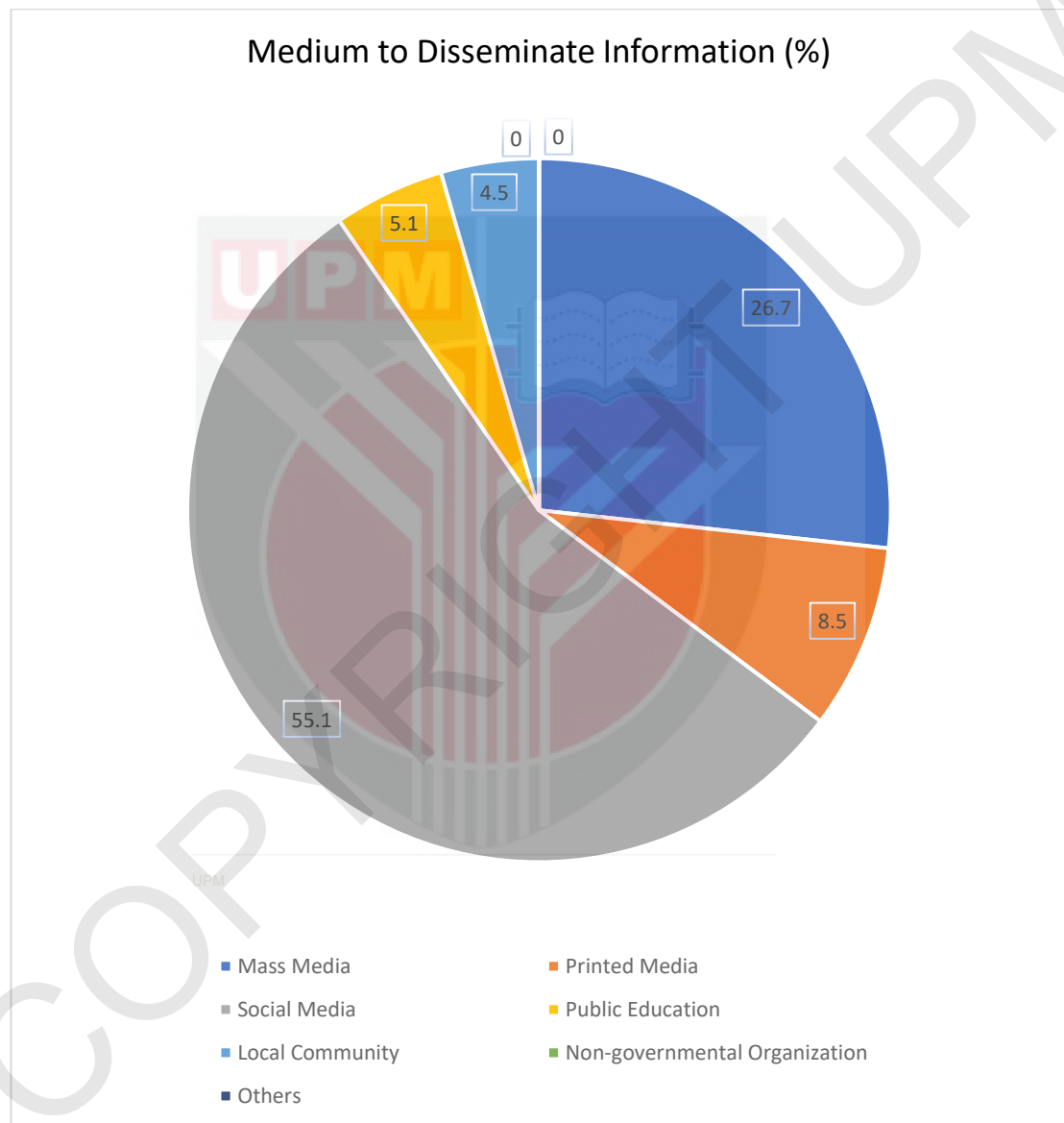


**Figure 5.6: The Most Appropriate Medium for Disseminating Information
Regarding on The Importance of Green Areas**

Based on Figure 4.6, the most appropriate medium chosen by the youths to disseminate the information regarding the importance of green areas was social media which was 97 (55.1%), followed by mass media 47 (26.7%). Meanwhile, 15 (8.5%) youths have chosen printed media, another 9 youths (5.1%) chose public education and finally 8 (4.5%) have chosen the local community itself. A study from Wakefield et al. (2010) has found that social and mass media might contribute to the positive transformation or changes in health-related behaviours.



Table 15.0: Most Effective Measure to Preserve and Conserve Green Areas

Variables	Frequency	Percentage (%)
Strengthen the policies and the legislation regarding the green areas	32	18.2
Include community engagement in green areas management	64	36.4
Enhance reforestation or replantation	24	13.6
Allocate sufficient funds for green management	19	10.8
Strengthen the role of government agencies (local authority) in green areas management and preservation	37	21

Table 7.0 showed the most effective measures chosen by youth to preserve and conserve green areas in Presint and Presint 9. Majority of the respondents which were 64 (36.4%) suggested to include community engagement in green areas management may help in preserving and conserving green areas in Putrajaya. Besides, 37 (21%) youths recommend to strengthen the role of government agencies (local authority) in green areas management and preservation and also the other 32 youths (18.2%) think that strengthen the policies and the legislation regarding the green areas could preserve it. Besides, only 24 (13.6%) and 19 (10.8%) youths recommend to enhance reforestation or replantation and allocate sufficient funds for green management.

A study by Muratet et al. (2015) has stated that the importance of evaluating the advantages of green spaces cannot be overstated, and it should be incorporated into

the project evaluation process as well as taken into consideration in policy choices and urban planning plans.



CHAPTER 5

DISCUSSION

5.1 Socio-demographic Characteristics

The main objective of this study is to study the knowledge, attitude and practice on the importance of green area among youths in Presint and Presint 9, Putrajaya as well as the associated factors of each of it. Presint 8 and Presint 9 in the city of Putrajaya were used to pick the respondents from a total of 176 people who answered the survey's questions. The subjects in this research were only youths between the ages of 18 to 30 years old. Most of the youths (75%) were working ages. People in their working years are more likely to experience work-related stress and hence have a greater need for physical activity or stress reduction, both of which can be found in urban green spaces (Nath et al., 2018). In order to evaluate whether or not the sample of respondents was broadly applicable to the full population of Putrajaya, this type of information was used to do a check on it.

