

Demographic Analysis on Self-Regulation among Malaysian University Students during the Covid-19 Pandemic

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ABSTRACT

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KEYWORDS:

Self-regulation
Covid-19
University students

CITATION:

Norsimah Dasan, Norkiah Arsat, & Mohd Mahadzir Rahimi. (2022). Demographic Analysis on Self-Regulation among Malaysian University Students during the Covid-19 Pandemic. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 7(9), e001662.
<https://doi.org/10.47405/mjssh.v7i9.1662>

The Covid-19 pandemic has had a major impact on the lives of the entire population of the world. The effect is also experienced by university students who must be independent in learning. Therefore, self-regulation is needed in the management of their life at the university. The concept of self-regulation is an individual's belief about his ability to plan and control behavior. Students at university need these factors to ensure that the patterns of thinking and feeling produced are in line with their actions of completing tasks and at the same time control their behavior from harmful social and environmental effects. Demographic factors such as gender, ethnicity, place of residence of students, field of study and duration of study are focused as variables that are assumed to influence differences in student self-regulation. This study was conducted using a quantitative method involving 590 students of Universiti Malaysia Sabah who were selected through random sampling. The Adolescent Self-Regulation Inventory instrument was used to obtain feedback from the sample. Data were analyzed using IBM SPSS 26.0 software. The results of the study found that self-regulation does not differ significantly based on gender, ethnicity, student's place of residence, field and period of study. This study contributes to the addition of psychological knowledge related to student self-regulation during the Covid-19 pandemic.

Contribution/Originality: This paper contributes to the existing literature on self-regulation during pandemics. In line with the social cognitive theory by [Bandura \(1986\)](#), the focus on some demographic factors among higher education students presents diverse effects on students' self-regulation in continuing their role in performing tasks and social activities.

1. Introduction

The Covid-19 outbreak has drastically changed the current scenario in a variety of human activities. Regardless of economic and social status, as well as location, the pandemic exhibits harmful health effects that can lead to death to everyone.

Various industries have also been affected by the risks of Covid-19 including the education industry. At the beginning of the Movement Control Order (MCO) in March 2020, most educational programs offered by Higher Education Institutions in Malaysia have temporarily used online learning methods to replace conventional methods of face-to-face teaching and learning. In other words, educators need to proactively provide information and teaching materials for students to access through telecommunication lines no matter where they are located. This also means that students need to be similarly proactive to ensure that learning objectives can be achieved at the end of the online teaching session.

To continue the role as a student without face-to-face supervision as well as control actions in line with social norms and health compliance to break the chain of Covid-19 infection, self-regulation factors are considered as an important role. Self-regulation factors will tend to affect their academic excellence and their role as responsible community members.

1.1. Research Background

Self-regulation has become a popular scope of study in tackling psychological problems among students towards excellent academic and personality achievement. However, previous studies have focused less on its relevance in pandemic situations. Self-regulation is based on the individual's beliefs about his or her ability to plan and control behavior (Zimmerman, 2000). It is directly related to self-resilience, self-control and delayed self-satisfaction as well as characteristics of internal ability to control emotions, attention and behavior (Raffaelli & Crockett, 2003). Consistent with this principle, it gives a clear meaning that individuals who are left to make decisions on their own are likely to face high risk if they have pre-existing low self-regulation. Students at universities need this factor for ensuring that the thought patterns and feelings produced do not affect their actions to perform learning tasks and at the same time still control behavior towards social and environmental effects.

Thoughts and behavior changes in accordance with the current health condition should be emphasized. University students facing the effects of the Covid-19 pandemic are confronted with changes in learning methods (Stevanovic et al., 2021), social interactions (Mondada, et al., 2020), which to some extent impact student psychology and the need for modification of action (Romero-Blanco et al., 2020). As this pandemic spread so fast and the MCO was declared, students had to comply to break the chain of the Covid-19 virus by restricting their movements. Adaptation to virtual learning methods, internet-based assignments, compliance with Standard Operating Procedures (SOP), control of activities and social interactions and so on. The consistency of self-regulation is important in planning and control of life as well as carrying out their roles as students and individuals in society especially during this pandemic period.

