Consumption Versus Sustainable Lifestyles of University Students

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Abstract. Community citizens practice a range of consumption behavioural patterns to meet their daily biological, social and cultural needs. Such consumption patterns include eating, drinking, buying, handling objects and the environment. Such daily consumption patterns are linked to individual everyday life and changes in his/her society including climate changes. Communities are supposed to practice sustainable lifestyles to keep a healthy environment and face the effects of climate change. The research aimed to study the consumption patterns of university students, and to identify the frequently experienced one. University Students Behavioural Consumption Patterns Scale was built. It is formed of 38 items assessing 4 consumption areas: (1) Food, (2) Purchasing, (3) Environmental practices, (4) Energy. Subjects' response varies between Agree/Neutral/Disagree (3/2/1).810 student of different fields of study and grades in the faculty of Education Helwan University responded to the electronic version of the Students Behavioural Consumption Patterns Scale. There was no difference in consumption patterns according to Subjects` grade or gender. Their scores indicated an average consumption pattern in 88.2% of the subjects in the research sample (weighted average = 1.95). The energy field was the highest among the four consumer areas, with an average weighted = 2.35. Many of them estimated their consumption patterns between high (44.8%) and medium (53.1%).

1 Introduction

Sustainable development goals 2017 emphasised the importance of quality education (the fourth goal), as well as climate action (the thirteenth goal). quality education can contribute to maintaining the climate and the human environment healthy. It is a tool to modify and improve the behaviour of learners and turn them into desirable behaviours [10].

Climate action refers to all possible practices that support the climate and protect the environment from any damage and threats that may cause climate change and an imbalance in the ecosystem. The consumption patterns of individuals are among the most behavioural patterns that need to be modified and changed considering the changes in societies, including climate changes and factors affecting the surrounding environment and individuals. Consumption patterns are one of the most behavioural patterns that need to be modified especially with the raised attention about climate changes. Consumption patterns are related to food, water, and energy and it expresses the actions taken by any individual to satisfy his/her needs and desires [2].

Report from the University of Bremen on the climate workshop reported the importance of raising awareness of individuals as a step towards changing individual behaviour and convictions of what is intended to be reached [13]. Consumers should themselves, constantly seek to change their lifestyle and consumption habits into environmentally friendly behaviour [6].

Venghaus, 2022 mentioned ten tips to change the pattern of consumption behaviour to sustainable behaviour. They include, buy only what you need, borrow and share, reuse, fix things, buy from recycling, don't waste food, use food waste as fertiliser, help in your workplace to make a difference, ask the administrator to do, keep learning about climate change [12].

Initiatives from different countries provide solutions towards sustainable lifestyles. Egypt's 2030 strategy, and COP 27 climate summit held in Egypt in 2022 confirms the positive actions of the Egyptians society towards sustainable development.

Current study came within the framework of Egyptian universities' interest in climate change and supporting the university's role in consolidating the values of preserving the environment and supporting the climate, in conjunction with the COP 27 climate summit held in Egypt last November.

2 Aim

The research aimed to study the consumption patterns of university students, and to identify the frequently experienced one.

The research aim is to identify the university students' practice of consumption patterns and study their assessment of their consumption style through the four

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identified domains. It also aims to determine the most common consumption pattern among them and understand to what extent consumption styles differ based on gender or academic level or specialisation. Finally, it also presented the most appropriate procedures to change consumption style into sustainable lifestyles for university students.

3 Material and method

3.1 Method

Present research is a descriptive comparative type of research as it aims to describe the consumption patterns of university students in relation to gender and level of education.

Subjects were compared in their consumption patterns in relation to their gender and educational grade.

The sample was determined according to the research objective, taking into consideration the generalisation of the results to the study community. When the number of the participants was increased, the possibility of accurate results was also increased [8]. The method of sample selection used was the Stratified Random Sample, which is suitable for this research. The sample size and the subgroups were determined based on the following steps:

- The sample size was determined to represent 10% of the original population.
- The subgroups were determined according to the academic programs (Languages, Arts, Scientific, Specific, Technical).
- The subgroups were further divided into academic grades (first, second, third, fourth).
- The students were classified into these groups, with each student belonging to only one group.
- The research questionnaire was sent online to these groups using Google Forms, and it was made accessible to the groups until the desired response rate was achieved.

3.2 Subjects

810 students of different fields of study (academic programs and grades) in the faculty of Education Helwan University responded to the electronic version of the Students Behavioural Consumption Patterns Scale which was spread to all group leaders of academic programs and academic grades through students` union.

Researchers were able to contact group leaders through a WhatsApp group which allows a close follow up of students` response to the research tool/ the process was under close supervision with both students` union and faculty administration.

25 subjects were excluded due to their fixed response pattern on the scale items. The final research subjects were 785 students of different specialties and grades (Table-1).

