Green Nudges Implementation in South Caucasus Universities: A Survey Report

Author:
Dr. Tsotne Zhghenti,
Associate Professor at Business and Technology University

Contents

Introduction

This report explores the implementation of green nudges in universities across the South Caucasus region. Green nudges are small changes in the decision-making environment aimed at encouraging environmentally friendly behaviors without restricting freedom of choice. The concept, as introduced in "The Little Book of Green Nudges" by UNEP, is particularly relevant in the context of higher education, where institutions can play a critical role in promoting sustainable behaviors.

"The Little Book of Green Nudges" provides a comprehensive guide for applying behavioral science to campus sustainability efforts, offering 40 practical nudges that can be grouped into 8 categories and have been successfully implemented in various universities worldwide. These nudges focus on making sustainable choices easier, more attractive, social, and timely (EAST framework). Examples include using visual cues to promote recycling, setting energy-saving defaults on appliances, and providing incentives for reduced consumption. The book emphasizes that small, well-timed changes in choice architecture can lead to significant impacts on sustainability.

In the South Caucasus, the implementation of green nudges is still in the very early stages of development. Universities in the region are gradually beginning to adopt these practices, but many institutions face challenges related to awareness, resources, and institutional support. This report aims to present the findings of a survey conducted with various universities, which are actively engaged in this regard, to understand their involvement and best practices in implementing green nudges, as well as the obstacles they face in promoting sustainable behavior on campus.

Methodology

The survey consisted of questions designed based on the guidance in "The Little Book of Green Nudges". It included a total of 36 questions related to the following 8 categories of green nudges:

- Energy Conservation
- Water Conservation
- Sustainable Diets
- Reduced Material Consumption
- Sustainable and Reduced Travel
- Reduced Food Waste
- Recycling
- Engagement and Support for Change

Additionally, the survey contained questions about barriers to implementing each of these nudges and general questions about values and outcomes related to sustainability.

Data was collected between September 11th and October 11th (2024) from 12 universities in the South Caucasus, including institutions from Georgia, Armenia, and Azerbaijan. The responding universities are Business and Technology University, Samtkhe-Javakheti State University, St. Andrews Georgian University, Grigol Robakidze University, Shota Meskhia Zugdidi State University, Gori State University, East European University, Akaki Tsereteli State University, Azerbaijan Technical University, Armenian State University of Economics, Armenian National Agrarian University and American University of Armenia.

Some universities also filled out an additional form to share details of their best green nudge (best experience). The data collected for this report does not seek to generalize the findings to all universities in these countries but rather to provide a deeper insight into the implementation of these nudges, highlighting problems, links, and experiences. The universities included in our research are those that have either started implementing or are preparing to implement green nudges. Therefore, the situation in other universities may be less developed.

As researchers, we acknowledge that some universities we contacted chose not to participate for several reasons:

1) Lack of interest in completing the survey.

2) No relevant representative available to answer such specific questions.

3) Failure to complete the survey before the deadline.

Consequently, it is logical to infer that green nudges may not be a current priority for these institutions or they may be unwilling to disclose their low level of involvement.

Green Nudge - Water Conservation

The survey revealed varied levels of adoption of water conservation practices across participating universities. The most common measures were regular faucet leak checks and adherence to a cleaning schedule. More advanced water conservation measures, such as the installation of 30-second sensor faucets, low-flow showerheads, and smart plant irrigation systems, were less frequently adopted. Overall, two-thirds of responding universities reported implementing at least one nudge related to water conservation, which shows a positive, though uneven, trend in addressing water sustainability.

Adoption of Green Nudges for Water Conservation Among Responding Universities
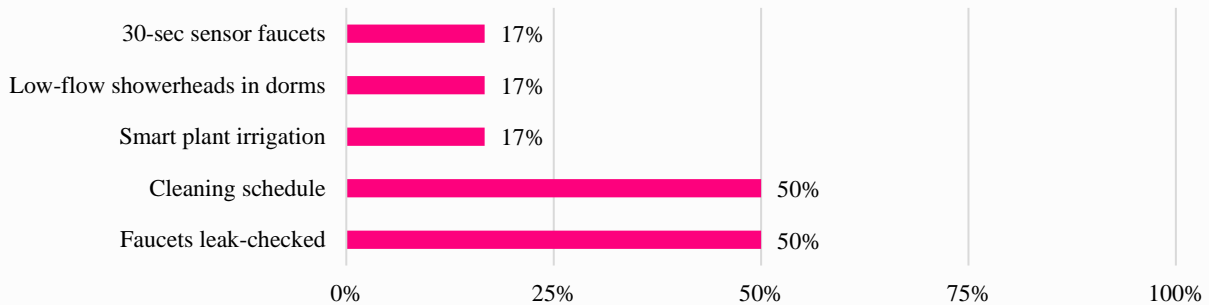
The data highlights that while basic conservation practices are relatively widespread, the uptake of advanced technologies remains limited, likely due to financial constraints which is the most commonly cited challenge. It is followed by a lack of engagement from staff and students. In contrast, administrative barriers were mentioned by very few universities, indicating that they are not a significant obstacle in implementing water conservation efforts.