Furthermore, Malaysia is a mixed country, with the Malay, Chinese, and Indian populations constituting the three largest ethnic groups. Due to the fact that Malay people account for 67.4% of Malaysia's population, it was projected that they would be the most common ethnic group among respondents (Department of Statistics Malaysia Official Portal, 65 2021). In addition, the monthly household income shows the distribution of the sample. The average monthly household income for Presint 8 and Presint 9 were of M40 (42% and 40%), in which it translates into income starting

from RM4,850 to RM10,959. In accordance with the 2020 survey report, urban income increased by 3.9%.for each year, going from RM7,671 to RM8,635 and Selangor also had a higher average income than the rest of the country, with a mean income of RM10,827 and RM8,013, respectively (Department of Statistics Malaysia Official Portal, 2021).



5.2 Knowledge on The Use of Green Areas

The large percentage of youths from Presint 8 and Presint 9 seemed to have a moderate level of knowledge, with 74 (80.43 %) and 75 (89.29 %) correspondingly. On the other hand, just 13 (14.13 percent) of the youths from Presint 8 and 3 (3.57 %) of the youths from Presint 9 showed a strong understanding of the value of green spaces. The same survey found that 5 (5.43 %) and 6 (7.14 %) of individuals from both Presint 8 and Presint 9 had inadequate awareness of the value of green areas. Overall, the mean score of knowledge level is 17.18 which shows majority of respondents have moderate level of knowledge. Thus, further actions need to be taken to increase the level of knowledge of respondents.

Level of knowledge among young residents need to be increased as a study by Muratet et al. (2015) has stated that the preservation and restoration of biodiversity is not the only challenge involved in green area management in cities, and notably in open green spaces, where the connection between human beings and nature is crucial for healthy living. Thus, it is vital for every individual to have an adequate knowledge on the usage of green areas because the connection between humans and nature is important for a healthy living. In addition, better comprehension of public perceptions of green spaces, as well as the benefits supplied by green spaces, can be used to improve the design, administration, and aesthetic appeal of existing green spaces (Muratet et al., 2015). If people have more knowledge on the usage of green areas, ‘the design, administration and aesthetic appeal’ of existing green spaces would be improved by both landscape planners and ecologists and in exchange, improvements to green spaces may result in increased usage and also enjoyment of such locations, as

well as increased participation in conservation efforts by the general public (Muratet et al., 2015; Schwartz, Turbé, Simon, & Julliard, 2014). Muratet et al. (2015) also found that in order to evaluate biodiversity-based natural ecosystems and the value of biodiversity preservation in urban parks, a greater knowledge of people's perceptions of biodiversity is required. Also, it was reported by Tolvanen et al. (2011) that increasing knowledge increases the likelihood of changing attitudes and behaviour. In addition, one study pointed out that the gain in knowledge is more concerned with the changes in behaviour and practises than with the increase in information itself (Al-Binali et al., 2010). People's attitudes toward their own behaviour are influenced by their knowledge of the world around them and since knowing more about healthy behaviour can influence one's health-related attitudes, this can lead to an increase in one's health-related behaviours (Tolvanen et. al, 2011).

5.3 Attitude towards The Importance of Green Areas

The most of youths from Presint 8 and Presint 9 had a moderate attitude toward the value of green spaces, with 73 (79.35 %) and 56 (56 %) respectively having a moderate attitude toward the importance of green spaces (66.7 %). Furthermore, 12 (13.04 %) of interviewees from Presint 8 and 12 (14.29 %) of answers from Presint 9 had a positive outlook regarding attitude level. Aside from that, 7 (7.61 %) and 16 (19.05 %) youths from Presint 8 and Presint 9 showed negative or low level of attitudes. Overall, the mean score of attitude level is 58.87 which shows majority of respondents have moderate level of attitude. Thus, further actions need to be taken to increase the level of attitude of respondents.

Level of attitude among young residents need to be increased as a study by Arbiol et al. (2016) stated that a positive attitude must be matched by strong understanding or good knowledge in order to maximise an individual's ability to put preventive actions into practise as effectively as possible. The findings of a study conducted by Tolvanen et al. (2011) revealed that knowledge influences behaviour, but that it did so mostly through attitudes. An attitude is the possibility that a person will respond positively or negatively to a particular object, person, circumstance, or idea (Yun Ai Wong et al., 2019). As a result of these reactionary tendencies, influencing attitudes with enough positive and accurate knowledge results in the development of beneficial practices. In addition, some study found a link between knowledge and a positive attitude, which lends credence to this assertion. As a result, a gain in knowledge is inversely related to an increase in positive attitude (Aminrad et al., 2013).

5.4 Practice on The Importance of Green Areas

The majority of youths from Presint 8 and Presint 9 had a moderate level of practise regarding the value of green areas, with 61 (66.3 %) and 68 (80.95 %). Furthermore, 14 (15.22 %) of participants from Presint 8 and 7 (7.61 %) of individuals from Presint 9 reported having a high degree of practicing. The remaining youths from Presint 8 and Presint 9 each had 17 (18.48 %) and 9 (10.71 %) answers that had a low level of practice, compared to the rest of the population. Overall, the mean score of practice level is 71.56 which shows majority of respondents have moderate level of practice. Thus, further actions need to be taken to increase the level of practice of respondents.

Level of practice among young residents need to be increased as a study by Awang Besar et al. (2013) stated that the higher the practice level, the greater the possibility for the success to be achieved. Other than that, an article by Arbiol et al. (2016) claimed that in order to maximise an individual's ability to put preventive activities into practise as successfully as possible, a positive attitude must be accompanied by strong understanding or good knowledge. In addition, on the basis of past studies, they concluded that changing a practise is a process that may take time and may not result in a change in practise overnight. Growing up (growth, skill development), learning, conditioning, and extrinsic and intrinsic rewards are some of the variables that might lead to changes in health-related behaviour. These modifications are regarded as part of a process. This process can be influenced by a variety of internal elements, such as knowledge, attitudes, intention, and stress, as well

as external factors, such as social support and the environment in which one lives (Tolvanen et al., 2011).