Research subjects were categorised according to their specialty into 5 groups as follows:

Group 1: Language fields of study in the faculty of education (Arabic, English, French, German)

Group 2: Arts fields of study in the faculty of education (History, Geography, Psychology, philosophy).

Group 3: Science fields of study in the faculty of education (Chemistry, physics, biology)

Group 4: Specific fields of study in the faculty of education (Kindergarten, Educational Technology, and special Education)

Group 5: Technical fields of study in the faculty of education

Also, research subjects were categorised according to their university grade from 1st year to 4th year of education, as 1st grade, 2nd grade, 3rd grade, and 4th grade.

Table 1. Research subjects.

Research subjects					
Group	**1st grade**	**2nd grade**	**3rd grade**	**4th grade**	**Total**
Group1	63	75	50	48	236
Group2	62	44	19	4	129
Group3	95	87	62	63	307
Group4	46	29	9	16	100
Group5	0	5	2	6	13
Total	266	240	142	137	785

3.3 Tools

The data collection was based on the scale, and questionnaires were considered appropriate tools for gathering data on personal evaluations, attitudes, self-assessments, opinions, and orientations [7]. Survey questionnaires have been widely used in numerous studies [3].

The scale, a survey questionnaire, was built in Arabic and included four domains. These domains reveal the behaviours individuals adopt in their daily lives, including Food, Purchasing, Environmental practices, and Energy. The construction of the scale considered the need for vocabulary that accurately represents the behavioural style practised by university students and is close to their daily behaviours. A comparative representation of the consumption pattern scale was constructed, displaying the sustainable lifestyle pattern scale. The aim was to ensure that each consumption pattern corresponds to a recognizable sustainable lifestyle pattern, guiding students to transform their consumption pattern into sustainable lifestyles. Expressions indicating the sustainable lifestyle pattern (positive pattern) were incorporated within the consumption pattern scale (negative pattern) and vice versa.

The questionnaire is formed of 38 items assessing 4 consumption patterns:

1: Food (12 items).
2: Purchasing (11 items).
3: Environmental practices (9 items).
4: Energy (6 items).

Subjects' response varies between Agree/Neutral/Disagree and scored (3/2/1) respectively. On the other hand, sustainable patterns were scored as Agree=1 Neutral=2 & Disagree=3.

The study targeted university students to identify their consumption style. The study was conducted on students, and approval was obtained from the college to conduct the survey study on college students.

Students Behavioural Consumption Patterns Scale validity and reliability were calculated. Alpha Cronbach coefficient and Guttmann coefficient were 0.78 and 0.82 respectively which indicates high reliability of the scale.

The weighted average of university students' assessment scores for consumption patterns was calculated. The range (1-1.66) represented a low consumption pattern(L), (1.67 - 2.33) represented medium consumption pattern (M), and (2.34 - 3) represented a high consumption pattern(H).

The Sustainable lifestyles guide was prepared to raise students' awareness about the four areas (food / purchase / environmental practices / energy) to develop new consumption patterns and sustainable lifestyles. The guide Provides simple examples to be practised by the university students themselves or encourage school students during their field training as an example of sharing information which is part of a sustainable lifestyle. The guide included the following:

Part I: Awareness of behavioural patterns and their relationship to climate change.

Part II: Presenting research results to research subjects to know their most common consumption patterns.

Part III: Included rational energy consumption patterns. It included the use of clean and green energy.

Part IV: included activities that can be applied by research subjects in school context with school students during field training. They include healthy eating day activity, store / supermarket activity, flea market, waste and recycling activity, school yard cultivation activity, energy project activity, solar system school roof activity, water sources activity, bicycle use activity).

3.4 Procedures

Legal application of the research was obtained from the ethical committee of faculty of education, Helwan university. Informed legal consent for student participation in the research was included in the electronic version of the University Students Behavioural Consumption Patterns Scale which was uploaded for the whole students attending Helwan university faculty of education in the second semester of the academic year 2021-2022. Data were collected and analysed using SPSS. Results were tabulated as shown in research results.

4 Results

88.2% of the research subjects estimate their consumption pattern as average (weighted average = 1.95±0.22). Energy was the highest area in consumption patterns among research subjects (weighted average = 2.35) with medium to high rate (53.1% - 44.8%) respectively. All the fields of consumption scored ≥1.67 with medium level of consumption (Table-2).

Table.2 level of consumption patterns amongresearch subjects.

level of consumption patterns among research subjects						
Consumption Fields	Weighted average	Standard deviation	Consumption pattern	% of consumption pattern		
				H	M	L
1	1.90	±0.32	M	6.7	71.3	22
2	1.79	±0.29	M	3.7	59.4	36.9
3	1.75	±0.25	M	0.8	70.4	28.8
4	2.35	±0.35	H	44.8	53.1	2
Total	1.95	±0.22	M	2.9	88.2	8.9

Due to inconsistent distribution of the scores of the two groups in the areas of their consumption patterns, where the statistical values of the Kolmogorov-Smirnov test for the fields ranged between (0.072 and 0.120), which are a function at the level of ≥0.01 .In addition to the number of female students exceeding three times the number of students, the Mann-Whitney test was used to calculate the difference in mean rank of research subjects according to gender {Male(M)=138 & Female(F)=674}.