**Mentioned Challenges in Implementing Material
Consumption Reducing Initiatives Across Universities**
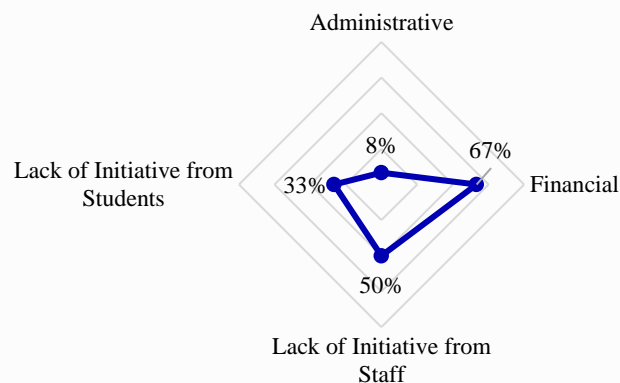
Green Nudge - Energy Conservation

Energy conservation emerged as one of the most embraced aspects of green nudging, with universities focusing on actions like installing energy-saving lamps and enabling eco modes on equipment. Every responding university reported implementing at least one energy conservation measure, showcasing a strong overall commitment to improving energy efficiency. Additionally, all responding universities had at least one green nudge implemented.

Adoption of Green Nudges for Energy Conservation Among Responding Universities
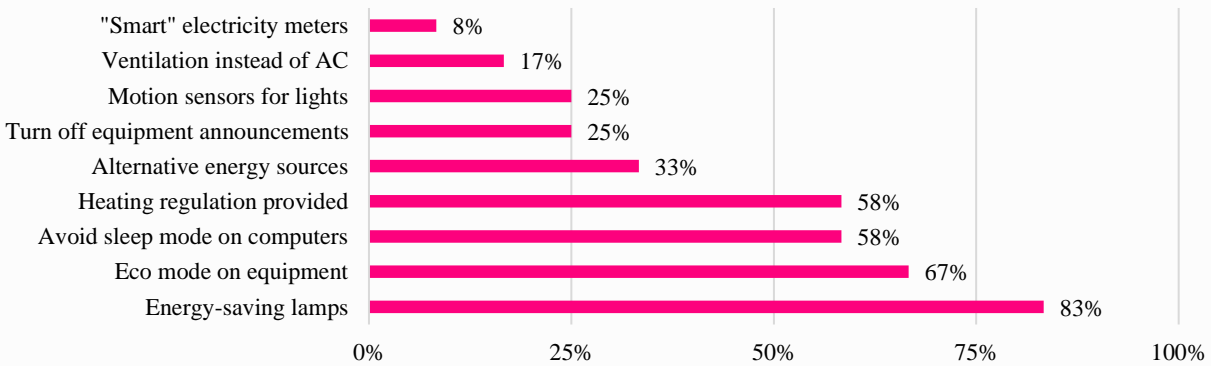
The energy-saving lamps were the most widely adopted measure, with over 80% of the universities using them. Eco modes on equipment were also popular, implemented by two-thirds of the institutions. These actions require minimal user intervention, which might explain their popularity. In contrast, more involved measures like using "smart" electricity meters or encouraging ventilation instead of AC saw much lower adoption rates. Additionally, there was mention of alternative energy sources (Solar PV, Solar Water Heaters, and Heat Exchangers for HVAC). However, respondents also acknowledged that it is challenging for universities to adopt these energy sources due to the specific profiles and limitations of their institutions.

A key insight from the data is the distinction between administration-controlled and user-involvement green nudges. Administration-controlled measures, such as installing energy-saving devices, were adopted by 92% of the universities, while user-involvement nudges, which require active behavior changes, were adopted by 67%. Both types of nudges—administrative and individual—are frequently used together, reflecting a balanced approach where institutions aim to implement structural solutions while also encouraging sustainable behaviors.

Adoption of Specific Green Nudges for Energy Conservation
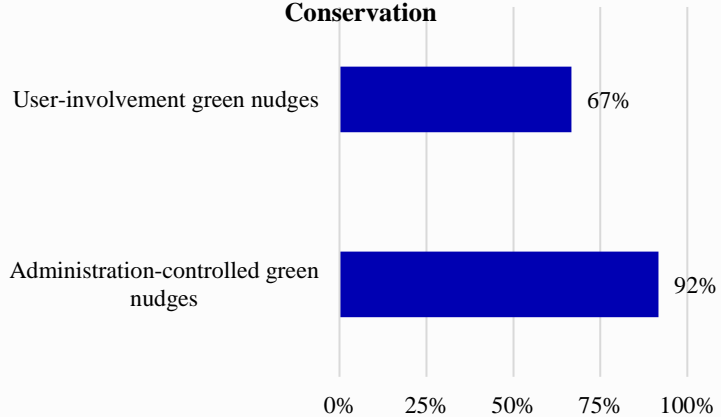
There are strong positive correlations between certain energy-saving measures. Universities that implement eco mode settings for equipment frequently adopt motion sensors for turning lights on and off as well, indicating a tendency to combine these two nudges. Additionally, eco mode settings are often paired with measures ensuring computers and other equipment are not left in sleep mode, demonstrating a broader commitment to energy efficiency in university operations

Challenges in implementing energy conservation measures were also noteworthy. Financial constraints were the most commonly cited barrier, affecting 75% of the responding universities, followed by a lack of initiatives from staff and students. Administrative barriers were mentioned by only one university, making them a very minor obstacle compared to other challenges.

