



AMERICAN  
UNIVERSITY  
OF BEIRUT

NATURE  
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CENTER

# ASSESSMENT OF AUB STUDENTS' BEHAVIOR TOWARDS SINGLE-USE PLASTICS

## FINDINGS AND RECOMMENDATIONS

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## CONTEXT:

Lebanon's notorious waste mismanagement has been resulting in recurring environmental and public health issues since the 1970s (Chalhoub, 2022; Ostle et al., 2019). Ongoing efforts to curb solid-waste pollution have been largely unsuccessful, especially in a country devouring massive amounts of Single-Use Plastics (SUPs) (Kayed & Al Shami, 2020).

Defined as "items intended to be used only once before they are thrown away or recycled" (UNEP, 2022), SUPs due to their low-cost, versatility, and flexibility are hard to withstand.

Major advocates for reducing or banning SUPs have been universities (GreenMetric, 2023). At the American University of Beirut (AUB) efforts have been made to reduce such drastic waste production on campus (AUB, 2021), thus its rank as first in Lebanon for environmental sustainability. However, these approaches are not enough, as AUB's carbon footprint (divided by total population) has remained static at 1.29 since 2018 (AUB, 2018; AUB, 2021).

Thus the need for this study aiming at evaluating the knowledge, attitudes, and practices of AUB students towards SUPs, identifying barriers and facilitators, and providing recommendations for future interventions.

## SUPs AT AUB:

AUB has been an environmental pioneer among Academic Institutions in Lebanon. In 2013, Reverse Vending Machines (REVA) were installed throughout the campus, and were able to collect and recycle 1,241,296 bottles and cans (AUB, 2021). Similarly in 2015, AUB launched the Red and Blue recycling initiative, and was able to collect 90,162 kg of plastic, paper, cardboard, and cans since its inception (AUB,



2021). Both initiatives function through a collaboration with Arcenciel, a leading Lebanese NGO awarded by the United Nations as "Champions of the Earth" in 2022 (UNEP, 2022). Additionally, dozens of water fountains were installed in AUB, thus saving an estimate of 220,000 water bottles (AUB, 2021). In spite of all these actions, a major gap in reducing SUPs is still present.

## METHODOLOGY:

### DEFINITION

A clear definition of SUPs was formulated and linked to the specific context of AUB students. This definition includes items commonly used on campus; polystyrene food containers and cups, bags, coffee cups and lids, plastic cutlery, straws, takeaway food containers, drink stirrers, produce bags, and water bottles (Borg et al. 2022).

### SURVEY

Based on Nguyen et al. (2018)'s structural equation model to study behavioral intentions, validated by Van et al. (2021) towards SUPs in specific, a Google Forms was developed and disseminated throughout the campus from the 13th till the 26th of February.

Basic demographic questions were asked in order to establish a profiling of the participants, in addition to 20 questions that measure attitudes towards SUPs consumption along 5 factors; Environmental Awareness, Attitude, Perceived Behavioral Control, Social Pressure, and Policies and Regulations. The collected data was analyzed using SPSS.

### SEMI-STRUCTURED INTERVIEWS

Descriptive data regarding the perceptions and attitudes of AUB students towards eliminating SUPs on campus was generated through semi-structured interviews. This helped gain an in-depth understanding of the norms and behaviors of students and their attitudes toward SUPs elimination. It has also assisted in understanding what act as facilitators and as barriers in using SUPs.

**Reverse Vending Machines (REVA) were able to collect and recycle**

**1,241,296 bottles and cans**

**Red and Blue recycling initiative was able to collect**

**90,162 kg of plastic, paper, cardboard, and cans**

(AUB, 2021)

## STUDIED FACTORS:

Results are based on inputs from **216** AUB students from various faculties including Faculty of Health Sciences (FHS), Faculty of Arts and Food Sciences (FAFS), Suliman S. Olayan School of Business (OSB), and Maroun Semaan Faculty of Engineering and Arts (MSFEA).

