



Factors of Obesity among Students in University in Selangor, Malaysia

*Mohd Farid Shamsudin^a, Siti Aisyah Esa^b, ^{a,b}Universiti Kuala Lumpur Business School,

*Corresponding Author Email: mfarid@unikl.edu.my,
aisyah.esa@s.unikl.edu.my

The purpose of this study is to establish the factors that lead to the obesity problem among university students. This study will be focused on University Selangor (UNISEL) at Shah Alam and Bestari Jaya. 101 respondents from students at UNISEL were selected at random for the pilot test study. This study focuses on the relationship between lifestyle, environmental and genetic factors and the obesity problem. Questionnaires will be used for data collection purposes. There are seven general questions in section A, followed by 17 questions on the subject studies in section B. The results of the pilot study indicate that the items used for the study are reliable and ready for larger scale data collection. The full data collection targets at least 370 respondents based on the sample size table designed by Krejcie and Morgan (1970).

Key words: *Obesity, Lifestyle, Environment, Genetic.*

Introduction

Obesity in Malaysia, especially among students, is becoming a severe problem. The rate has increased exponentially and is increasingly of concern to government agencies, especially the Ministry of Health. Obesity is not only indicative of generalised future health problems for a citizen but also may lead to more specific problems such as type II diabetes, low productivity and other problems related to muscle and movement (Hasliza Hassan et al., 2018). Past research predicted that global obesity would increase to 1.35 billion people by the year 2030 (Che Wan Jasimah et al., 2019). As such, it is very important for research to be conducted to determine the factors that lead to obesity. Lifestyle, environmental and genetic factors are to be used in this research in order to establish their relations with obesity. It is important for governments, parents and individuals themselves to know the causal factors of

obesity in order to best avoid them, a reduction in obesity levels leads to an overall benefit for a nation (Joy Parkinson, 2017).

Research Question

1. Do lifestyle factors contribute to obesity among UNISEL students?
2. Do environmental factors contribute to obesity among UNISEL students?
3. Do genetic factors have an influence on obesity among UNISEL students?

Research Objectives

1. To identify how lifestyle factors contribute to obesity among UNISEL students.
2. To determine how environmental factors can affect obesity among UNISEL students.
3. To investigate how genetic factors affect obesity among UNISEL students.

Literature Review

Obesity

Hasliza Hassan (2018) reported that Malaysia has the highest level of fat mass among Asian countries such as Indonesia, Laos, Myanmar, Thailand, The Philippines, Cambodia and Vietnam; in 2017, 46.3% of Malaysian people are classified as overweight. This is clear evidence of an obesity problem in Malaysia, and is very worrying (Che Wan Jasimah et al., 2019). If excessive weight problems are not controlled at an early stage they will lead to obesity and will cause the individual to have more serious problems such as heart disease, cancer, diabetes, high blood pressure in the future (Charunee Thiabpho, 2018).

According to the report, Target and Indicators for Health 2020 (2018), produced by the WHO the BMI standard to indicate people who are overweight or obese among those aged 18 years and above is (BMI = 25 kg/m²) and (BMI = 30 kg/m²). This means that a BMI of 25 to 29.9 is (Saudi et al., 2019). Additionally, if BMI is calculated by the weight of person in kilograms divided by their height in meters (kg / m²), than a score of more than 30 is obese (Sinaga et al., 2019; Abdel, 2017).

A person's weight and obesity issues can also be analysed in terms of their age, gender and race (Shahid Islam, 2019). According to Jennifer Walsh (2017), obesity is related to race, age and gender and she states that in persons aged 60 years and above, the prevalence of obesity will reduce, and that woman are more commonly obese, but men are more commonly overweight.

Martine Hackett (2015) emphasises that excess weight and obesity is seen more often in high-income countries, but a significant increase is seen in developing countries, mostly among urban residents (Makhsun et al., 2018a). In less developed countries, there is a lower prevalence of fast food restaurants, and a lesser tendency to utilise their services, conversely, in rapidly developing and developed countries, fast food is more common as people are seeking time savings from not cooking their own food (Makhsun et al., 2018b).