Mentioned Challenges in Implementing Energy Conservation Green Nudges Across Universities
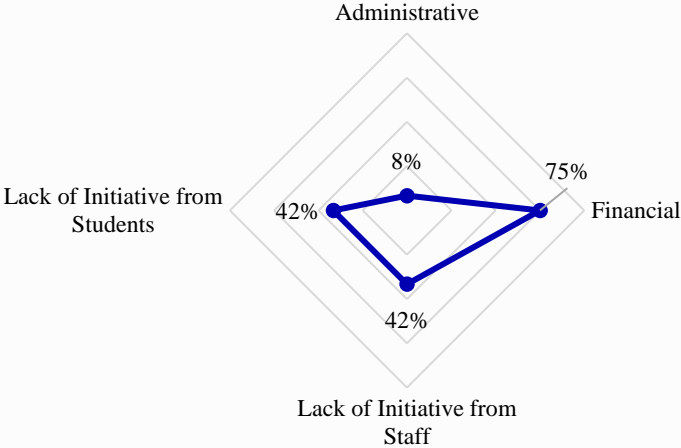
Green Nudge - Sustainable Diets

The survey reveals that universities are gradually adopting green nudges to encourage sustainable diets, though progress is slow. None of the mentioned green nudges for sustainable diets have very high popularity among all universities. Some universities have introduced plant-based menu options and provided incentives for choosing vegetarian dishes, but these efforts remain limited. A few institutions have taken additional steps, such as replacing meat dishes with a meat-vegetable mix and placing eco-friendly products near checkout areas to promote sustainable choices. However, the use of attractive design to highlight sustainable food options is completely lacking across all surveyed universities, indicating an area for potential improvement.
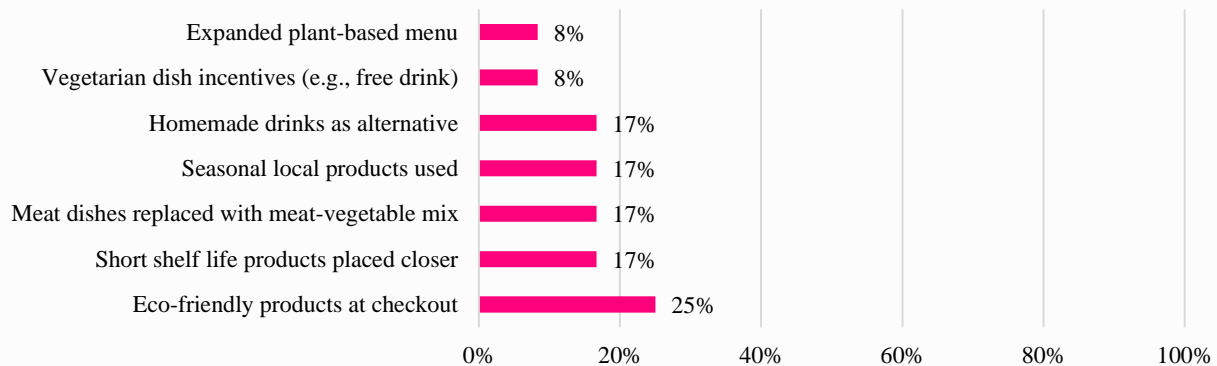
Adoption of Green Nudges for Sustainable Diets Among Responding Universities

Green Nudge	Percentage
Expanded plant-based menu	8%
Vegetarian dish incentives (e.g., free drink)	8%
Homemade drinks as alternative	17%
Seasonal local products used	17%
Meat dishes replaced with meat-vegetable mix	17%
Short shelf life products placed closer	17%
Eco-friendly products at checkout	25%

When it comes to challenges in expanding sustainable food options, four barriers were identified as moderately significant. Financial constraints continue to be a primary challenge, while a lack of administrative support, staff engagement, and student initiative are also common issues. These challenges collectively contribute to the slow progress in fully integrating sustainable food practices across universities.

Mentioned Challenges in Implementing Sustainable Diets Across Universities

Challenge	Percentage
Administrative	33%
Financial	42%
Lack of Initiative from Staff	50%
Lack of Initiative from Students	42%
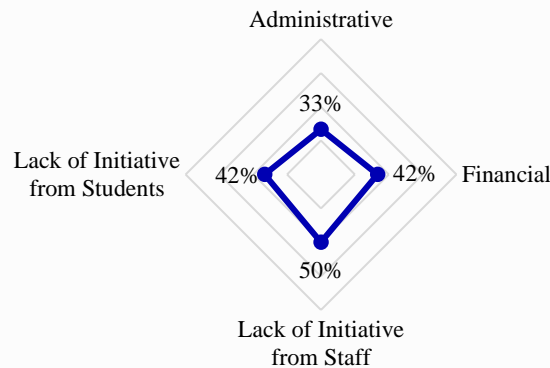
Green Nudge - Reduced Food Waste

The survey indicates that universities are taking limited steps toward reducing food waste. A small percentage of institutions have introduced communal meal services and offered discounts on perishable products to reduce waste. Cafeteria pre-ordering systems, which help minimize overproduction and food waste, have been adopted by a slightly higher number of universities, but overall adoption remains low.