5.5 Association between Socio-demographic Data with Knowledge, Attitude and Practice on The Importance of Green Areas

As demonstrated in Table 7.0, there was no correlation between youths' knowledge and their age, gender, race, level of education, household income, and years of residing in Putrajaya. In Putrajaya, the p-values for age, gender, race, level of education, household income, and years of living were 0.338, 0.41, 0.114, 0.431, 0.652, and 0.774, which are all greater than 0.5 respectively. As a result, there was no significant relationship between respondents' knowledge and any of respondents' socio-demographic data. These findings were supported by other studies that found knowledge scores were not significantly associated with gender (Selvarajoo et al., 2020) or race (Balbir Singh et al., 2019), but they were also in contrast to other findings that stated that there was an association between knowledge with age and race (Selvarajoo et al., 2020), and gender (Balbir Singh et al., 2019), as well as other findings that stated that knowledge have association with age and race (Ma Saung Oo et al., 2019).

As demonstrated in Table 8.0, there were a significant association on race or ethnicity and household income with attitude of respondents. The Chi-square Test obtained are 23.093 and 10.144 and the p-value for each are 0 and 0.038 which are less than 0.05. Thus, there was an association between race or ethnicity and household income with attitude level. Multiple studies such as Tan et al. (2010), Al-Zurfi et al. (2015) and much more mentioned that usually there will be no correlation between race and attitude. This finding can be addressed by the fact that the vast majority of our respondents were Malays, and hence my sampling doesn't quite portray all

ethnicities equally effectively. Next, a study by Jan Otto Andersson and Kangas (2002) have discovered that the element of income level had an impact or influence on the respondents' attitudes. This explains why respondents' attitude from both precincts have a correlation with household income.

As demonstrated in Table 9.0, there were a significant association on race, household income and years of living in Putrajaya with practice of respondents. The Chi-square Test obtained are 16.834, 10.004 and 11.955 and the p-value for each are 0, 0.04 and 0.018 which are less than 0.05. Thus, there was an association between race, household income and years of living with practice level. According to the findings of a research project by Brown et al. (2016), ethnic group affiliation is connected with a number of different lifestyle patterns. Higher income or wealthier people tend to have different practices than those people who receive less in the terms of practices in one's daily life and psychological characteristics such as money savings and healthy activities (Murphy, 2020). A study by Doubeni et al. (2012) has also found that socioeconomically difference in neighbourhoods influence people's lifestyle practices. Youths' seamless transition to autonomous and healthful adulthood, admission into the profession, ongoing performance and efficient parenthood may all contribute to the country's overall security and well-being and the study also mentioned that the success or failure of any cohort of young people as a whole has implications for the stability and advancement of society as a whole (Bonnie et al., 2015).

5.6 Association between Knowledge and Attitude with Practice on The Importance of Green Areas

Approximately 109 (61.93 %) of the youths had a moderate understanding or knowledge and practice of the value of green areas. Furthermore, only 3 (1.7%) of the youths had a high level of knowledge with good practice, whereas 2 (1.14%) had a poor level of knowledge with low level of practice. The Chi-square Test resulted in a p-value of 0.693, which is more than 0.05. As a result, there was no link between knowledge and degree of practice.

There were 101 (57.39%) youths with a moderate attitude and a moderate degree of practice, while 12 (6.82%) had a high attitude and a high level of practice. Following that, just 6 (3.41 %) of the youths had a low level of knowledge with a low degree of practice. The Chi-square Test resulted a value of 41.279, with a p-value of 0, which is less than 0.05. As a result, there was a link between attitude and practice in terms of preserving and conserving green areas for both Presint 8 and Presint 9 of Putrajaya. In the dictionary, practise is described as the method by which people display their knowledge and attitude through their acts (Karunamoorthi Kaliyaperumal, 2004). In this case, it is possible to say that shifting from poor practise to good practise is the outcome of shifting one's knowledge and attitude. This assertion is supported by a study who found that an increase in knowledge and awareness regarding environmental dilemmas has a significant impact on changes in environmental behaviour and human practises toward nature (Mohammad Bakri Hammami et al., 2017).

5.7 Comparison of Knowledge, Attitude and Practice on The Importance of Green Areas between Youths of Presint 8 and Presint 9

In terms of knowledge, the difference between Presint 8 and Presint 9 was statistically significant at a p-value of less than 0.05, which is 0.036. This might be due to the high knowledge among either Precinct on the importance of green areas. Presint 8 has higher number of respondents with high level of knowledge. This may due to several green programs that have been implemented in the precinct. For an example, there were 123 plants or trees planted in two locations (Sisiran tasik & monorail bridge area) which were both in Presint 8 under a program that is called 'Pledge and Plant a Tree Programme' in 2017, organised by Malaysian Institute of Planners which Putrajaya Corporation was in line to participate in making Putrajaya as a low carbon and green city (Putrajaya Corporation, 2018).

In terms of attitude, the p-value obtained from the test was 0.194 which is more than 0.05. Hence, there was no significant difference of attitude level between youths of Presint 8 and Presint 9. In terms of practice, the p-value obtained from the test was 0.886 which is more than 0.05. Hence, there was no significant difference of practice level between youths of Presint 8 and Presint 9. This concludes that youths from Presint 8 and Presint 9 have the same level of attitude and practice on the importance of green area. These findings were aligned with previous research by Johar & Razak, (2015) claim that in terms of environmental knowledge and attitude, there is no statistically significant difference between the two neighbourhoods. In addition, the research also indicates that similar socio-economic and demographic factors between the two green neighbourhoods may result in a similar level of environmental

knowledge between the two communities and when compared to other study sites, some sites have a more positive attitude toward the environment, which may be related to the neighborhood's status and attributes (Johar & Razak, 2015).



CHAPTER 6

CONCLUSION & RECOMMENDATION

6.1 Conclusion

In conclusion, majority of youths from Presint 8 and Presint 9 have moderate level of knowledge, attitude and practice towards the importance of green areas area with the mean score of 17.18 for knowledge, 58.87 for attitude and 71.56 for practice.