Lifestyle

Hasliza Hassan (2018) indicates that lifestyle can be defined as the way people are formed based on specific economic, geographical, and cultural and religious factors. It can also be seen as the characteristics of people in their daily life, function in job, day-to-day activities, leisure activities and diet. Martine Hackett (2015) also states that lifestyle plays an important role in defining how people live their life; hence, from there he concludes that any changes in lifestyle will affect one's health.

Jennifer Walsh (2017) indicates that the lifestyle factors that affect individual health can be categorized into the following: diet and body mass index (BMI), exercise, sleep time, study, application of modern technology and recreation time. According to Hasliza Hassan (2018) the greatest lifestyle factor that directly impacts health is diet, obesity is the after-effect of a poor diet. Unhealthy diets are those with less nutrition intake and more fast food intake in daily life (Shahid Islam, 2019) and this can be measured by body mass index (BMI).

Environment

Eduardo Botti Abbade, (2018) says that environmental factors can be defined as the surrounding or condition in which human activity takes place, and can be divided into two categories. First, microenvironment refers to a close relationship with the individual. Second, macro environment, which is, the world as one whole population. Che Wan Jasimah (2019) agreed with Emmanuelle Ries's (2015) statement that environmental factors are defined as all the things that surround the individual.

According to Eduardo Botti Abbade, (2018), obesity is determined by macro environment, microenvironment, along with biological and behavioural factors. Emmanuelle Ries, (2015) found that influences from the environment such as common types of food surrounding people, and exposure to a healthy lifestyle play an important role towards reducing obesity or overweight problems. Based on their research (Emmanuelle Ries, 2015), macro environment factors such as the food industry, fitness industry or micro industry such as the gym, workplace and family members shows a higher correlation on influencing individuals than other factors.



Denise Conroy (2018) stated that daily food consumption, healthy diet and regular physical activities are the best defence mechanism against obesity. However, the current environment is continuously promoting excessive food consumption and less physical activities (Shahid Islam, 2019; Abdullah and Yusoff, 2018). This can be seen from the widespread advertisement on television about food and overall public effort towards obesity problems.