Adoption of Green Nudges for Reduced Food Waste Among Responding Universities

Category	Value
Communal meal services	8%
Perishable product discounts	8%
Cafeteria pre-ordering	17%
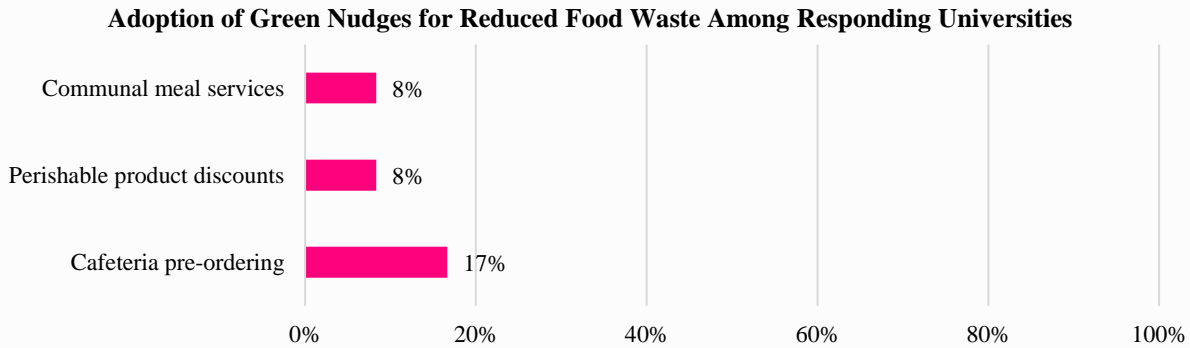
Notably, none of the responding universities mentioned implementing options like agreements with local farmers for organic waste disposal or composting organic waste for use in campus green areas or university greenhouses. These practices, which could contribute to a more circular approach to waste management, are currently absent from the universities' food waste reduction efforts.

Universities face several challenges in implementing food waste reduction initiatives. The most significant barrier reported is the lack of initiative from staff, which affects the success of these programs. Financial constraints are also a substantial obstacle, limiting the ability of universities to invest in more effective food waste reduction systems. Additionally, the lack of initiative from students is another key issue, as their engagement is crucial for the success of these initiatives. Administrative challenges, while present, are less prominent compared to the other difficulties, but they still contribute to the slow progress in fully adopting waste reduction strategies.

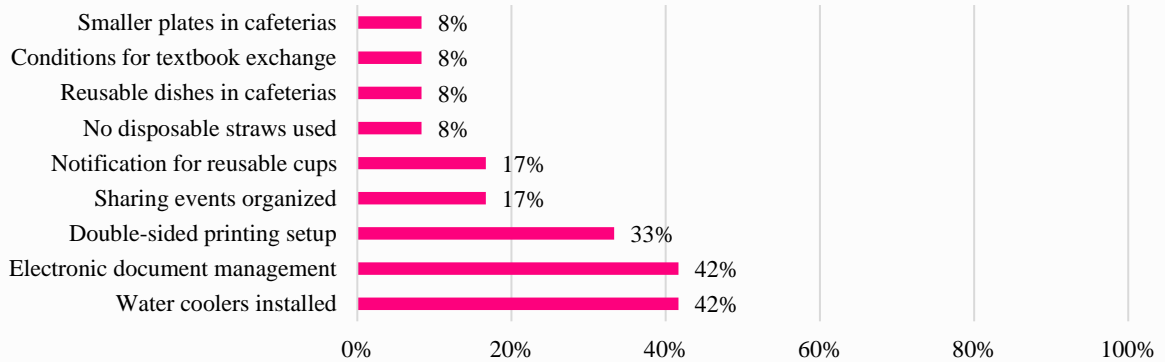**Mentioned Challenges in Implementing Reduced Food Waste Initiatives Across Universities**

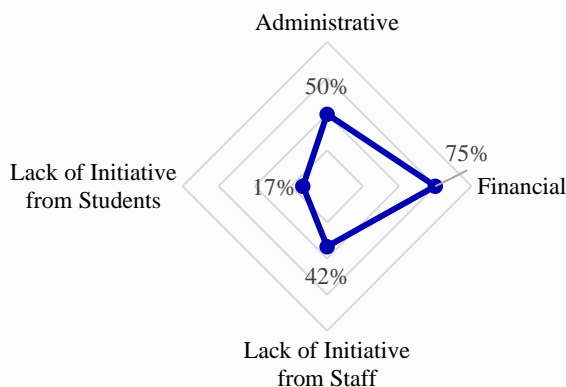| Challenge	Value
Administrative	33%
Financial	58%
Lack of Initiative from Staff	67%
Lack of Initiative from Students	58%
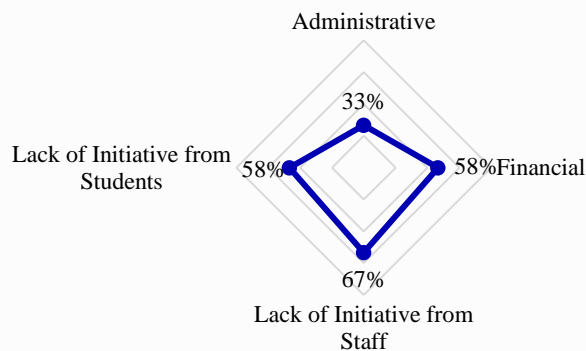
Green Nudge - Reduced Material Consumption