Self-regulation is no longer foreign to research in the field of education. It includes the diverse scope of the study related to academic achievement (Villacencio & Bernado,

2013), emotional control of students, social environment of learning and so on. Generally, self-regulation has been identified as one of the important aspects that play a role in an individual's life. Previous studies linked self-regulation to learning and academic performance (Herndon & Bembenuddy, 2017; Baird et al., 2009). Past researchers have also linked it to social behavioral problems (Leventhal et al., 2016; Nozadi et al., 2015; D'Lima et al., 2012; Rothbart, 2011).

Baumeister et al. (1994) stated that self-regulation failure is considered a major social pathology in this decade. It has its own role in an individual's efforts to change his or her response to the environment. Baumeister et al. (1994) explains in detail the role of this self-regulation in the life of an individual. According to him, the intended response includes actions, thoughts, feelings, desires and performance. Without self-regulation, the individual will respond to a situation based on learning, habits and natural inclinations. Therefore, with self-regulation, it is able to prevent natural or normal responses from occurring and replace them with other responses. In other words, it has an element of rejection.

Baumeister and Heatherton (1996) also pointed out that lack of self-regulation is due to a person being unstable, unclear, and inconsistent with standards or standards related to societal values that have been applied by significant parties to the person such as parents and family members. Their self-regulation is also incapable of overseeing actions or because they lack the strength to cope with the responses they wish to control. In other words, self-regulation failure refers to an inability to cope with unwanted thoughts, feelings and impulses so that it can affect one's original planning and goals. The ability of each individual to regulate themselves is limited. However, it can be renewed from time to time and can increase and decrease depending on the frequency of a situation encountered or training gradually.

This is in line with the Social Cognitive Theory developed by Bandura (1986). He reinforces that the functioning of an individual in life consists of three important factors that mutually influence each other. The three factors are environment, personality and behavior. If viewed in the period of the pandemic, life threatening health environment causing personal factors especially self-control, goal formation, delaying the desire included in self-regulation to compliance with the SOPs and implementation of roles as students and community members.

Meanwhile, Moilanen (2007) focuses on this self-regulation in two aspects that can help students make the right decisions, namely long-term self-regulation and short-term self-regulation. In the case of perceptions of risky sexual behavior, short-term self-regulation such as giving a repulsive response immediately and controlling emotions at the time the stimulus is received. While long-term self-regulation refers to examples such as individuals making assessments, controlling emotions and making decisions for a certain period of time, as not to jeopardize their goals.

Therefore, self-regulation needs to be strengthened from time to time. Especially when it is related to the development of student environment entities during the pandemic. Scientific evidence, especially the relevance of student self-regulation based on gender, ethnicity, location and learning factors at the university during the pandemic is still lacking. Hence, this study aims to fill the gap by producing a scientific data identifying self-regulation among university students as they go through the period of the Covid-19 pandemic.

1.2. Research Objective

This study was conducted to identify differences in self-regulation among university students during the Covid-19 pandemic period based on several demographic aspects namely gender, ethnicity, students' residence, faculty of study, and current year of study at the university.

1.3. Research Question

Is there any significant effect in students' self-regulation based on gender, ethnicity, residence, field, and duration of study?

1.4. Research Hypotheses

There are 5 hypotheses for this study:

Ho1 There is no significant effect of students' gender towards self-regulation.

Ho2 There is no significant effect of students' ethnicity towards self-regulation.

Ho3 There is no significant effect of students' residence towards self-regulation

Ho3 There is no significant effect of students' field of study towards self-regulation.

Ho4 There is no significant effect of students' duration of study towards self-regulation

2. Research Methodology

2.1. Research Design

The study design is quantitative using the survey method. Survey method is appropriate in this study because it is a systematic method of collecting information from a sample for the purpose of constructing larger quantitative descriptors of attributes for a single population of which the sample is a member. To obtain data, questionnaires were used and distributed to respondents through Google Form.