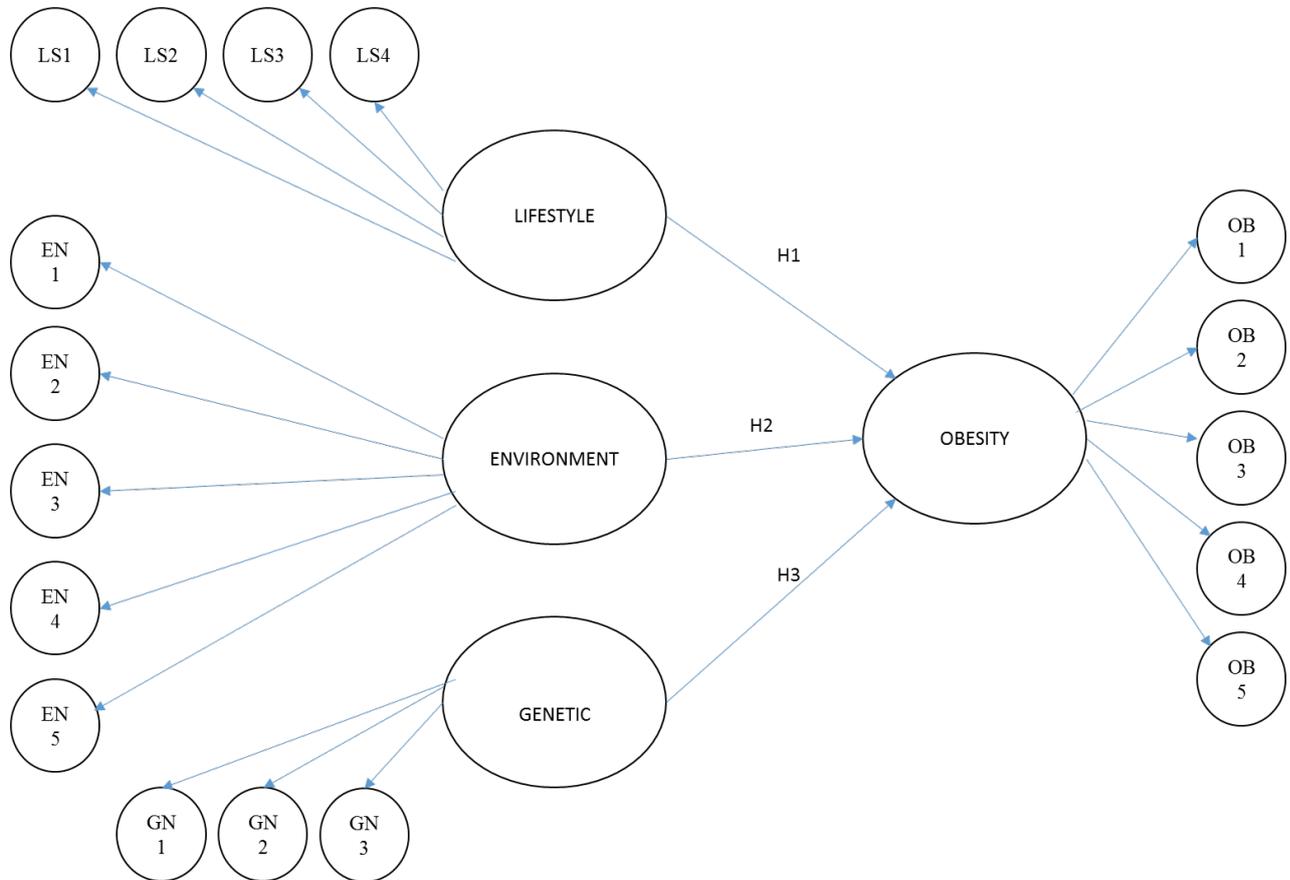
Genetic

According to Somasundaram Kamalasundari (2016), children are more likely to be overweight when their parents are overweight. This is because children will inherit genetics from their parents (Denise Conroy (2018). If a father or a mother is overweight, then their child is also likely to be overweight as they inherited the same genes. This statement is supported by the identification of the gene which is responsible for predisposing a child to an increased risk of being overweight or obese (Somasundaram Kamalasundari (2016).

Uruwan Yamborisut (2018) points out that basic metabolic rate (BMR) or metabolism can be the cause of obesity. BMR is defined as the rate at which the body uses energy while relaxing and maintaining vital functions such as breathing, keep warm and cell production. Basic metabolic rate is responsible for 60% of total energy use in inactive adults. This means that individuals with basic metabolic rate above 60 percent are more likely to be healthy while individuals with low basal metabolic rate are more predisposed to obesity.

Lastly, Uruwan Yamborisut (2018) stated that obesity is a complex multifactorial condition with an important genetic component and comes from both descriptive epidemiological and heritability studies. In terms of epidemiology, data from twins and family studies have suggested that individuals with a family history of obesity have a higher risk of obesity, on the scale of 1.5-5 times. Heritability can be defined as the proportion of phenotypic variation among individuals in the population due to genetic contribution and the heritability of obesity is now widely accepted as being between 40% -70% based on the twin budget, family- and adoption studies (Somasundaram Kamalasundari (2016).

Conceptual Framework



Hypothesis

- H1: There is a relationship between lifestyle factors and obesity among students in UNISEL
- H2: There is a relationship between environmental factors and obesity among students in UNISEL
- H3: There is a relationship between genetics and obesity among students in UNISEL

Methodology

This scope of this study is students who are currently studying at UNISEL, the study encompasses both Shah Alam and Bestari Jaya campuses. There are about 10,000 students across both campuses and therefore the required sample according to Krejcie and Morgan (1970) is 370.444. qQuestionnaires will be distributed with a 20% markup in numbers to avoid issues with non-response and missing data by the end of data collection. A pilot test is to be conducted prior to the actual field data collection.