The survey highlights various efforts universities are making to reduce material consumption, with a few noteworthy practices gaining traction. Some institutions have implemented smaller plates in cafeterias, reusable dishes, and conditions for textbook exchange, but these initiatives are still uncommon. Cafeterias that avoid using disposable straws and promote reusable cups are also limited to a small number of universities.

Adoption of Green Nudges for Reduced Material Consumption Among Responding Universities

Nudge	Percentage
Smaller plates in cafeterias	8%
Conditions for textbook exchange	8%
Reusable dishes in cafeterias	8%
No disposable straws used	8%
Notification for reusable cups	17%
Sharing events organized	17%
Double-sided printing setup	33%
Electronic document management	42%
Water coolers installed	42%

More widespread measures include electronic document management and the installation of water coolers, with 42% of universities adopting these practices. Among those using electronic document systems, two-thirds reported that their processes are fully digital, meaning all administrative functions can be conducted online without the need for paper. Additionally, double-sided printing setups have been implemented by 33% of universities, contributing to a reduction in paper waste.

Mentioned Challenges in Implementing Reduced Material Consumption Initiatives Across Universities

Radar chart values:
- Administrative: 50%
- Financial: 75%
- Lack of Initiative from Staff: 42%
- Lack of Initiative from Students: 17%

Events encouraging the sharing of resources and notifications promoting the use of reusable cups are also present, though less common.

Challenges in reducing material consumption are mainly related to financial and administrative barriers. While many universities have taken steps towards reducing their material footprint, difficulties in obtaining institutional support and the costs associated with implementing these changes have slowed progress. The lack of proper infrastructure and limited staff engagement further complicate efforts to make material consumption more sustainable.
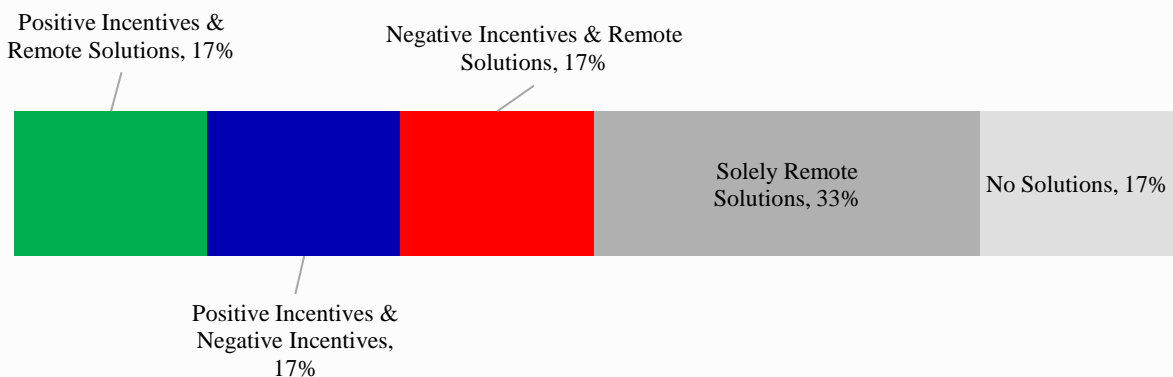
Green Nudge - Sustainable and Reduced Travel

The survey shows that universities have adopted various green nudges to encourage sustainable and reduced travel, though the level of engagement varies. A small number of universities have implemented measures such as increasing bike parking, offering public transport discounts, or organizing carpooling services. Some institutions have introduced online courses aimed at reducing the need for physical travel, but these initiatives remain limited in scope.

Adoption of Green Nudges for Sustainable and Reduced Travel Among Responding Universities

