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ASSESSING SUSTAINABLE LITERACY AMONG LEARNERS AT OPEN UNIVERSITY MALAYSIA

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ABSTRACT

Sustainable Development Goals (SDGs) are universal and require participation from both industrial and public sectors, with awareness serving as a key advocacy tool. This study focuses on adult learners at Open University Malaysia (OUM), which introduced the 17 SDGs in 2018 through its course OUMH1603: Study Skills for the 21st Century. This course, mandatory for all diploma and undergraduate students, emphasizes 21st-century soft skills, literacy skills, the 4Cs (Creative Thinking, Critical Thinking, Collaborative and Communication Skills), Global Citizenship Education, and Environmental Education. The study aims to analyze students' understanding of sustainability and evaluate their knowledge of the 17 SDGs. A questionnaire was distributed to new diploma and undergraduate students enrolled in the May 2023 cohort of OUMH1603. Data collected in the 3rd week of the semester were analyzed, revealing a positive trend in understanding the SDGs but also indicating significant room for improvement across all goals and various contributions (workplace, professional bodies, NGOs, and community/public.

Keywords: Attitude, Awareness, Knowledge, Sustainability Development Goals, Sustainability Literacy, Three Pillars of Sustainability.

1.0 INTRODUCTION

Sustainable development goals (SDGs) are global in nature. These are universal goals that concerns every human being. Therefore, participations of industrial sector and the public are important. Creating awareness can serve as a tool for advocacy. It is a precursor to participation, and more importantly active participation through which an individual can be inspired, grow empathy and compassion. An effective way to create awareness in areas relating to global environment and issues is through knowledge dissemination in the specified area; through literacy (defined as knowledge/competence in a specified area). Sustainable Literacy is the knowledge and understanding of the inter, skills and mind-sets that allow individuals to become deeply committed to building a sustainable future and assisting in making informed and effective decisions to this end (United Nations, 2016). Therefore, SDGs which are goals adopted the United Nations in 2015 as response to the universal call to action towards creating a better and a more sustainable future for all, are important part of the body of knowledge for sustainable development. Upmost important is the understanding of the concept of sustainability. As an Open Distance Leaning (ODL) provider, Open University of Malaysia (OUM) is well-positioned to play an active role in promoting sustainability literacy. In 2018, OUM introduced the 17 SGDs through its university course (OUMH1603: Learning Skills for 21st Century) to all diploma and bachelor learners. The course comprising of 10 topics is focused on 21st century soft skills, literacy skills, 4Cs (Creative Thinking, Critical Thinking, Collaborative and Communication Skills), and Global Citizenship Education and Environmental Education. This research is motivated by the intention to widen the reach out in the university's effort to raise the awareness on SDGs. The aim is advocate to the university community to become active participants of the global drive to create a better and a more sustainable future for all through research on sustainability literacy and education. Understanding the concept of sustainability would enable individuals to make better decisions on the issues in their private and professional lives. SDGs highlight important aspects of our lives that very often slips our mind. It promotes global awareness (a theme highlighted under the 21st Century Skills). It can help to advocate sustainable development practices.

1.1 Problem Statement

The three pillars of sustainability are environmental, economic, and social. These three pillars are interdependent and refer to the concept of sustainability as it relates to the planet and its inhabitants. Environmental sustainability refers to the protection and preservation of natural resources and ecosystems. Economic sustainability refers to the ability of an economy to support and maintain its activities and growth over the long term. Social sustainability refers to the ability of a society to provide for and support its members, both now and in the future (Barbier, 2018). Together, these three pillars form the foundation of sustainable development and are key to ensuring a healthy and prosperous planet for all.

Environmental deterioration has resulted from rapid urbanization and the public's desire to live a luxurious modern lifestyle. Environmental catastrophes that impair the quality of life include hazardous waste creation, climate change, environmental degradation, and ecosystem breakdown, to mention a few. The main causes of these occurrences are sparked by human avarice being satisfied by aggressive economic operations that ignore environmental implications (Mei et al., 2016). Department of Environment, (2020) report that a total of 366 Environmental Impact Assessment (EIA) reports were received and reviewed by the Department of Environment (DOE) in 2020 (Figure 1.1). Of this figure, 316 (86%) were EIA reports of activities that came under the First Schedule of Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015, while 50 (14%) were reports of activities under the Second Schedule of the Order.