Pilot study

A pilot test was conducted to determine the face or content validity of the questionnaire as well as the construct validity and reliability of the scale used. Essentially, face validity addresses whether the developed instrument measures the concepts under study (Taherdoost, 2016; Meyer and Meyer, 2016). In the first phase, the study involved senior academics in UNISEL who have considerable research experience. They were requested to provide their expert opinions so as to improve the content validity of the developed instrument. After acquiring the expert feedback, the instrument was revised accordingly. In the second phase, this study proceeded to conduct a face-to-face monitoring questionnaire survey in March 2019 at UNISEL Shah Alam campus, which involved 101 undergraduates in their first academic semester from the intake of January to March 2019. All 101 respondents completed and returned the questionnaire, resulting in a response rate of 100%. This study received positive feedback on the questionnaire survey in terms of wording. Hence, all items were retained. Table below represent the results of all the variables used in the study.

Table 1: Results of Cronbach's alpha for pilot study (N = 101)

No.	Variables	Number of items	Cronbach's alpha (α)	Clarification
1.	Lifestyle (IV)	4	0.800	Very good
2.	Environment (IV)	5	0.819	Excellent
3.	Genetic(IV)	3	0.787	Very good
4.	Obesity (DV)	5	0.886	Excellent
	Total	17		

Conclusion

This study looked for the relationship between three main independent variables and their effect on obesity. It is hoped that all parties can use these results in order to design diet practice, policy or rehabilitation treatments in order to curb the issues (Meyer and Meyer, 2017). Obesity in the long term may affect the future of an individual and can cause many other consequences such as reduced productivity and increased medical cost. The full data result will be presented once all data is collected (Abdullah et al., 2018).



REFERENCES

- Abdel, E. R. (2017). The Role of Fiscal Space in Attracting FDI. *Asian Journal of Economic Modelling*, 5(4), 396-401.
- Abdullah, N., Safiah, N., Ghani, A. A., Maamor, S., Wahab, N. A., Razimi, A., ... & Elias, N. H. (2018). Examining Level of Spirituality among Malaysian Youth. *Indian Journal of Public Health Research & Development*, 9(11).
- Abdullah, F., & Yusoff, S. S. A. (2018). Consumer Protection on Unfair Contract Terms: Legal Analysis of Exemption Clauses in B2C Transactions in Malaysia. *International Journal of Asian Social Science*, 8(12), 1097-1106.
- Charunee Thiabpho, Supranee Changbumrung, Ngamphol Soonthornworasiri, Bencha Yoddumnern-Attig, Patcharaporn Thaboot, Pattharawan Nissayan, Karunee Kwanbunjan, (2018) "Intensive lifestyle modification program on weight loss and metabolic syndrome risk reduction among obese women in rural areas of Thailand", *Journal of Health Research*, Vol. 32 Issue: 3, pp.203-216.
- Che Wan Jasimah Wan Mohamed Radzi, Hashem Salarzadeh Jenatabadi, Ayed R. A. Alanzi, Mohd Istajib Mokhtar, Mohd Zufri Mamat, Nor Aishah Abdullah (2019) "Analysis of Obesity among Malaysian University Students: A Combination Study with the Application of Bayesian Structural Equation Modelling and Pearson Correlation", *International Journal of Environmental Research and Public Health* Vol 16 (3), pp. 492-509.
- Denise Conroy, Sandrara D. Smith, Catherine Frethey-Bentham, (2018) "Weighing the odds: an exploration of resistance to obesity and overweight", *Journal of Social Marketing*, Vol. 8 Issue: 4, pp.421-441.
- Eduardo Botti Abbade, (2018) "The relationships between obesity-increasing risk factors for public health, environmental impacts, and health expenditures worldwide", *Management of Environmental Quality: An International Journal*, Vol. 29 Issue: 1, pp.131-147.
- Emmanuelle Ries, (2015) "Taking obesity into account: Why it pays to nudge employees into losing weight", *Human Resource Management International Digest*, Vol. 23 Issue: 4, pp.38-40.
- Hasliza Hassan, Abu Bakar Sade, Muhammad Sabbir Rahman, (2018) "Obesity and overweight issues could undermine Malaysia's competitiveness", *International Journal of Human Rights in Healthcare*, Vol. 11 Issue: 3, pp.204-213.