Measure	Percentage
More bike parking	8%
Discounts on public transport	8%
Carpooling services	8%
Online courses reduce transport	8%
Carbon footprint offset for trips	17%
Promote bikes/scooters/skateboards	25%
Bicycle rallies	25%
Parking application needed	33%
Online conferences/hybrid formats	75%
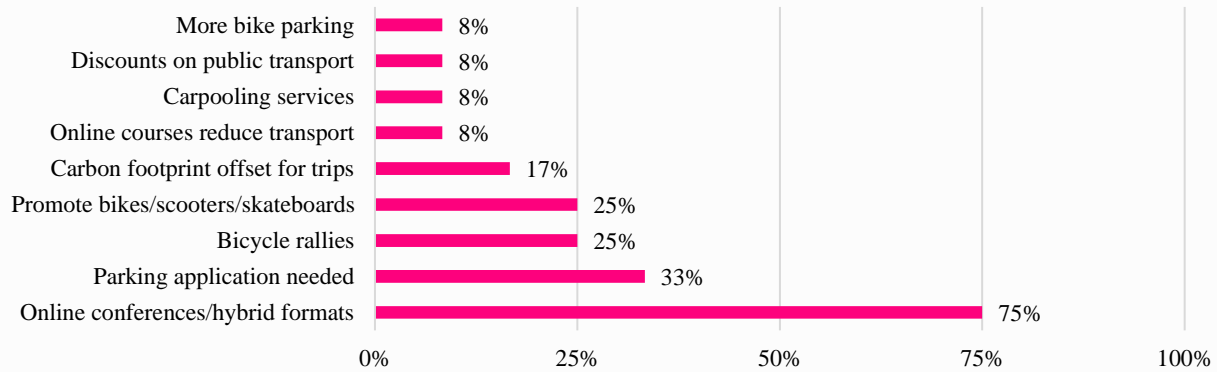
More widely adopted measures include promoting the use of bikes, scooters, or skateboards, as well as organizing bicycle rallies to encourage sustainable commuting. Parking applications that help manage parking more efficiently have also been introduced, though their use is less common. Additionally, a few universities have implemented carbon footprint offsetting for university-related travel. The most popular measure by far is the promotion of online conferences and hybrid formats, which are being used extensively to reduce travel requirements across campuses.

Distribution of Responding Universities by Adoption of Travel Incentives and Remote Solutions

Positive Incentives & Remote Solutions, 17%

Negative Incentives & Remote Solutions, 17%

Positive Incentives & Negative Incentives, 17%

Solely Remote Solutions, 33%

No Solutions, 17%

Some universities are either not using any travel-related solutions or are focusing entirely on remote solutions, like online meetings and hybrid events, to reduce the need for physical transportation. Beyond this, there are varying approaches being taken to incentivize greener travel.

Some universities have combined positive incentives, such as promoting bike use, with remote solutions. Others have implemented negative incentives, such as restricting parking access, alongside remote formats. Additionally, some institutions are using a mix of both positive and negative incentives to push for more sustainable commuting options.

The graph clearly shows that financial constraints were the most significant barrier to implementing food waste reduction initiatives, with the highest mention among surveyed universities. This challenge outweighs other obstacles, which were mentioned at lower rates. These other challenges, while frequently present, did not pose as significant a barrier compared to financial limitations.

Mentioned Challenges in Implementing Sustainable and Reduced Travel Initiatives Across Universities

Administrative

42%

83%

Financial

Lack of Initiative from Students

33%

42%

Lack of Initiative from Staff
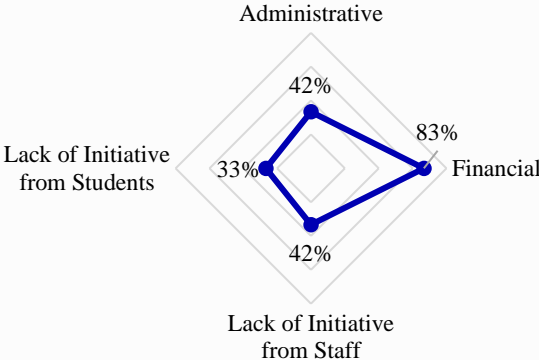
Green Nudge - Recycling

The survey reveals that not many different green nudges are being used by universities for recycling and waste management. While half of the universities have installed waste separation systems, other approaches are less common. Only a third of institutions have implemented educational materials for waste separation or focused on using attractive waste container designs to encourage recycling behavior. Waste separation campaigns combined with attractive containers are even less frequent, adopted by a small number of universities.

Adoption of Green Nudges for Recycling Among Responding Universities
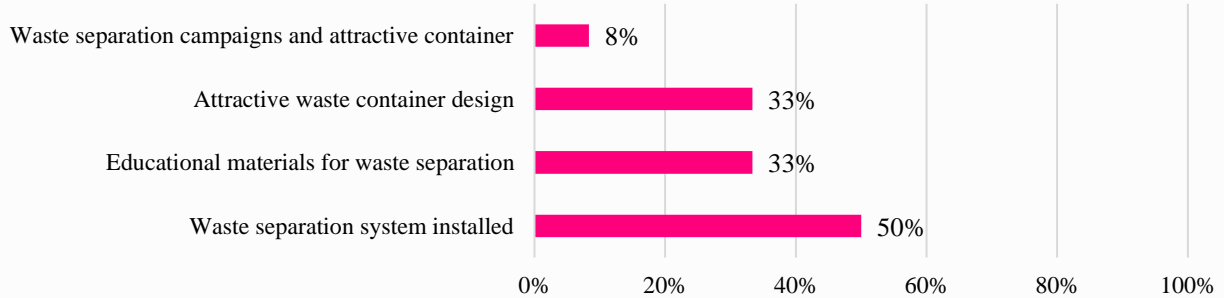
Interestingly, none of the universities reported using the method of making containers for waste separation more accessible than regular trash bins, despite many having waste separation systems in place. This gap suggests that while basic infrastructure for recycling exists, there is a lack of additional nudges to enhance convenience and visibility for students and staff.