Figure 1.1: Cumulative EIA Report
Source: Department of Environment Malaysia. Annual Report 2020

Selangor received the highest number of EIA reports in 2020, with 94 (26.0%) reports, Kelantan with 88 (24.4%) reports and Pahang with 45 (12.5%). Figure 1.2 shows the details and a comparison of the status of the EIA Reports with the number of reports received by the DOE. Figure 1.3 displays the number of EIA reports generated with regard to prescribed activities. Forestry related activities had the most reports in 2020 with 120 (28.8%) reports, followed by activities related to waste treatment and disposal with 97 (23.3%) and activities related to industries with 38 (9.1%) reports. Meanwhile, three (3) EIA reports for activities related to offshore oil and gas field development within the area of the Economic Exclusive Zone (EEZ) were received - two (2) in Sarawak and one (1) in Kelantan. In 2020, a total of 744 enforcement actions were issued by the DOE. The enforcement actions consist of 525 notices and 205 compounds, while 37 cases were charged in court for not complying with the conditions of EIA approval (Department of Environment Malaysia, 2020).

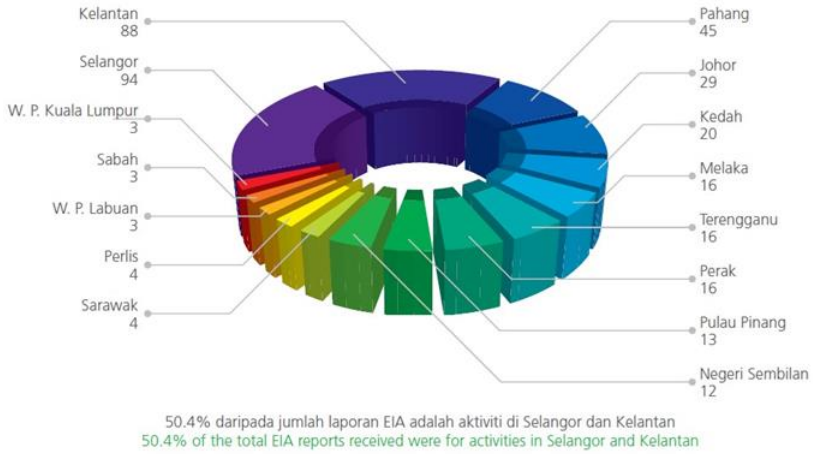

Figure 1.2: EIA Report by State
Source: Department of Environment Malaysia, Annual Report 2020

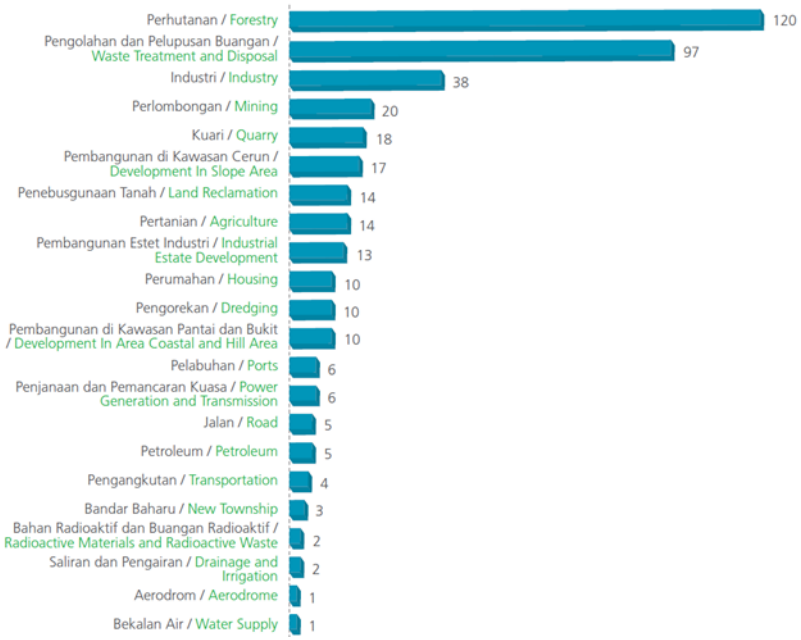

Figure 1.3: EIA Report by Activity
Source: Department of Environment Malaysia. Annual Report 2020

In the face of overwhelming environmental issues, urbanization, industrialization, deforestation, rising global temperatures, and biodiversity degradation, policymakers have struggled to achieve any progress towards tackling the environmental issues due to the deficiency of sustainability literacy (Keles, 2012). Due to the human behaviour causes environmental degradation, all parties must consider the need of raising a generation of people who are not just worried about the environment but also actively responsible for it (Dahalan et al., 2020). It is thus necessary for them to show concern and transform their behaviour and attitudes in terms of their daily interaction with the environment to a more positive form so that both entities can benefit. Indeed, this is crucial because a high level of sustainability literacy can lead to a positive outcome (Dahalan et al., 2020).