The specific objectives for this study were to classify the socio-demographic status of respondents, to analyse the level of knowledge, attitude and practice towards the importance of green area among youth from Presint 8 and Presint 9, to determine if there any association between socio-demographic data towards knowledge, attitude and practice of the importance of green area, to determine the association between knowledge and attitude with practice level on the importance of green area and lasty to compare knowledge, attitude and practice on the importance of green area among youth from Presint 8 and Presint 9. All of the objectives have been identified, analysed and determined. The hypotheses of this study are described in details which in terms of correlation, there is a correlation between KAP and the importance of green area. In terms of association, there were a significant association on race or ethnicity and household income with attitude of respondents, there were a significant association on race, household income and years of living in Putrajaya with practice of respondents, there was an association between attitude and practice in preserving and conserving

green areas and lastly there was a significant difference on the knowledge level between Presint 8 and Presint 9.

The most appropriate medium chosen by the youths to disseminate the information regarding the importance of green areas was social media and they also suggested to include community engagement in green areas management that may help in preserving and conserving green areas in Putrajaya. To improve the knowledge and practice of this generation, it is recommended to increase their understanding.

The study's main contributions are it can determine and define the KAP in terms of the relevance of green space in order to better its management and preservations, as well as present useful information that will aid in improvement initiatives such as the expansion of green space areas in Malaysian metropolitan areas. Other than that, this study may help raise awareness among younger generations about the importance of conserving green spaces for enhanced health and quality of life by increasing KAP toward the value of green space. Lastly, the preliminary findings from this study can be utilised as a guide to develop effective health promotion initiatives to enhance the usage of green spaces, which would benefit society, the economy, and the environment.

6.2 Study Limitations

This study had some limitations, the study is cross-sectional study where it cannot predict whether certain variables predict the others. Next, this study has short duration of time where respondents who answered the questionnaires beyond the time given unable to be included in this study. Other than that, because the findings of this study data analysis are based on cross-sectional data, it is not feasible to draw general conclusions from the findings because it doesn't include other precincts. It is possible that the results may not correctly reflect the population of Putrajaya as a whole, as would be expected. Moreover, the limitation of this study has been information bias and recall bias that may be happened due to the determinant of association or relationship between variables that have been based on the questionnaire and depend on the answers filled by the respondents. The respondents may not remember and misjudge some of the important information related to this study. Another limitation that could be found from this study is that respondents from both precincts have moderate level of KAP. Thus, further actions need to be taken.

6.3 Recommendations

Policy-makers should take action in strengthening green policy and regulations. Other than that, they also should strengthen the law enforcement relating to green area management and amend stricter punishments to those who violate green areas. Next, it would be better if local council can make numerous numbers of environmental programs such as '1 Person 1 Plant' that include communities' engagement. The reason why to include communities' engagement is that because youths have chosen to include community engagement in green areas management that may help in preserving and conserving green areas from the questionnaires given. Other than that, the Department of Environment (DOE) should share information regarding of green area through social media as youths from both of these precincts have chosen social media as the most appropriate medium to disseminate the information regarding the importance of green areas. Moreover, the non-governmental organizations should implement multiple of eco-friendly campaigns to increase youths' knowledge. Lastly, the research setting should be enlarged to encompass numerous regions from different precinct in order to provide a more variety sample that is representative of the target population of Putrajaya.

Furthermore, in order to provide urban residents with locations for recreation, social, and leisure activities, it is necessary to plan green spaces in an appropriate manner. Parks, open space, gardens, and urban woods, among other things, give tourists, neighbours, and children with a variety of chances for physical activities such as walking, running, and cycling, as well as opportunities for social contact and nature observation. In addition, boosting environmental education in schools, especially for

the next generation, is critical since it can help students learn how to better care for and protect the environment for future generations. Consequently, more emphasis should be placed on educating children about the need of protecting the environment for the long-term viability of their lives. In light of the well-documented benefits of urban green spaces for health and well-being, as well as the positive responses from residents, the promotion and support for the use of green spaces by Malaysians should be seen as a significant public health intervention. This would have a favourable impact on society, as well as on the economy and the environment of the country.

The recommendations for future research are to increase duration of time so that it will give more time for late respondents to answer all the questions in the questionnaires and to be able to be included in the study. Next, future study should include more precincts or sections so that it would be feasible to draw general conclusions from the findings. Other than that, make sure to convince respondents that their data or answers given from questionnaires will be strictly keep as confidential data so that they would give honest answers for accuracy of future studies.

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APPENDICES

Appendix A: Questionnaire

Date/Tarikh:

ID No.:



QUESTIONNAIRE/*BORANG KAJI SELIDIK*

RESEARCH TITLE/TAJUK KAJIAN:	KNOWLEDGE, ATTITUDE AND PRACTICE ON THE IMPORTANCE OF GREEN AREA AMONG YOUTHS IN PUTRAJAYA. <i>PENGETAHUAN, SIKAP DAN AMALAN TENTANG KEPENTINGAN KAWASAN HIJAU KALANGAN BELIA DI PUTRAJAYA.</i>
STUDENT'S NAME/NAMA PELAJAR	AHMAD FUDZAIL BIN FAUZI (197477)
STUDENT'S EMAIL & TEL.NO/EMAIL & NO. TEL PELAJAR	<u>ahmad.fudzail99@gmail.com/019-2962964</u>
SUPERVISOR'S NAME/NAMA PENYELIA	HALIZA ABDUL RAHMAN
SUPERVISOR'S EMAIL & TEL.NO/EMAIL & NO. TEL PENYELIA	dr.haliza@upm.edu.my/03-97692403

Instructions/Arahan

This questionnaire contains 4 sections:

Borang kaji selidik ini mengandungi 4 bahagian:

1. Section A: Socio-demographic information
Bahagian A: Maklumat sosio-demografik
2. Section B: General questions
Bahagian B: Soalan Lazim
3. Section C: Knowledge, Attitude and Practice on the importance of green area
Bahagian C: Pengetahuan, Sikap dan Amalan terhadap kepentingan kawasan hijau
4. Section D: Recommendations
Bahagian D: Cadangan

Section A: Socio-demographic information

Bahagian A: Maklumat sosio-demografik

INSTRUCTIONS: Please tick your answer and fill in the blanks for the questions below.

ARAHAN: Sila tandakan jawapan anda dan isi jawapan di ruangan yang disediakan untuk soalan dibawah.