The main difficulties universities face in implementing recycling initiatives are financial and administrative barriers. Financial challenges are the most commonly mentioned, followed closely by administrative hurdles. Additionally, many universities report a lack of initiative from staff, which further slows progress in promoting recycling efforts. Some institutions also experience a lack of engagement from students, contributing to the difficulty in fully integrating effective recycling systems on campuses.

Mentioned Challenges in Implementing Recycling Across Universities
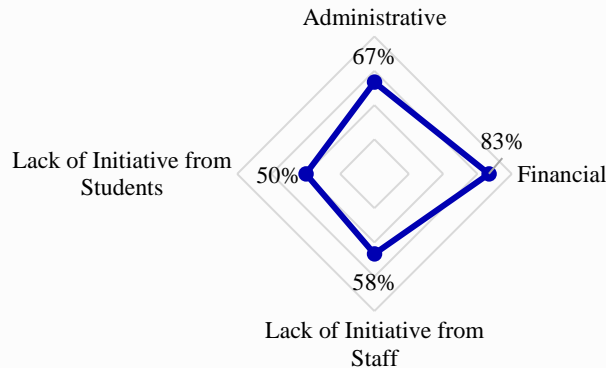
Green Nudge - Engagement and Support for Change

The survey finds that universities have implemented various green nudges aimed at fostering engagement and support for sustainable change, although the overall adoption remains modest. Only a small percentage of universities are offering courses on eco-friendly lifestyles or aiming to improve their standing in green university rankings. Similarly, few universities are publishing waste and energy reduction rankings or providing personalized sustainability instructions to students and staff.
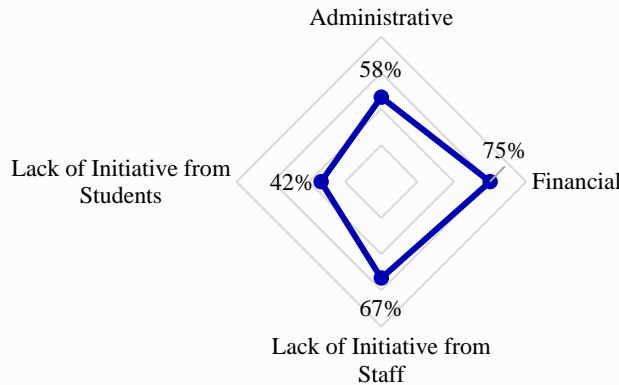
Adoption of Green Nudges for Engagement and Support for Change Among Responding Universities

Category	Percentage
Courses on eco-friendly lifestyles	8%
Aiming for green university rankings	8%
Publishing waste and energy reduction rankings	8%
Personalized sustainability instructions	17%
Encouraging sustainable habits	25%
Collaborative events for sustainability	25%
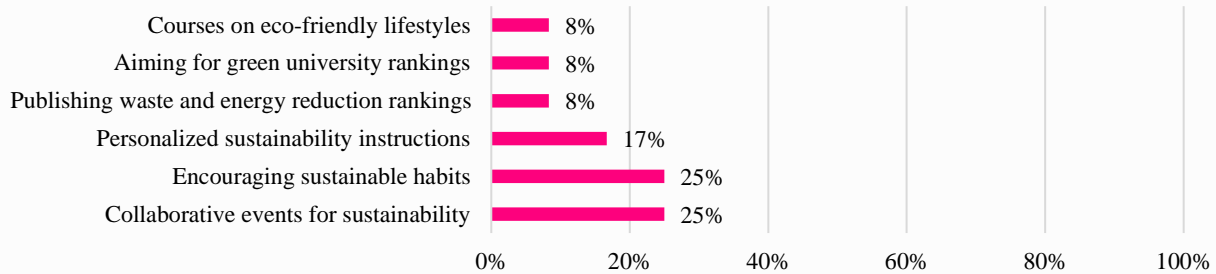
However, initiatives focused on encouraging sustainable habits and organizing collaborative events for sustainability have seen slightly higher levels of adoption, with more institutions actively promoting these efforts. These nudges aim to involve the broader university community in sustainability initiatives, fostering a culture of environmental responsibility.

Universities report several challenges in promoting engagement and support for change. Four challenges were found to be moderately significant. Financial constraints, lack of institutional support, and insufficient engagement from both staff and students were frequently mentioned, reflecting the difficulty in sustaining long-term commitment to environmental initiatives. These challenges slow the progress of building a strong, engaged community around sustainability efforts on campus.