A sustainable economy is one that can support itself and meet the needs of the present without compromising the ability of future generations to meet their own needs. Technology can play a role in supporting a sustainable economy by helping to reduce waste and increase efficiency, as well as by providing new and innovative solutions to the challenges faced by society. Said et al., (2022) state that renewable energy technologies such as solar and wind power can help to reduce our reliance on fossil fuels. This means that the economy must operate within the natural limits of the planet and use resources efficiently and responsibly. A sustainable economy must also provide for the well-being of all people and communities, including those that are disadvantaged or marginalized. This requires addressing issues of inequality and promoting social and economic justice (Bastianoni et al., 2019).

Nevertheless, there is among the problems much to be done to increase the awareness for individuals to have greater ownership of their responsibility towards awareness of sustainability. Therefore, education has a special role in all its forms, starting from primary levels to higher education. The United Nations Sustainable Development Goals (SDGs) provide an excellent opportunity to expand education for sustainable development (ESD) globally (Shiel et al., 2016). ESD is defined as a learning process or approach to teaching based on standards and principles that train different kinds of people to plan, cope and find solutions to problems that threaten the sustainability of our planet (UNESCO, 2016).

In conclusion sustainability literacy is the understanding of the interconnected nature of social, economic, and environmental systems, and the ability to apply this understanding to make informed decisions that promote sustainability. This can be fostered through education by teaching students about the principles of sustainability, the challenges facing our planet, and the actions that individuals and communities can take to protect the environment and promote long-term social

and economic well-being. This can involve integrating sustainability concepts into the curriculum across a variety of subjects, as well as providing opportunities for students to engage in hands-on learning experiences, such as environmental service projects and sustainability-focused research. Sustainability literacy is an important skill for the 21st century, as it can help individuals and communities make informed decisions that support a sustainable future.

1.2 RESEARCH OBJECTIVES

This research is designed to assess the following among OUM undergraduate learners:

i. To analyse the understanding of the sustainability concept.
ii. To evaluate the knowledge of the 17 SDGs.

2.0 LITERATUR REVIEW

2.1 THE CONCEPT OF SUSTAINABILITY

The ability to be sustained, supported, upheld, or confirmed is defined as "the quality of not being damaging to the environment or depleting natural resources, and so supporting long-term ecological balance" in the natural world (Guterres et al., 2021). Both simple and complex, ambiguous and clear-cut, distinct and universal, agreed upon and challenged, political and impartial, sustainability is both simple and complex (Burns, 2016). Rather than being a passing trend, the concept of sustainability has been adopted by a diverse set of individuals and institutions (Portney, 2001). The contentious ideas of sustainability and sustainable development arose largely as a result of international institutions' political and administrative procedures (Burns, 2016).

2.1.1 PRINCIPLES OF SUSTAINABILITY

Sustainable development can be seen of as a way to achieving sustainability, but sustainability is the ultimate aim and guiding principle. Regarding the origins of the sustainability concept, there are a few crucial elements to consider. Environmental sustainability, economic sustainability, and social justice sustainability are often regarded as three dimensions or "pillars" of sustainability. In actuality, these pillars are not simply or precisely defined. The Brundtland Report, issued in the 1960s and 1970s amid growing global realisation of the ecological and planetary limits of growth, inspired the three pillars structure (Hodson & Marvin, 2017). The Brundtland Report popularised the concept of sustainable development, and it is recognised as "the first serious attempt to link poverty to natural resource management and environmental conditions" (Pretty et al., 2007). With the Brundtland formulation and a number of subsequent key international conferences on environment and development, such as the United Nations Conference on Environment and Development (UNCED) in 1992, also known as the Rio Earth Summit, the multidimensional concept of sustainability continued to spread. Agenda 21, a nonbinding treaty and agreement on the normative principles of sustainable development, was one of the outcomes of the Rio Earth Summit, which also resulted in a number of internationally binding agreements, including the Convention on Biological Diversity in 1995, the Kyoto Protocol in 1998, and the 2016 Paris Agreement (Pretty et al., 2007; United Nations, 2016). As debates among international organisations and policymakers shifted toward the importance of cities, Agenda 21 united the local with the global (Hodson & Marvin, 2017).