1. Age/Umur:

2. Gender/Jantina:

☐

Male/Lelaki

☐

Female/Perempuan

3. Races/Bangsa:

☐

Malay/Melayu

☐

Chinese/Cina

☐

Indian/India

Others/lain-lain:

4. Level of education/Tahap pendidikan:

☐

Primary/Pendidikan Rendah

☐

Secondary/Pendidikan Menengah

☐

Tertiary/Pengajian Tinggi

5. Household income/Pendapatan Isi rumah:

☐

B40 (<RM4,850)

☐

M40 (RM4,850 – RM10,959)

☐

T20 (>RM10,959)

6. How long have you lived here?/Berapa lamakah anda menetap di kawasan ini?

☐

1-5 years/1-5 tahun

☐

5-10 years/5-10 tahun

☐

More than 10 years/Lebih 10 tahun

Section B: General questions

Bahagian B: Soalan Lazim

INSTRUCTIONS: Please tick your answer based on the questions below.

ARAHAN: Sila tandakan jawapan anda untuk soalan dibawah.

1. Do you know about the green areas?/Adakah anda tahu tentang kawasan hijau?

☐

Yes/Ya

☐

No/Tidak

2. If yes, what is the definition of green areas? (Can only tick **ONE ANSWER**)./Jika ya, apakah definisi bagi kawasan Hijau? (Tandakan hanya **SATU JAWAPAN SAHAJA**).

☐

Green area is an area that consists of green trees or plants./Kawasan hijau adalah suatu kawasan yang mempunyai pokok-pokok atau tumbuh-tumbuhan hijau.

☐

Green area is an area that consists of animals such as insects, fishes and others./Kawasan hijau adalah suatu kawasan yang mempunyai haiwan-haiwan seperti serangga, ikan dan lain-lain.

☐

Green area is an area that consists of lakes (If there are any in residential areas)./Kawasan hijau adalah suatu kawasan yang mempunyai tasik (Jika ada di kawasan kediaman).

☐

Green area is an area that is surrounded with infrastructure facilities./Kawasan hijau adalah suatu kawasan yang mempunyai kemudahan infrastruktur di sekeliling.

☐

All statements above (Overall ecosystem)./Semua pernyataan di atas (Ekosistem keseluruhan).

3. Are you aware that green areas are important for quality of life?/Adakah anda sedar bahawa kawasan hijau adalah penting bagi kualiti kehidupan?

☐

Yes/Ya

☐

No/Tidak

4. What are the importance of the green areas? (Can answer **MORE THAN ONE**)./Apakah kepentingan kawasan hijau? (Boleh tandakan **LEBIH DARIPADA SATU JAWAPAN**).

- ☐ Green areas can absorb excessive sound (Loud noise)./Kawasan hijau dapat menyerap bunyi yang berlebihan (Bunyi bising).
- ☐ Green areas can lower or cool the temperature./Kawasan hijau dapat menurunkan atau menyejukkan suhu.
- ☐ Green areas can conserve environmental conditions./Kawasan hijau dapat memelihara alam sekitar.
- ☐ Green areas can give aesthetic effects that are beautiful, tidy, clean and could attract the public./Kawasan hijau dapat memberikan kesan estetik yang cantik, kemas, bersih dan dapat menarik perhatian orang awam.
- ☐ Green areas could promote healthy lifestyles by providing space for recreational activities./Kawasan hijau dapat menggalakkan gaya hidup sihat dengan menyediakan ruang bagi melakukan aktiviti riadah.

5. Where do you get information about the importance of green areas? (Can answer **MORE THAN ONE**)./Dari manakah anda mendapat informasi tentang kepentingan kawasan hijau? (Boleh tandakan **LEBIH DARIPADA SATU JAWAPAN**).

- ☐ Mass media (Television/Radio)/Media massa (Television/Radio)
- ☐ Printed media (Newspaper/Magazine)/Media cetak (Surat khabar/Majalah)
- ☐ Social Media (Instagram, Facebook, Twitter, Tiktok).
- ☐ Friends/Rakan-rakan
- ☐ Lectures/Kuliah
- ☐ Parents/Ibu-bapa
- ☐ Non-governmental Organization/Badan bukan kerajaan

Others. Please state:/Lain-lain. Sila nyatakan: _____

6. Which social media platform is the most referred to get information about green areas? (Can only tick **ONE ANSWER**)./Platform di sosial media yang manakah dirujuk untuk mendapatkan maklumat tentang kawasan hijau? (Tandakan hanya **SATU JAWAPAN SAHAJA**).

- ☐ Instagram
- ☐ Facebook
- ☐ Twitter
- ☐ Tiktok
- ☐ Internet

Others. Please state:/Lain-lain. Sila nyatakan: _____

7. How long do you interact with green areas in a week time?/Berapa kerapkah anda berinteraksi dengan kawasan hijau di sekitar kediaman anda dalam tempoh satu minggu?

- ☐ 1-2 times/1-2 kali
- ☐ 3-4 times/3-4 kali
- ☐ 4-5 times/4-5 kali
- ☐ More than 5 times/Lebih dari 5 kali

Section C: KNOWLEDGE, ATTITUDE AND PRACTICE

Bahagian C: Pengetahuan, Sikap dan Amalan

INSTRUCTIONS: Please tick your answer based on the questions below

ARAHAN: Sila tandakan jawapan anda untuk soalan dibawah

i. Knowledge on the use of green areas./Pengetahuan terhadap kegunaan kawasan hijau.

No.	Statement/Penyataan	Right/ Betul	Wrong/ Salah
1.	Green areas are widely used for recreational activities such as enjoying the view./Kawasan hijau banyak digunakan untuk melakukan aktiviti rekreasi seperti menikmati pemandangan.		
2.	Green areas are widely used for recreation such as jogging./Kawasan hijau banyak digunakan untuk beriadah seperti jogging.		
3.	Green areas are a key term that refers to both protected and unmaintained natural areas./Kawasan hijau adalah istilah utama yang merujuk kepada kawasan semula jadi yang dilindungi dan tidak dilindungi.		
4.	Green areas are the green component which it is an important part of a city open public spaces./Kawasan hijau adalah komponen hijau yang merupakan bahagian penting dari ruang awam terbuka di bandar.		
5.	Green areas are critical components of resilient, sustainable and healthy communities./Kawasan hijau adalah komponen penting bagi membentuk komuniti yang berdaya tahan, mampan dan sihat.		
6.	Urban parks and green areas contribute numerous directly and indirectly to the prosperity, well-being, social ties and everyday life of people./Taman bandar dan kawasan hijau menyumbang secara langsung dan tidak langsung kepada kemakmuran, kesejahteraan, hubungan sosial dan kehidupan seharian masyarakat.		
7.	Green areas can improve mental health and well-being./Kawasan hijau dapat meningkatkan tahap kesihatan mental dan kesejahteraan kesihatan.		