2.2. Sample And Research Location

The respondents of the study were a total of 590 students among the students of Universiti Malaysia Sabah (UMS). Questionnaire data collected found that the sample of students consisted of fields of study available in major universities and UMS branches. This field of study can be identified based on the faculties available at the university. A total of 10 faculties namely the Faculty of Engineering (FE), Faculty of Humanities, Arts and Heritage (FHAH), Labuan Faculty of International Finance (LFIF), Faculty of Engineering and Informatics (FEI), Faculty of Business, Economics and Accounting (FBEA), Faculty of Sustainable Agriculture (FSA), Faculty of Medicine and Health Sciences (FMHS), Faculty of Psychology and Education (FPE), Faculty of Food Science and Nutrition (FFSN) and the Faculty of Science and Natural Resources (FSNR).

2.3. Research Instruments

The instrument used was the Adolescents Self-Regulation Inventory questionnaire developed by [Moilanen \(2007\)](#). This questionnaire considers the context of short-term and long-term time constraints among adolescents on the theoretical basis that

adolescents can organize and regulate long term emotions and actions to achieve desired goals. The questionnaire contained 27 items. It is divided into short-term item components and long-term item components. There is a total of 13 items for short-term self-regulation and 14 items for long-term self-regulation. This questionnaire uses a five-point Likert scale that is "Absolutely not true about me", "Not true about me", "True and not true about me", "There is truth about me", or "Very true about me". This instrument also has a high reliability value of 0.86.

2.4. Data Collection and Analysis

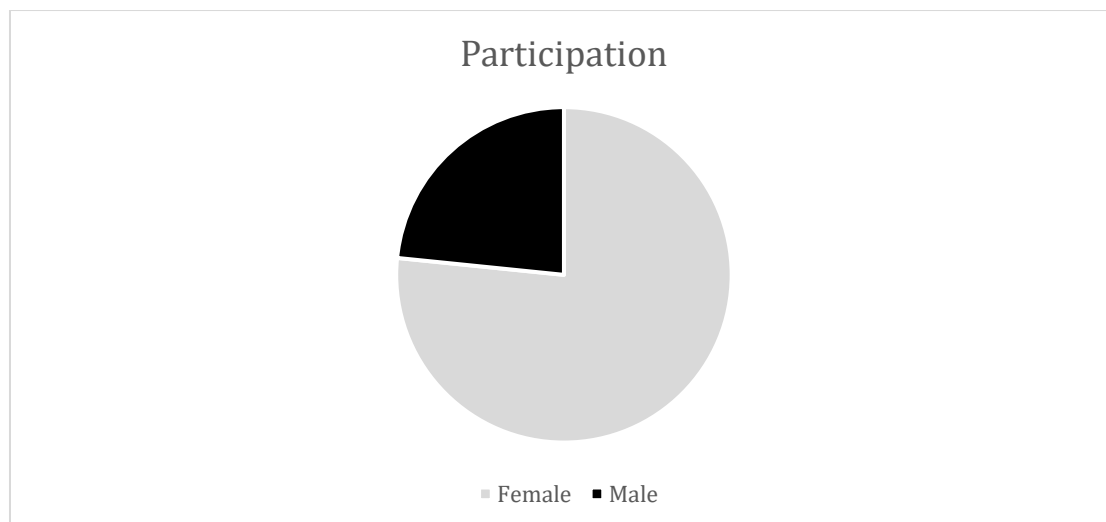
This research uses two main types of statistics, namely descriptive statistics, and inferential statistics. Descriptive statistics are used through the analysis of mean scores, percentages, and frequencies in particular to analyze the demographics of respondents. While to answer the hypotheses formed, inferential statistics using T Test analysis and Anova One-way is used.

3. Research Findings

3.1. Descriptive Findings

Based on the descriptive analysis, female students who participated in this study recorded a total of 76.6% which is more than the total number of male students who recorded 23.4% only. The actual gender participation is shown in [Figure 1](#). Meanwhile, Sabah Native students are the most numerous ethnic groups, which is half of the total sample of 54.7%. This is because this university is located in the State of Sabah and many of the students are among the natives ethnic of this state. Followed by the group of students from the ethnic Malay, Chinese, Natives of Sarawak, and Indian. Only a handful of overseas students took part, and most of them are students from China and those belonging to other ethnic groups.