2.1.2 SUSTAINABILITY LITERACY

Sustainability literacy can be defined as the ability to put information about sustainability into practise (Stibbe, 2009). Due to the learning of environmental problems, which allows for increased awareness of possible solutions, sustainability literacy is intrinsically easier to teach in the domains of environmental science and sustainability (Heeren et al., 2016). Sustainability literacy refers to a person's "knowledge, abilities, attitudes, and traits that enable them to take informed action for the benefit of themselves and others, now and in the future" (Diamond & Irwin, 2013). "The ability and inclination to engage in thinking, problem solving, choice making, and actions associated with attaining sustainability" is defined as "the ability and disposition to engage in thinking, problem solving, decision making, and activities associated with achieving sustainability" (Nolet, 2009). The concept of sustainability has developed over time, as has our understanding of it. Today, the term "sustainability" has a far more precise connotation, one that is tied to both human growth and environmental concerns (Visser et al., 2010). It is, however, still debatable due to similarities with concepts such as human development, sustainable development, environmental management, and ethics, to name a few (Thompson, 2011). People have a common assumption that environmental literacy and sustainability literacy are synonymous, in part because their differences are

difficult to separate. It's important to remember that sustainability literacy encompasses both environmental and civic engagement and social responsibility components (Rowe, 2002).

2.1.3 CONCEPTUAL FRAMEWORK

The variables that would influence literacy towards sustainability would be the awareness, knowledge, and attitudes. In the context of sustainability literacy, an individual with increased awareness on sustainability and its issues will lead to an increased knowledge and positive attitudes towards sustainability. A sustainability literate person, according to the worldwide non-profit consultancy Forum for the Future, should "understand the need for shift to a sustainable way of doing things, both individually and collectively." Furthermore, such a person should "possess adequate knowledge and abilities to make decisions and take actions that promote long-term development." Furthermore, sustainability literacy should enable one to "recognise and praise the decisions and behaviours of others that promote sustainable development"(Parkin et al., 2004). Sustainability literacy can also be defined as "the information, skills, and understanding required to shape a more sustainable future" (Blewitt, 2009).

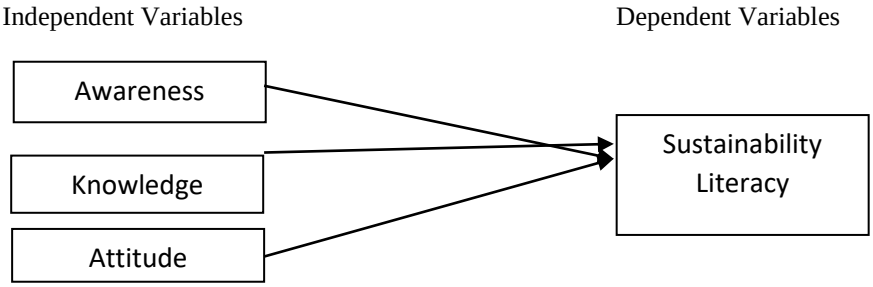

Figure 2.1: Conceptual Framework for Sustainability Literacy

2.2 SUSTAINABILITY DEVELOPMENT GOALS (SDGS)

The Sustainable Development Goals run from 2016 to 2030 and are formally the goals of the United Nations' 'Transforming our world; the 2030 Agenda for Sustainable Development', an agenda which sets out the vision, principles and commitments to a fairer and more sustainable world for all (Morton et al., 2017). The project of Sustainable Development Goals started since Millennium Development Goals (MDGs) ended in 2015 with some notable results: reduction in poverty, increase in primary education enrolment and gender parity, fall in child and global maternal mortality, and better access to sanitation (Jati et al., 2019). The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a set of objectives within a universal agreement to end poverty, protect all that makes the planet habitable, and ensure that all people enjoy peace and prosperity, now and in the future. The Goals were adopted by all member states of United Nations formally in 2015, for the period 2016 to 2030 to address the overwhelming empirical and scientific evidence that the world needs a radically more sustainable approach (Morton et al., 2017).

The formal resolution adopted by the UN General Assembly in September 2015 was published on 21 October 2015. The UN resolution refers to five 'areas of critical importance'; sometimes known as the 5 'P's, these are People, Planet, Prosperity, Peace and Partnerships (Table 2.1). The goals were launched with the strap-line of 'Ensuring that no-one is left behind' with its implication that development and levelling up will be the keys to progress by 2030 (Morton et al., 2017). The SDGs comprise 17 goals and 169 targets include ecological, social, and economic aspects (Jati et al., 2019). The SDGs (Table 2.2), ranging from "the wellbeing of every individual to the health of the planet, from infrastructure to institutions, from governance to green energy, peaceful societies to productive employment" with a number of targets associated with each goal. In total, there are 17 SDGs, and 169 associated targets, in what is a comprehensive and ambitious vision for the future and the goals embrace a wide range of environmental, social and economic issues, including climate change, energy, water stewardship, marine conservation, biodiversity, poverty, food supply and security, sustainable production and consumption, healthcare, education, gender, equality, peace and economic growth (Jones et al., 2017)