8.	Interaction with an environment such as green areas may <u>increase one's focus</u> ./Interaksi dengan alam sekitar seperti kawasan hijau boleh meningkatkan daya tumpuan seseorang.		
9.	Interaction with an environment such as green areas may stabilize one's emotions./Interaksi dengan alam sekitar seperti kawasan hijau boleh menstabilkan emosi seseorang.		
10.	Time allocated on the green areas will improve optimistic mood and emotions, reduce daily stress and stabilize emotions./Masa yang diperuntukkan pada kawasan hijau akan meningkatkan mood dan emosi yang optimis, mengurangkan tekanan seharian dan menstabilkan emosi.		
11.	Individuals who interact less with green areas tend to suffer with obesity and other health problems (Emotional stress)./Individu yang kurang berinteraksi dengan kawasan hijau cenderung mengalami obesiti dan masalah kesihatan yang lain (Tekanan perasaan).		
12.	Green areas encourage individuals to do recreation and ultimately have positive impacts on health./Kawasan hijau mendorong individu untuk beriadah dan akhirnya memberi kesan positif terhadap kesihatan.		
13.	Green areas can increase the economic value of real estate./Kawasan hijau dapat meningkatkan nilai ekonomi hartanah.		
14.	Green areas can bridge social divides within communities./Kawasan hijau dapat merapatkan jurang sosial dalam komuniti.		
15.	Green areas can ensure socio-environmental sustainability./Kawasan hijau dapat memastikan kelestarian sosial-persekitaran.		
16.	The presence of green areas leads to more social interactions./Kewujudan kawasan hijau mendorong lebih banyak interaksi sosial di kalangan komuniti.		
17.	Green areas help by supplying clean air, lowers the ambient temperature and preserving the natural balance of the city./Kewujudan kawasan hijau <u>menyumbang</u> kepada udara bersih, merendahkan suhu persekitaran dan memelihara keseimbangan semula jadi bandar.		
18.	Interaction with green areas provides various benefits including it can help reduce stress./Interaksi dengan kawasan hijau		

	<i>memberi pelbagai faedah antaranya dapat mengurangkan tekanan.</i>		
19.	Interaction with green areas provides various benefits including faster healing of the disease suffered./ <i>Interaksi dengan kawasan hijau memberi pelbagai faedah antaranya penyembuhan yang lebih cepat terhadap penyakit yang dialami.</i>		
20.	Interaction with green areas provides various benefits including crime reduction./ <i>Interaksi dengan kawasan hijau memberi pelbagai faedah antaranya pengurangan kadar jenayah.</i>		



ii. Attitude on the importance of green space area./*Sikap terhadap kepentingan kawasan hijau.*

Strongly disagree/ <i>Sangat tidak setuju</i>	Disagree/ <i>Tidak setuju</i>	Not sure/ <i>Tidak pasti</i>	Agree/ <i>Setuju</i>	Strongly agree/ <i>Sangat setuju</i>
1	2	3	4	5

No.	Statement/ <i>Penyataan</i>	Scale/ <i>Skala</i>				
		1	2	3	4	5
1.	The green areas enhance my quality of life./ <i>Kawasan hijau mempertingkatkan kualiti hidup saya.</i>					
2.	I believe the existence of green areas like recreational parks is essential to maintain in a residential area./ <i>Saya berpendapat bahawa kewujudan kawasan hijau seperti taman rekreasi penting dikekalkan di sesuatu kawasan kediaman.</i>					
3.	The management of green areas is the responsibility of the local authority./ <i>Pengurusan kawasan hijau adalah tanggungjawab pihak berkuasa tempatan sahaja.</i>					
4.	The management of the green area is the responsibility of the community./ <i>Pengurusan kawasan hijau adalah tanggungjawab komuniti.</i>					
5.	I often use the green area for recreation./ <i>Saya kerap menggunakan kawasan hijau untuk berekreasi.</i>					
6.	I feel relax whenever I am in green area./ <i>Saya berasa tenang setiap kali berada di kawasan hijau.</i>					
7.	I am aware that the green area helps me with my academic or my career performance./ <i>Saya sedar bahawa kawasan hijau membantu meningkatkan prestasi akademik atau kerjaya saya.</i>					
8.	Visiting green areas like recreational parks is just wasting my time./ <i>Mengunjungi kawasan hijau seperti taman rekreasi hanya membazirkan masa saya.</i>					
9.	We should preserve the green area because of its importance./ <i>Kita perlu memelihara kawasan hijau disebabkan kepentingannya.</i>					
10.	I intend to visit the green area as often as possible because of its benefits./ <i>Saya berhasrat ingin mengunjungi kawasan hijau sekerap mungkin kerana kebanyakannya.</i>					

11.	<i>I will only go to the</i> green area near where I live or work./ <i>Saya hanya mengunjungi kawasan hijau yang berdekatan tempat tinggal/ tempat kerja saya.</i>					
12.	I believe that green area can contribute to the well-being of the surrounding space./ <i>Saya percaya bahawa kawasan hijau mampu menyumbang kepada kesejahteraan ruang persekitaran.</i>					
13.	I think frequent visits to the green area can reduce the health risks./ <i>Saya berpendapat bahawa kekerapan kunjungan ke kawasan hijau dapat mengurangkan risiko terhadap kesihatan.</i>					
14.	I think the subject syllabus should include indicators related to the environmental care such as the importance of green areas./ <i>Saya berpendapat silibus mata pelajaran harus memasukkan indikator berkaitan penjagaan alam sekitar seperti kepentingan kawasan hijau.</i>					

iii. Practice on the importance of green area./Amalan terhadap kepentingan kawasan hijau.