### AWARENESS

Environmental awareness and knowledge are considered high at AUB, reaching an average of 4.15 on a scale ranging from 1 (low) to 5 (high). These results were also reflected in the semi-structured interviews whereby students were able to describe the negative impacts of SUPs consumption and waste mismanagement on the environment as well as the humans and animals that live there. The faculties FHS and FM scored the highest with an average of 4.35 and 4.29 respectively. The lowest were OSB and RHSN with 3.9 and 2.8 respectively. On another note, female students demonstrated a higher score than male students with increased education level demonstrating better knowledge.

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## 4.15

**environmental awareness and knowledge at AUB, on a scale ranging from 1 (low) to 5 (high).**

### ATTITUDE

Most students (163 respondents) disagreed with the statement “I’m not with the idea of reducing SUPs”, which highlights a moderately high level of positive attitude towards reducing SUPs consumption. Students, when interviewed, mentioned that they can be collaborative to a certain level with such a decision as long as alternatives are provided to facilitate this

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**respondents disagreed with the statement “I’m not with the idea of reducing SUPs”.**

shift. However, this also means that **53** participants agreed or took a neutral stance on this issue. This result was explained in the semi-structured interviews; many students portrayed their lack of trust towards AUB’s waste management system and its lack of transparency in its proceedings.

### SOCIAL PRESSURE

If used effectively, social pressure can act as a facilitator towards SUPs reduction and increasing student compliance. Research has shown that this is, in fact, true with social pressure being a strong and significant predictor of behavioral intention (Bruthmann et al. 2021; Van et al. 2021; Nguyen et al. 2018). Students showed a moderate average on the influence of social pressure on their consumption behavior.

### POLICIES AND REGULATIONS

Almost half of the students (104) disagreed or were unsure that AUB’s proactive behavior towards SUPs would decrease consumption. This clearly indicates that AUB should establish a better rapport with its students as this is presenting itself as a barrier to effective policy implementation.

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### PERCEIVED BEHAVIORAL CONTROL

The lowest of all factors, showing that although students are generally knowledgeable on the negative effects of SUPs consumption and mismanagement, they do not act on this knowledge in their day to day lives. Results demonstrated that females had a higher perceived behavioral control than males. This comes in line with previous literature that demonstrate that women tend to be more proactive and have more eco-friendly practices (Nguyen et al. 2022; Devi et al., 2020).

## WHAT IS STANDING IN THE WAY OF SUPs REDUCTION?



AUB's cafeterias are the main sources of SUPs consumption on campus. This suggests that initial steps towards implementation should target the university's cafeteria and ban it from selling SUPs mainly water bottles, coffee cups and lids, in addition to plastic cutlery and containers.



A major gap in policy-implementation, monitoring and evaluation is present as SUPs are technically banned from AUB cafeterias, as reported in AUB's sustainability report of 2018 till 2021 (AUB 2018, 2020, 2021), however they remain present.



Females proved to be more environmentally aware than their male counterparts. This highlights the need to cater interventions more closely towards male students.



Alternatives have been found to be lacking when it comes to SUPs consumption at AUB. Indeed, its high availability, especially in the cafeterias, and lack of available fountains or water gallons were reported.



Students' trust in AUB's waste management system is low and is affecting students' behaviors and behavioral intentions towards SUPs as well as plastic recycling.

## THE WAY FORWARD:



### PROVIDE ALTERNATIVES

Students reported a need to have an alternative to SUPs as they are somehow forced into consuming them on campus. Affordable reusable water bottles can be sold within the university, where the money generated can feed back into the project. This can also be a student-led initiative from OSB students in collaboration with other faculties, to provide students with valuable experience in running a sustainable business and tap into the skills they learned during their college years.



### ENFORCE POLICIES

Since AUB cafeterias were brought up to be one of the main sources of SUPs on campus, the university's policy to ban their use needs to be reinforced. This will decrease student's exposure to SUPs and will allow them to adopt an eco-friendlier lifestyle, at least while on AUB campus.



### ENGAGE STUDENTS

Lack of trust and transparency between the university and students was highlighted. In this regard, including students in the decision-making process is a must. This does not just mean in the awareness campaigns and the initiatives but, what is more important, is being transparent with how this trash is being sorted and recycled, where it's going, to whom and more. Therefore, publishing easy and accessible reports that showcase this process can build back this trust which would boost students' behavioral intentions towards SUPs reduction and help in effective policy implementation.

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