Table 2.1 Summary of the UN's 17 Sustainable Development Goals, linked to the five Areas of Critical Importance (5P's)

People	− No Poverty (Goal 1) − Zero Hunger (Goal 2) − Good Health and Well-being (Goal 3) − Quality Education (Goal 4) − Gender Equality (Goal 5) − Clean Water and Sanitation (Goal 6)
Planet	− Climate Action (Goal 13) − Life below Water (Goal 14) − Life on Land (Goal 15)
Prosperity	− Affordable Clean Energy (Goal 7) − Decent Work and Economic Development (Goal 8) − Industry, Innovation and Infrastructure (Goal 9) − Reduce Inequalities (Goal 10) − Sustainable Cities and Communities (Goal 11) − Responsible consumption and production (Goal 12)
Peace and partnership	− Peace, Justice and Strong Institutions (Goal 16) − Partnerships for the Goals (Goal 17)

United Nation's blueprint that craves better world by 2030 has set the 17 goals to pursue, (1) no poverty; (2) zero hunger; (3) good health and well-being; (4) quality education; (5) gender equality; (6) clean water and sanitation; (7) affordable and clean energy; (8) decent work and economic growth; (9) industry, innovation and infrastructure; (10) reduced inequalities; (11) sustainable cities and communities; (12) responsible consumption and production; (13) climate action; (14) life below water; (15) life on land; (16) peace, justice and strong institutions; (17) partnership for the goals (Jati et al., 2019).

Table 2.2 Sustainable Development Goals

No.	**Goals**
1.	End poverty in all its forms everywhere
2.	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3.	Ensure healthy lives and promote well-being for all at all ages
4.	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5.	Achieve gender equality and empower all women and girls
6.	Ensure availability and sustainable management of water and sanitation for all
7.	Ensure access to affordable, reliable, sustainable and modern energy for all
8.	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9.	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10.	Reduce inequality within and among countries
11.	Make cities and human settlements inclusive, safe, resilient and sustainable
12.	Ensure sustainable consumption and production patterns
13.	Take urgent action to combat climate change and its impacts
14.	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15.	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16.	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17.	Strengthen the means of implementation and revitalize the global partnership for sustainable development

2.2.1 SUSTAINABLE DEVELOPMENT GOALS AGENDA

The 2030 Agenda is global, transformative, and based on human rights. It is an ambitious action plan for nations, the United Nations, and all other actors. The Agenda is the most comprehensive plan to date for eradicating extreme poverty, reducing inequality, and safeguarding the environment. 2030 Agenda is a global commitment towards a more sustainable, resilient and inclusive development. The global indicator framework adopted by the United Nations General Assembly comprises of 244 global indicators. The indicator framework has been reviewed in 2019 and presented to the 51st United Nations Statistical Commission (UNSC) in March 2020. Currently, there are 247 SDG indicators agreed and adopted for monitoring of 2030 Agenda (Department of Statistics Malaysia, 2020). The Sustainable Development Goals (SDGs) are a set of global goals for fair and sustainable health at every level: from planetary biosphere to local community. The aim is to end poverty, protect the planet and ensure that all people enjoy peace and prosperity, now and in the future (Morton et al., 2017).

2.2.2 SUSTAINABLE DEVELOPMENT GOALS CHALLENGES

The Sustainable Development Goals (SDGs) are a wide range of global sustainable development targets for the environment, society and economy. In launching the SDGs, the United Nations called on all member states to embrace what are an ambitious and demanding set of challenges but it also emphasised the vital role that businesses, would have to play if these challenges were to be met (Jones et al., 2017). In 2020, the global extreme poverty rate rose for the first time in over 20 years. Hundreds of millions of people were pushed back into extreme poverty and chronic hunger. The COVID-19 pandemic has interrupted one or more essential health services and poses major health threats beyond the disease itself. It has wreaked havoc worldwide on children's learning and well-being, and women have suffered a disproportionate share of job losses and increased care work at home (United Nation, 2021). To address the vulnerabilities exposed by the pandemic, Governments and the international community should make structural transformations and develop common solutions guided by the SDGs. These include significantly strengthening social protection systems and public services (including health systems, education, water, sanitation and other basic services); increasing investments in science, technology and innovation; creating fiscal space in developing countries; taking a green-economy approach and investing in clean energy and industry; and transitioning to sustainable food systems (United Nation, 2021).