Figure 1: Respondent Study Participation



The distribution of residences occupied by students during the period of study during the Covid-19 pandemic are as follows as many as 77.8% of students live in their family homes. This means that most of the students have managed to safely return home to their families during the outbreak. However, there are still some 22.2% of students who still live in their

hostels, rental accommodations and relatives' houses, others and small rooms tenancy. In the case of seniority, the third-year students are the highest respondents to the questionnaire distributed which is 36.3%, followed by first year and second year students with an almost equal number with 28.5% and 24.7% respectively. Meanwhile, the final year students (Year 4) involvement are the least with 10.5% participation only.

3.2. Inference Findings

ANOVA analysis was used to identify differences in the self-regulation of university students based on gender, ethnicity, location of residence, field of study and current years of study. The results of the study are shown in the following tables.

The results of the One-way ANOVA analysis shown in [Table 1](#) found that the p value was not significant ($F(1,588) = 3.28, p = 0.07, p > 0.05$). These results indicate that there is no significant effect in self-regulation among respondents based on their gender.

Table 1: Results of ANOVA Analysis for Self-regulation Based on Gender

Variation Source	JKD	dk	MKD	F	Sig.p
Self-regulation					
Between Groups	.477	1	.477	3.28	.070
In Group	85.326	588	.145		
Total	85.803	589			

The results of the One-way ANOVA analysis as in [Table 2](#) above found that the p value was not significant ($F(5,584) = .921, p = .467, p > 0.05$). Therefore, these results indicate that there is no significant effect in self-regulation among respondents based on their ethnicity.

Table 2: Results of ANOVA Analysis for Self-regulation Based on Ethnicity

Variation Source	JKD	dk	MKD	F	Sig.p
Self-regulation					
Between Groups	.671	5	.134	.921	.467
In Group	85.132	584	.146		
Total	85.803	589			

The results of the One-way ANOVA analysis as in [Table 3](#) above found that the p value was not significant ($F(5,584) = .063, p = .997, p > 0.05$). These results indicate that there is no significant effect in self-regulation among respondents based on their residential location.

Table 3: Results of ANOVA Analysis for Self-regulation Based on Residential Location

Variation Source	JKD	dk	MKD	F	Sig.p
Self-regulation					
Between Groups	.046	5	.009	.063	.997
In Group	85.454	584	.147		
Total	85.803	589			

The results of the One-way ANOVA analysis as in [Table 4](#) above found that the p value was not significant ($F(9,580) = 1.521, p = .137, p > 0.05$). These results indicate that there is no significant effect in self-regulation among respondents based on their field of study.

Table 4: Results of ANOVA Analysis for Self-regulation Based on Field of Study

Variation Source	JKD	dk	MKD	F	Sig.p
Self-regulation					
Between Groups	1442.314	9	160.257	1.521	.137
In Group	61107.85	580	105.358		
Total	7	589			
	62550.17				
	1				

The results of the One-way ANOVA analysis as in [Table 5](#) above found that the p value was not significant ($F(3,586) = .703, p = .551, p > 0.05$). Thus, these results indicate that there is no significant effect in self-regulation among respondents based on their duration of study.

Table 5: Results of ANOVA Analysis for Self-regulation Based on Year of Study

Variation Source	JKD	dk	MKD	F	Sig.p
Self-regulation					
Between Groups	.308	3	.103	.703	.551
In Group	85.495	586	.146		
Total	85.803	589			

4. Discussion

This study was conducted during the MCO period caused by the Covid-19 pandemic which resulted in the fatality of many people throughout the country. Precautions such as implementing social distancing and hygiene practices are emphasized by the government so that the community is secure from this deadly infection. Accordingly, educational institutions are required to implement online teaching and learning, and this has an impact on the self-regulation among students to continue their study systematically and to avoid any influence that might cause learning goals to be unattainable.