Never/ Tidak pernah	Seldom/ Jarang-jarang	Sometimes/ Kadang-kala	Often/ Kerap	Always/ Sangat kerap
1	2	3	4	5

No.	Statement/Penyataan	Scale/ Skala				
		1	2	3	4	5
1.	When visiting a green area, I will throw garbage in the appropriate place./Ketika mengunjungi kawasan hijau, saya akan membuang sampah di tempat yang sepatutnya.					
2.	After doing recreational activity, I will make sure that the area is clean./Selepas melakukan sesuatu aktiviti seperti beriadah, saya akan memastikan kebersihan kawasan tersebut.					
3.	I will pick and throw the garbage that is surrounding the green area into the dustbin./Saya akan mengutip dan membuang sampah yang terdapat di sekitar kawasan hijau ke dalam tong sampah.					
4.	I will not do anything that could destroy the green areas such as doing an open burning./Saya akan tidak melakukan perbuatan yang menjejaskan kawasan hijau seperti pembakaran terbuka.					
5.	I always educate my family and friends about the importance of the green area./Saya sentiasa mendidik keluarga dan rakan tentang kepentingan kawasan hijau.					
6.	I will always get latest updates in efforts to preserve green areas./Saya akan sentiasa mendapatkan maklumat terkini dalam usaha memelihara kawasan hijau.					
7.	I will participate in programs that are related to the preservation of green areas./Saya akan mengambil bahagian dalam program yang berkaitan dengan pemeliharaan kawasan hijau.					
8.	When I visit green areas, I will bring my own container for drinks and food that could be reused so that it would reduce the amount of total garbage that might pollute green areas./Ketika saya mengunjungi kawasan hijau, saya akan membawa bekas air dan makanan yang boleh diguna semula agar dapat mengurangkan penghasilan sampah yang boleh mencemarkan kawasan hijau.					

9.	I will read brochures that are related to all aspects of green areas if given to me./ <i>Saya akan membaca risalah berkaitan segala aspek kawasan hijau jika diberi kepada saya.</i>					
10.	I will search and find information about the importance of green space areas./ <u>Saya akan berusaha mencari dan menjumpa maklumat tentang kepentingan kawasan hijau.</u>					
11.	I will share information on all aspects that are related to green areas with family and friends./ <i>Saya akan berkongsi maklumat tentang segala aspek berkaitan kawasan hijau bersama keluarga dan rakan-rakan.</i>					
12.	I'm ready to donate money for green areas preservation./ <i>Saya bersedia untuk memberi sumbangan bagi pemeliharaan kawasan hijau.</i>					
13.	I am willing to contribute my energy in (Communal works) to maintain the sustainability of green areas./ <i>Saya sanggup menyumbang dari segi tenaga (Gotong royong) untuk mengekalkan kelestarian kawasan hijau.</i>					
14.	I will report to authorities if I see any damaging acts to green areas (Cutting down plants or trees)./ <i>Saya akan melaporkan kepada pihak berkuasa apabila melihat perbuatan yang menjejaskan kawasan hijau (Menebang pokok).</i>					
15.	I am willing to defend green areas from getting repealed or revoked to other uses./ <i>Saya sanggup mempertahankan kawasan hijau daripada dimansuhkan kepada kegunaan lain.</i>					
16.	I am willing to participate in Non-governmental Organizations that focus on green areas conservation efforts./ <i>Saya sanggup menyertai badan bukan kerajaan yang menjurus terhadap usaha pemeliharaan kawasan hijau.</i>					
17.	I will support efforts to urge the government to gazette more green areas because of its importance./ <i>Saya akan menyokong usaha mendesak kerajaan mewartakan lebih banyak kawasan hijau disebabkan kepentingannya.</i>					

Section D: RECOMMENDATION

Bahagian D: Cadangan

INSTRUCTIONS: Please tick your answer based on the questions below

ARAHAN: Sila tandakan jawapan anda untuk soalan di bawah

1. In your opinion, what is the most appropriate medium to disseminate information regarding the importance of green areas? Choose **ONE** and please provide the reason for your answer./Pada pendapat anda, apakah medium yang paling sesuai untuk mendapatkan maklumat mengenai kepentingan kawasan hijau. *Sila pilih **SATU** dan nyatakan sebab anda.*

☐ Mass media (etc. television/ radio)./Media massa (etc. televisyen/ radio).

☐ Printed Media (etc. newspaper/ magazine)./Media bercetak (etc. surat khabar/ majalah).

☐ Social Media (Instagram, Facebook, Twitter, Tiktok)./Media Sosial (Instagram, Facebook, Twitter, Tiktok).

☐ Public Education programmes./Program pendidikan awam.

☐ Local Community./Komuniti setempat.

☐ Non-Governmental Organization./Badan Bukan Kerajaan.

Others. Please state:/Lain-lain. Sila nyatakan: _____

2. What is the most effective measure to preserve and conserve the green area?
Choose only **ONE**. / *Apakah kaedah yang paling berkesan untuk melestarikan kawasan hijau? Pilih **SATU** sahaja.*

☐ Strengthen the policies and the legislation regarding the green areas. / *Memperkukuhkan dasar dan perundangan berkaitan kawasan hijau.*

☐ Include community engagement in green areas management. / *Penglibatan komuniti dalam pengurusan kawasan hijau.*

☐ Enhance reforestation or replantation. / *Mempertingkatkan penghutanan semula atau penanaman semula.*

☐ Allocate sufficient funds for green management. / *Memperuntukkan dana yang mencukupi untuk pengurusan kawasan hijau.*

☐ Strengthen the role of government agencies (local authority) in green areas management and preservation. / *Memperkasa peranan agensi kerajaan (kerajaan tempatan) dalam pengurusan dan melestarikan kawasan hijau.*

Appendix B: English Consent Form



**JAWATANKUASA ETIKA UNIVERSITI UNTUK
PENYELIDIKAN MELIBATKAN MANUSIA (JKEUPM)
UNIVERSITI PUTRA MALAYSIA, 43400 UPM SERDANG,
SELANGOR, MALAYSIA**

FORM 2.4: RESPONDENT'S INFORMATION SHEET AND INFORMED CONSENT FORM

Please read the following information carefully and do not hesitate to discuss any questions you may have with the researcher.

1. STUDY TITLE :

Knowledge, Attitude and Practice on The Importance of Green Area among Youths in Putrajaya.

2. INTRODUCTION:

This study intends to investigate the knowledge, attitude and practice on the importance of green area among youths in Putrajaya.