The economic, social and environmental concerns considered in the definition of these 17 objectives can no longer be dealt with in a separate and independent way (Lozano, 2008; Setó-Pamies & Papaoikonomou, 2016). These objectives have to be approached in an interdisciplinary way, with all actors assuming their share of responsibility (individuals, companies, private and public organizations and institutions, and governments). In this sense, universities are called upon to play a relevant role in the development of these objectives, since they are important agents for the integral development of future citizens (Piza et al., 2018). Higher-education institutions (HEIs) play an essential role in providing future professionals with the necessary skills and competencies to respond to the sustainability challenges identified in increasingly complex and global contexts (Lozano et al., 2015). They can become catalysts for change and must play an increasingly important role in helping students to become responsible and active citizens, with a clear vision of the future challenges of sustainability (Aktas et al., 2015). If achieved, the SDGs will secure an improved level of health, development, and global justice. However, if the international community fails to live up to its commitments, an untold number of people will likely perish prematurely, people's opportunities to thrive will be cut off, social dynamics will continue to leave people behind, and unsustainable environmental pathways will create risks to the health and well-being of generations to come (Friedman & Gostin, 2016)

3.0 METHODOLOGY

The research employs quantitative methodology using a survey instrument. The survey instrument created using Google form consists of three sections. The first section of data collected on the demographic characteristics of learners such as gender, age, faculty, employment industry and their role in their organization. The second section focuses on finding out more specific knowledge and awareness about sustainability, sustainable development and SDGs. The survey 's final section consists of an assessment of the learner's attitude towards SDGs.

A pilot study was conducted to test the survey instrument. One course from each faculty was selected and learners were approached through the course leaders. From the total of four courses, a total of 23 responses were obtained. The responses were lower than the 30 responses that were targeted. The reliability of the instrument was tested using Cronbach's alpha,

which obtained a value of 0.792. Taber, (2018) the ideal value is generally thought to be approximately 0.70 or higher. Therefore, no correction is needed.

The target population of the respondents are the new learners enrolled in OUM bachelor degree programmers in the May 2023 semester who are attending the required a university compulsory course OUMH1603 Learning Skills for 21st Centuries. The total population was at 1,311 learners. Data obtained was only from 165 respondents, 12.6%. These data were cleaned, and analyzed using SPSS.

4.0 DATA COLLECTION & DISCUSSION

This section will present and discuss the data obtained, analysis and the findings. The findings will determine whether the objectives of this research have been achieved or otherwise. These questionnaires have been sent to the May 2023 intake students at Open University Malaysia. The total number of students for the May 2023 intake is 1,311 students for the bachelor's program which includes 4 faculties, namely Faculty of Business Management (FBM), Faculty of Education (FOE), Faculty of Social Sciences & Humanities (FSSH) and Faculty of Technology & Applied Sciences (FTAS). The distribution of questionnaire based on the work by Krejcie & Morgan (1970), for population around 1,300, the appropriate number of sampling is 297. The questionnaires were distributed to all 1,311 OUMH1603 learners by postings in the announcement section under my Inspire, the learning management system platform at OUM platform. The data collection was carried out over 21 days and the number of learners who responded this survey was 165. This is slightly lower value compared to the required 297 respondents. The number of respondents after data cleaning is even lower at 157, 52.9%. Nevertheless, the focus of this study is limited to descriptive statistics as such the number of respondents is sufficient. Table 4.1 presents respondent's demographic data.

The purpose of demographic data is to identify whether or not the sample is a representation of the population. The percentage of the gender where female learners which is close to 60% corresponds to the gender ratio of the OUM learner population. The age distribution also indicates the shift in the age towards younger generation observed amidst OUM learners. Meanwhile, the distribution amidst the industry also represents the pattern observed amidst the programmers offered at OUM, and not the actual industry distribution in the country. The observation on the role that the learners play at their organization supports the curriculum design at OUM that introduces management courses in most programmers.