No significant difference was reported in all the consumption fields in relation to subject`s gender except for the energy field, where (Z = 1.968) with ≥ 0.05 level of significance (Table-3)

Table. 3 Consumption pattern according to gender.

Consumption pattern according to gender						
Consumption fields	Gender	Median	Mean Rank	Total Rank	Z	Significance
1	M	1.83	367.31	50688.50	1.470	0.141
	F	1.92	398.48	257816.50		
2	M	1.77	382.80	52827.00	0.584	0.559
	F	1.82	395.48	255678.00		
3	M	1.78	415.32	57314.00	1.286	0.198
	F	1.78	388.24	251191.00		
4	M	2.33	358.86	49522.00	1.968	0.049*
	F	2.33	400.28	258983.00		
Total	M	1.93	372.56	51413.00	1.167	0.243
	F	1.95	397.36	257092.00		

This is consistent with the study by Medina 2016, which shows differences between females and males in some environmentally related resource consumption activities and students' environmental footprint [5].

Since the equality was not met in the distribution of the scores of the students in the 1st and 4th grade in the domains of their consumption patterns, where the values of the Kolmgrav-Smirnoff test statistics for the domains ranged between (0.073 and 0.124), all of which are a function at the level of ≥0.01.

The Mann-Whitney test was used to calculate the difference in mean rank of research subjects according to university grade and no significant difference was reported between students in grade 1 (number =266) and students in grade 4 ((number=137) as shown in (Table-4). Also, it was not clear from the students' responses any significant differences according to their academic specialty.

Table. 4 Consumption pattern according tolevel of education.

Consumption pattern according to level of education						
Consumption fields	University grade	Median	Mean Rank	Total Rank	Z	Significance
1	1st grade	1.92	207.74	55258.50	1.383	0.167
	4th grade	1.83	190.86	26147.50		

2	1st grade	1.82	203.45	54116.50	0.349	0.727
	4th grade	1.73	199.19	27289.50		
3	1st grade	1.67	194.27	51675.50	1.875	0.061
	4th grade	1.78	217.01	29730.50		
4	1st grade	2.33	198.58	52823.00	0.828	0.408
	4th grade	2.33	208.64	28583.00		
Total	1st grade	1.92	200.33	53288.00	0.401	0.689
	4th grade	1.94	205.24	28118.00		

It is necessary to study consumption behaviours and to integrate learning for sustainable consumption in teaching methods, education does have a positive effect on sustainable consumption in general. Understanding consumption behaviours aims to correct and reduce them, higher education can play an important role to sustainable development and can promote sustainable consumption, which can be proceeded through various effective initiatives [1] [4].

5 Discussion

88.2% of the research subject's consumption pattern was average. Energy dimension was significantly related to gender (females). University students spend almost 4 years without developing any knowledge about sustainable lifestyles compared to newcomers in their 1st grade in the university.

Such results indicate the importance of adding subjects related to raising awareness about sustainable lifestyle which should be part of the curriculum directed to university students.

Energy lifestyle is a multi-dimensional, including 5 dimensions where mobility plays an important role in it [9]. Many students enrolled in different grades in the Faculty of Education use multiple transportation daily from home to university and vice versa.

Energy saving behaviour by building energy consumption information of college students showed positive and indirect results. Students' perceived value and personal norm independently affect energy-saving intentions [14].

Climate change is a real fact and educating people about it from an early age is vital to prompt responsible behaviour [11].

Awareness about sustainable lifestyles should be included as parts in weekly lectures of university students. Each consumption pattern should be linked with its corresponding sustainable lifestyle through small projects that can be implemented and linked to curricula. Student`s activities supporting sustainable lifestyles may include racing on campus, walking competitions, charity market for students. Also training students of the faculty of Education to implement activities within the school during field training to confront climate change through different disciplines and according to the nature of each program in the College of Education, to transfer experience within the school and to students of different educational stages from kindergarten to secondary education. Some activities that can raise awareness about sustainable lifestyle pattern are healthy eating day activity, going to the store activity, supermarket activity, used goods market activity, waste separation competition activity, recycling activity, school courtyard gardening activity, in-school energy project activity, solar system activity on the school roof, water source management activity, and bicycle use activity.

6 Conclusion

88.2% of the research subjects estimate their consumption pattern as average. Energy consumption was the highest among the four consumer areas of university students, many of them estimated their consumption patterns between high (44.8%) and medium (53.1%).

7 Recommendations

Raising university students` awareness about sustainable lifestyle is crucial for environmental health promotion. Future work should be directed to behavioural approaches.

Revision should be done for curricula of all fields in the faculty of education to match climate needs and sustainability.

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