- Jennifer Walsh, Kendra Kattelmann, Adrienne White, (2017) "Stage-based healthy lifestyles program for non-college young adults", *Health Education*, Vol. 117 Issue: 2, pp.148-161.
- Jermstittiparsert, K. & Sawasdee, A. 2012. "Formal Education for Non-Thai or Undocumented Person in Thailand amidst the Challenge of Nationalism and Transnationalism: A Case Study of Wat Sirimongkhon School, Samut Sakhon Province." *Kasetsart Journal - Social Sciences* 33 (2): 203-213.
- Joy Parkinson, Chris Dubelaar, Julia Carins, Stephen Holden, Fiona Newton, Melanie Pescud, (2017) "Approaching the wicked problem of obesity: an introduction to the food system compass", *Journal of Social Marketing*, Vol. 7 Issue: 4, pp.387-404.
- Madrid, D., Ahmed, U., & Kumar, R. (2019). EXAMINING THE IMPACT OF CLASSROOM ENVIRONMENT ON ENTREPRENEURSHIP EDUCATION: CASE OF A PRIVATE UNIVERSITY IN BAHRAIN. *Journal of Entrepreneurship Education*, 22(1), 1-8.
- Makhsun, A., Yuliansyah, Y., Pahlevi, M.R., Razimi, M.S.B.A., & Muhammad, I. (2018a). Persistence of earnings after IFRS adoption in banking companies listed on Indonesian stock exchange. *Academy of Accounting and Financial Studies Journal*, 22(Special Issue), 1-6
- Makhsun, A., Yuliansyah, Y., Razimi, M.S.B.A., & Muhammad, I. (2018b). The implementation of international financial reporting standard (IFRS) adoption on the relevance of equity and earning book value. *Academy of Accounting and Financial Studies Journal*, 22(Special Issue), 1-7.
- Martine Hackett, Clara Gillens- Eromosele, Jacob Dixon, (2015) "Examining childhood obesity and the environment of a segregated, lower-income US suburb", *International Journal of Human Rights in Healthcare*, Vol. 8 Issue: 4, pp.247-259.
- Meyer, D.F., & Meyer, N. (2017) Management of small and medium enterprise (SME) development: An analysis of stumbling blocks in a developing region, *Polish Journal of Management Studies*, 16 (1), 127-141.
- Meyer, N., & Meyer, D.F. (2016) The relationship between the creation of an enabling environment and economic development: A comparative analysis of management at local government sphere, *Polish Journal of Management Studies*, 14 (2), pp. 150-160.
- Shahid Islam, Neil Small, Maria Bryant, Tiffany Yang, Anna Cronin de Chavez, Fiona Saville, Josie Dickerson, (2019) "Addressing obesity in Roma communities: a



community readiness approach", *International Journal of Human Rights in Healthcare*, Vol. 12 Issue: 2, pp.79-90.

Saudi, M. H. M., Sinaga, O., Roespinoedji, D., & Razimi, M. S. A. (2019). The role of renewable, non-renewable electricity consumption and carbon emission in development in Indonesia: Evidence from Distributed Lag Tests. *International Journal of Energy Economics and Policy*, 9(3), 46-52.

Sinaga, O., Saudi, M. H. M., Roespinoedji, D., & Razimi, M. S. A. (2019). The Dynamic Relationship between Natural Gas and Economic Growth: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, 9(3), 388-394.

Somasundaram Kamalasundari, Ganapathysamy Hemalatha, Premalatha Mundankandath Raghavan, (2016) "Independent and cumulative effect of diet and exercise on reduction of adiposity measures among obese people", *Nutrition & Food Science*, Vol. 46 Issue: 6, pp.730-741.

Taherdoost, H. 2016. Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Advance Research in Management*, Vol. 5 Issue 2, pp.18-27.

Uruwan Yamborisut, Piyanuch Visetchart, Wiyada Thasanasuwan, Weerachat Srichan, Rittirong Unjana, (2018) "Parental feeding practice is associated with child's body mass index in Thai school-aged children: A case study in Don Tum district, Nakhon Pathom, Thailand", *Journal of Health Research*, Vol. 32 Issue: 1, pp.82-94.