Table 4.1 Respondents Demographic

Demographic Data	Particulars	Percentage
Gender	Male	36.9%
	Female	63.1%
Age	≤ 25 years old	28.0%
	26-30 years old	21.0%
	31-35 years old	26.1%
	36-40 years old	13.4%
	41-45 years old	6.4%
	46-50 years old	1.3%
	51-55 years old	2.5%
	56-60 years old	1.3%
Faculty	FBM	29.9%
	FOE	25.5%
	FSSH	19.7%
	FTAS	24.8%
Industry	Education/Training	17.8%
	Government	15.9%
	Health Care	14.0%
	Manufacturing	9.6%
	Trading/Services	5.1%
	IT	5.1%
	Finance and Economic	5.7%
	Marketing/Advertising	5.7%
	Construction	3.8%
	Others	17.3%
Role	Management	55.4%
	Technical	32.5%
	Leadership	12.1%

Data in Table 4.2 represents the level of knowledge and awareness of the sustainability concept among the respondents. The lowest mean across all item is for item 2 at 3.76, "Sustainable development is about sustaining a business at all cost". Ideally the value should be much lower. This raises a concern about the learners' understanding of the item as well as the sustainability concept. Focus group session using interview can be used to analyses the responses for the item. All other items are above 3.90; showing a good understanding of the concept. The highest score is for item 6, "Sustainable Development requires integrated decision-making" at 4.20 with the lowest standard deviation value at 0.757. This suggests that the understanding of the sustainability concept roots from work experience that necessitates the need to collaborate and integrate in making informed decisions at workplace. Further exploration on the source of knowledge and awareness is needed to understand this finding further. This study indicates that the learners at OUM, being working adults have a good level of understanding of the sustainability concept among OUM adult learners.

Meanwhile, the knowledge and awareness of the 17 SDGs depicted in Table 4.3. Data obtained shows that only half of the respondents are have in-depth knowledge, while 70% of the respondents have the skills to contribute to the goals. The difference in percentage between knowledge and skill only indicate the need to educate the respondents in specific areas related to the 17 goals. This will be pursued in the next phase of this study.

Table 4.2 Respondents Knowledge and Awareness

Question	Mean	Std. Deviation
I am familiar with the term sustainability	3.91	0.908
Sustainable development is about sustaining a business at all cost	3.76	0.962
Sustainable Development ensures that there is no negative impact on the environment.	4.00	0.906
Sustainable Development emphasise on equal considerations on triple bottom line (People, Planet and Profits) impacts	4.11	0.797
Sustainable Development gives greater weight to the environment in public decision-making	4.01	0.820
Sustainable Development requires integrated decision-making	4.20	0.757
Sustainable Development is about ensuring that we leave the planet better than when we find	3.92	1.056

Table 4.3 Respondents Knowledge on SDGs

Questions	Yes	No
I have in depth knowledge of these goals	54.1%	45.9%
I have skills to contribute to the achievement of these goals	70.1%	29.9%

Further exploration into the respondent's roles in their contributions in terms of supporting each of the 17 SDGs goals is shown in Table 4.4. On average close to 29% have more than one role that they contribute to all 17 goals. Goal 16 and 17 being the only two goals with close 37% respondents having more than one role. Highest contributions are made either at Workplace or Community/Public. Table 4 reveals that highest contributions mostly are at workplace under SDG 3, SDG 4, SDG 5, SDG 6, SDG 7, SDG 8, SDG 9, SDG 10, SDG 12, SDG 13, SDG 16, and SDG 17. Meanwhile highest contributions to Community and Public are found under SDG 1, SDG 2, SDG 6, SDG 11, SDG 14, and SDG 15. The pattern under SDG 1, and SDG 2 is somewhat understandable due to the focus on community projects are often to reduce poverty and hunger. It is rather interesting to find highest contributions for clean water and sanitization also made to Community/Public. This is also similar for SDG 11, SDG 14, and SDG 15, Life above Water and Life above Land. This shows that respondents at large care about people and community, as well as about life of other beings. This reflects well on the respondents as caring individuals.

Lowest contributions are largely found under contribution to non-governmental or non-profit organizations. Perhaps the impacts of these organizations in Malaysia and the reasons behind them must be explored further. The pattern is different for SDG 1, SDG 2, and SDG 7, where the lowest contributions are found under contributions to professional bodies. This pattern is again understandable under SDG 1, and SDG 2; given that professional bodies are less engaged in efforts of reducing poverty and hunger. The question is why contributions to professional bodies are lowest in SDG 7, Affordable Clean Energy. The role of professional bodies in the energy sector must be explored further.

Overall the engagement of respondents in terms of the contributions they make range from 23.0% to 58.8%. One average, the highest contributions are made at workplace (a mean of 48.3%), followed by contributions to community/public with a mean of 43.2%, contributions to professional bodies at a mean of 31.8%, and contributions to non-governmental or non-profit organizations with a mean value at 28.9%. Highest percentage value of contributions is the contributions at workplace under SDG 17. This is a good sign as it shows high degree of partnerships in achieving SDGs. While the extent of participation in sustainable development practices among the respondents reflected by an overall mean of 38% is encouraging, efforts must be taken to increase participations in every role and in all 17 SDGs to ensure that the country can achieve the targets in all 17 SDGs by 2030.