3. WHAT WILL YOU HAVE TO DO?

As respondent, you need to sign the consent form which indicate you are interested and willing to cooperate with this study. Then, you need to answer the questions in the questionnaire honestly and accurately. You need to tick (/) in the space given.

4. WHO SHOULD NOT PARTICIPATE IN THE STUDY?

Children and senior citizens in Putrajaya (Outside range of 18-30 years old) and also foreigners that are living in Putrajaya.

5. WHAT WILL BE THE BENEFITS OF THE STUDY:

(a) TO YOU AS THE SUBJECT?

You can evaluate the level of knowledge, attitude and practice on the importance of green by yourself.

(b) TO THE INVESTIGATOR?

Researchers will be able to collect data from the study to identify the level of knowledge, attitude and practice on the importance of green area among youths in Putrajaya. Other than that, researchers can obtain useful data from the study for improvement of preservation and conservation of green areas in Malaysia.

6. WHAT ARE THE POSSIBLE RISKS?

There is no possible risk in this research. All information obtained from respondents are confidential.

7. WILL THE INFORMATION THAT YOU PROVIDE AND YOUR IDENTITY REMAIN CONFIDENTIAL?

Information and identity of respondents are remain confidential.

8. WHO SHOULD YOU CONTACT IF YOU HAVE ADDITIONAL QUESTIONS DURING THE COURSE OF THE RESEARCH?

If you have additional questions, you can contact:

Ahmad Fudzail bin Fauzi Researcher Bachelor of Science (Environmental and Occupational Health) Department of Environmental and Occupational Health Faculty of Medicine and Health Sciences Universiti Putra Malaysia 0192962964 ahmad.fudzail99@gmail.com	Assoc. Prof. Dr. Haliza Abdul Rahman Project Leader Department of Environmental and Occupational Health Faculty of Medicine and Health Sciences Universiti Putra Malaysia Tel: 03-89472403 Fax: 03-89472395 dr.haliza@upm.edu.my
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9. CONSENT

I Identity Card No.
address.....

.....hereby voluntarily agree to take part in the research stated
above *(clinical /drug trial/video recording/ focus group/interview-based/ questionnaire-based).

I have been informed about the nature of the research in terms of methodology, possible adverse effects and complications (as written in the Respondent's Information Sheet). I understand that I have the right to withdraw from this research at any time without giving any reason whatsoever. I also understand that this study is confidential and all information provided with regard to my identity will remain private and confidential.

I* wish / do not wish to know the results related to my participation in the research

I agree/do not agree that the images/photos/video recordings/voice recordings related to me be used in any form of publication or presentation (if applicable)

* delete where necessary

Signature Signature
(Respondent) (Witness)

Date : Name :
I/C No. :

I confirm that I have explained to the respondent the nature and purpose of the above-mentioned research.

Date Signature
(Researcher)

Appendix C: JKEUPM Clearance Approval

Ref. no: UPM/TNCPI/RMC/JKEUPM/1.4.18.2 (JKEUPM)

Date: 6 September 2021

Dear Prof./Dr./Mr./Ms.,

APPLICATION FOR JKEUPM ETHICAL CLEARANCE: APPROVED

With reference to the above, I am pleased to inform you that your application for ethical clearance for the research project entitled '**Knowledge, Attitude, and Practice on the Importance of Green Area Among Youths in Putrajaya**' has been approved.

Please note that the official letter of approval will be issued as soon as possible. However, the ethical clearance is considered effective from the date of this email, and you may now proceed with your research.

Kindly remind the ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.

Researchers should also complete a Study Final Report upon study completion. The form can be obtained from the Ethics Committee for Research Involving Human Subjects (JKEUPM) website (<http://www.tncpi.upm.edu.my/faildokumen>).

If you have any enquiries, please contact Ms. Nurulhasanah Ishak (03-97691605) or Ms. Nor Ellia Abd Ajis (03-97691244).

Note: Please use this reference number for any transaction.

- JKEUPM-2021-367

Thank you.

Yours faithfully,

Prof. Dr. Zamberi Sekawi
Chair
Ethics Committee for Research Involving Human Subjects
Universiti Putra Malaysia

UNIVERSITI PUTRA MALAYSIA

Research title	: Knowledge, Attitude, and Practice on the Importance of Green Area Among Youths in Putrajaya.
Study Site	: Putrajaya
JKEUPM Ref No.	: JKEUPM-2021-367
Researcher	: Ahmad Fudzail Bin Fauzi
Supervisor	: Assoc. Prof. Dr. Haliza Binti Abdul Rahman

Documents received and reviewed with reference to the above study:

1. Ethics Application Form, Version 1 dated 14/6/2021
2. Respondent Information Sheet & Consent (English), Version 2 dated 11/8/2021
3. Respondent Information Sheet & Consent (Malay), Version 2 dated 11/8/2021
4. Proposal (English), Version 2 dated 11/8/2021
5. Questionnaire / Interview (English), Version 2 dated 11/8/2021
6. Questionnaire / Interview (Malay), Version 2 dated 11/8/2021
7. Curriculum Vitae of:
 - a. Assoc. Prof. Dr. Haliza Binti Abdul Rahman

The University Research Ethics Committee, Universiti Putra Malaysia (JKEUPM) operates in accordance to the ICH-GCP Guidelines.

Decision by JKEUPM:

☒

Approved

☒

Permission MUST BE OBTAINED from the respective hospitals/ institutions before conducting the research

☐

Disapproved

Please note that the approval is **VALID UNTIL 6 SEPTEMBER 2022**

Researchers should comply with the following:

- I. Complete a Study Final Report upon study completion (Form 3.2).
- II. Ethical approval is required in the case of amendments/ changes to the study documents/ study sites/ study team.
- III. Applicable for Clinical Trial Studies and Clinical interventional Studies only: Progress Report has to be submitted to JKEUPM at every 6 months from the date of approval (Form 3.1). Report occurrences of all Serious Adverse Events (SAEs), Suspected Unexpected Serious Adverse Reaction (SUSARs) and Protocol Deviation/ Violation at all JKEUPM approved sites to JKEUPM. SAEs are to be reported within 15 calendar days from awareness of event by investigator. Initial report of SUSARs are to be reported as soon as possible but not later than 7