On that basis, studies related to differences in self-regulation based on students' gender, ethnicity, student residence during the pandemic, faculty and year of study of students were analyzed. The results of the study found that self-regulation has no difference based on all these demographic factors.

The results of this study are different from the studies conducted by [Abdi Zarrin et al. \(2020\)](#) and [Huang \(2013\)](#) who found that female students have high self-regulation when related to studies. Yet, for [Youngho and Leana's \(2014\)](#) study, the differences occur only over a short period of time. Self-regulation can undoubtedly make a difference when it involves time constraints. Thus, their studies have proven that there is no difference of self-regulation when involving long-term periods. In this regard, the findings of the study are in line with their studies. This occurs because this self-regulation study started after 8 months of several phases of MCO. As a result, adaptations to life during the Covid

pandemic have already taken place. Thus, neither male students nor female students have different self-regulation.

In addition, several studies involving ethnicity in the context of self-regulation showed significant differences (Griffin et al., 2006; Caughy et al., 2013; Guirguis, 2015) and variation from the findings of this study. Their findings were based on different testing factors between ethnicities, differences in the majority and ethnic minorities involved and the duration of the study conducted were different. Meanwhile, this study was conducted in one single period, namely during the Covid-19 pandemic period with strict MCO control to all Malaysians regardless of their ethnicity.

The initial hypothesis of this study on the students' environment by focusing on the factor of living with self-regulation was acceptable. Students living in a parent's house, rented house, relative's house, rented room or others make no difference to their self-regulation. Although the ecological theory by Bronfenbrenner (1977) states that thinking and behavior are different based on the individual's environment, when the Covid-19 outbreak occurs, students' self-regulation has no difference based on their living arrangements to achieve the national learning goals online.

The findings of this study also show that the field and years of study do not make a difference effect to their self-regulation. Face-to-face teaching and learning in all the faculties were affected by this pandemic. Students in the science and literature streams need to adjust to the new norms enforced by the influence of the Covid-19 pandemic. The same goes for the student's year of study, as students in all the years (1, 2, 3 and 4) do not have different effect in self-regulations. This means that the pandemics that occur are passed together by all levels of students and each understands and achieve their goals as students and as individuals in the society.

5. Implications

5.1. Implication to Science and Theory

This study provided additional scientific information to knowledge in the field of psychology and education during the Covid-19 outbreak. As in this study, the self-regulatory achievement index of university students did not differ based on demographic factors during the pandemic period. This situation tends to interpret self-regulation based on the health risks will not differentiate individual profiles in setting goals and modifying actions.

The application of Social Cognitive Theory by Bandura (1986) also confirms the findings of this study. Based on the environmental factors, significantly the Covid-19 pandemic, the occurrence of self-control and goal setting included in self-regulation in each student was shown by the behavior of continuing their studies online and not engaging in any social activities that violate the Standard Operation Procedures.

5.2. Implication to Practice

The practice of self-regulation during the pandemic period needs to be strengthened. Although it does not show differences based on demographics during this pandemic, efforts to improve self-regulation should be made so that students in Institutions of

Higher Learning are always prepared to face the hazard of innumerable other pandemics in the future.

6. Conclusion

The Covid-19 pandemic had a major impact on the lives of the entire population of the world. The effect is also felt by students at the university. They need to have self-regulation to plan toward their goals as a student and control behavior in order to avoid the covid-19 virus. This study also proves that during this pandemic period, self-regulation does not differ based on student demographic factors such as gender, ethnicity, students' residence, faculty of study and year of study. In short, all the students play their respective roles as university students by obeying the new norms of learning and also as social individuals in society by obeying to the Covid-19 pandemic standard operation procedures.

Ethics Approval and Consent to Participate

All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Informed consent was obtained from all participants according to the Declaration of Helsinki.

Acknowledgement

Part of this article was extracted from a doctoral thesis submitted to Universiti Malaysia Sabah, Sabah

Funding

This study was conducted with the support from Special Fund Scheme, Universiti Malaysia Sabah. (SDK-0287-2020).

Conflict of Interests

The authors declare no conflict of interest.

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