Table 4.4 Respondents Contribution to SDGs

17 SGDs	**Contributions at Workplace**	**Contribution to Professional Bodies**	**Contribution to Non-governmental or Non-profit Organisations**	**Contribution to Community /Public**
SDG 1: No Poverty	39.4%	23.0%	36.4%	48.5%
SDG 2: Zero Hunger	33.9%	28.5%	29.1%	47.9%
SDG 3: Good Health and Wellbeing	51.5%	33.3%	24.8%	43.6%
SDG 4: Quality Education	48.5%	37.0%	26.7%	45.5%
SDG 5: Gender Equality	57.0%	28.5%	26.7%	41.2%
SDG 6: Clear Water and Sanitisation	48.5%	32.7%	26.7%	52.7%
SDG 7: Affordable Clean Energy	50.9%	29.7%	31.5%	41.2%
SDG 8: Decent Work and Economic Growth	54.5%	27.3%	26.1%	34.5%
SDG 9: Industry, Innovation and Infrastructure	55.8%	29.7%	24.8%	32.1%
SDG 10: Reduce Inequalities	57.6%	27.9%	27.3%	38.8%
SDG 11: Sustainable Cities and Communities	41.8%	33.3%	24.2%	51.5%
SDG 12: Responsible Consumption and Production	50.9%	34.5%	29.7%	33.9%
SDG 13: Climate Change	46.7%	34.5%	30.3%	44.8%
SDG 14: Life Below Water	34.5%	32.7%	31.5%	43.0%
SDG 15: Life Above Land	39.4%	35.2%	31.5%	44.8%
SDG 16: Peace, Justice and Strong Institution	52.1%	38.2%	33.3%	50.3%
SDG 17: Partnership for Sustainable Development	58.8%	35.2%	31.5%	40.0%

In terms of learner's attitude towards SDG, most learners (more than 85%) are equally concerned about the achievement of the SDGs and in finding effective solutions towards contributing to SDGs. Table 4.5 shows the level of the attitude of the respondents towards SDGs. A positive attitude is a good indication that the respondents are likely keen to increase their knowledge and skills, and possibility their engagement in actions towards achieving the targets under the SDGs. The relationship between knowledge and attitude where knowledge generates an attitude in finding a solution to make the SDGs target achievable. OUM learners are mostly those who work, exposing them to knowledge indirectly related to their work. Therefore, this informal knowledge contributes to the attitude and behavior (Schrader & Lawless, 2004) to realize the achievement of the SDGs**.**

Table 4.5 Respondents Attitudes Towards SDGs

Question	**Yes**	**No**
I'm concerned about the achievement of SDGs	87.3%	12.7%
I'm looking for an effective solution to contribute to SDGs	88.5%	11.5%

5.0 CONCLUSION

This study explores the knowledge and awareness of adults of the concept of sustainability and the 17 SDGs using OUM adult learners as a target population. Target population all diploma and bachelor students for the May 2023 cohort. OUM adult learners are well distributed throughout the country to represent the nation. Greater sample size would have improved the reliability of the findings presented here. The SGDs are universal goals that concerns every adult across the different roles that they play within the industry and the community they engaged with. The survey instrument was designed to obtain quantitative data measures the knowledge and understanding of the sustainability concept, knowledge and skill in SDGs, contributions made across four different roles relating to workplace, professional bodies, non-governmental or non-profit organizations, and the community/public. Questions were also included to gauge the attitude of the respondents towards SDGs. Findings shows a positive pattern with much room for improvement across all 17 SDGs and the four different contributions that the adult are engaged with. The understanding of the sustainability concepts is positive with a mean ranging between 3.76 to 4.20. Meanwhile, 54% respondents have attested to having in-depth knowledge, and more respondents have attested to having the skills (70%). This is further explored by analyzing the contributions made. The extent of participation in sustainable development practices among the respondents reflected by an overall mean of 38%, where the percentages range from 23.0% to 58.8%. One average, the highest contributions are made at workplace (a mean of 48.3%), followed by contributions to community/public with a mean of 43.2%, contributions to professional bodies at a mean of 31.8%, and contributions to non-governmental or non-profit organizations with a mean value at 28.9%. Understanding of these patterns will help in developing strategic solutions in increasing participations in across every role and in all 17 SDGs towards the achievements of SDG targets in the country. Creating awareness through studies as this can also serve as a tool for advocacy.

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