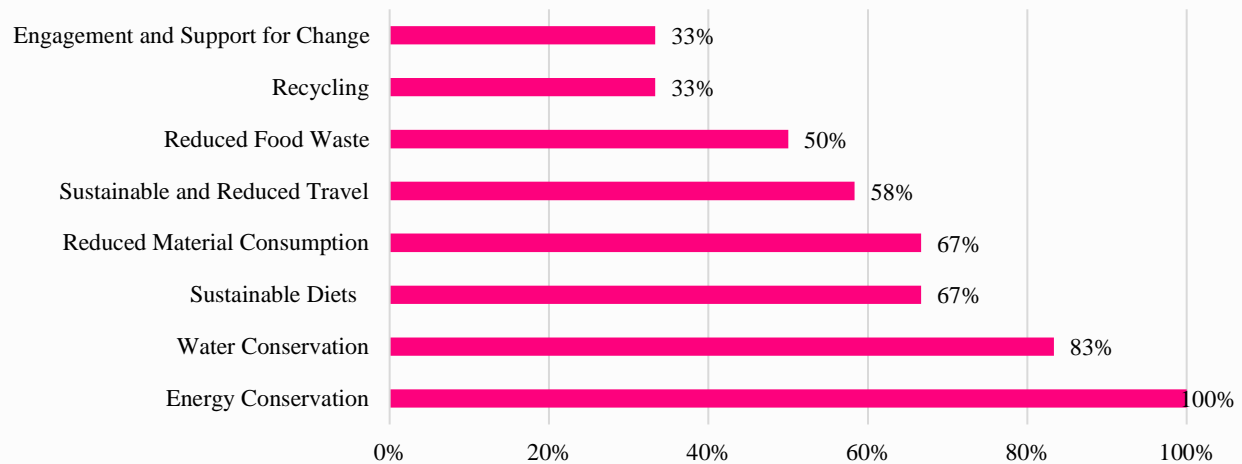**Mentioned Challenges in Implementing Engagement and Support for Change Across Universities**

Challenge	Percentage
Administrative	58%
Financial	75%
Lack of Initiative from Staff	67%
Lack of Initiative from Students	42%

General Findings between Green Nudges

The data reveals that energy conservation is the most frequently adopted category of green nudges across universities, with every institution implementing at least one measure in this area. Popular energy-saving initiatives, such as enabling eco mode settings on equipment, installing energy-saving lamps, and motion sensors for lights, have seen widespread adoption. These nudges are relatively easy to implement and provide immediate benefits, which likely contributes to their popularity.

Adoption of at Least One Green Nudge from Selected Categories Among Responding Universities

Category	Percentage
Engagement and Support for Change	33%
Recycling	33%
Reduced Food Waste	50%
Sustainable and Reduced Travel	58%
Reduced Material Consumption	67%
Sustainable Diets	67%
Water Conservation	83%
Energy Conservation	100%

In contrast, some other nudges, like those promoting sustainable diets and reducing food waste, are less common. While a few universities have introduced plant-based menus or communal meal services, these efforts remain limited compared to more widespread initiatives like energy conservation and recycling. Additionally, some nudges, such as making waste separation containers more accessible than regular trash bins, were not adopted at all.

Correlation Matrix of Green Nudge Adoption Across Universities

	Water Conservation	Sustainable Diets	Reduced Material Consumption	Sustainable and Reduced Travel	Reduced Food Waste	Recycling	Engagement and Support for Change
Water Conservation	-	0.13	0.63	0.63	0.13	**0.84**	0.35
Sustainable Diets	0.13	-	0.50	0.32	0.63	0.24	0.35
Reduced Material Consumption	0.63	0.50	-	0.63	0.50	**0.84**	**0.71**
Sustainable and Reduced Travel	0.63	0.32	0.63	-	0.32	0.53	0.45
Reduced Food Waste	0.13	0.63	0.50	0.32	-	0.24	0.35
Recycling	**0.84**	0.24	**0.84**	0.53	0.24	-	0.51
Engagement and Support for Change	0.35	0.35	**0.71**	0.45	0.35	0.51	-

Interestingly, the data shows strong correlations between the adoption of certain nudges. For instance, universities that have implemented water conservation measures are also likely to adopt recycling initiatives, indicating a combined effort to address sustainability in multiple areas. Similarly, reduced food waste initiatives show moderate correlations with efforts to reduce material consumption and promote sustainable diets, reflecting a broader, integrated approach to sustainability.

These correlations suggest that universities are not implementing green nudges in isolation. Instead, they tend to combine related measures, creating a more comprehensive sustainability strategy. The adoption of one measure often goes hand-in-hand with the implementation of others, reinforcing sustainable practices across various aspects of campus life.

Barriers in Green Nudges Adoption

The analysis reveals the frequency of challenges faced by universities in implementing green nudges, highlighting which barriers are most prominent in each area. It's interesting to see that the types of difficulties vary significantly depending on the specific green nudge being implemented.

Administrative challenges are most pronounced in **recycling** (67%) and **engagement and support for change** (58%), where universities reported institutional obstacles as a significant hindrance. **Reduced material consumption** and **sustainable and reduced travel** also faced notable administrative barriers (50% and 42%, respectively). In contrast, **energy conservation** and **water conservation** had the lowest administrative barriers, each with only 8% of universities citing them as an issue, indicating that these nudges encounter fewer procedural difficulties.

Financial constraints are the most frequently mentioned barrier overall. **Sustainable travel** and **recycling** face particularly high financial challenges, with 83% of universities in these categories reporting budgetary limitations. **Energy conservation** and **reduced material consumption** also have significant financial barriers, each at 75%. **Sustainable diets**, at 42%, face fewer financial hurdles compared to other areas, but financial challenges remain a notable factor.

Reported Difficulties in Implementing Green Nudges Among Responding Universities
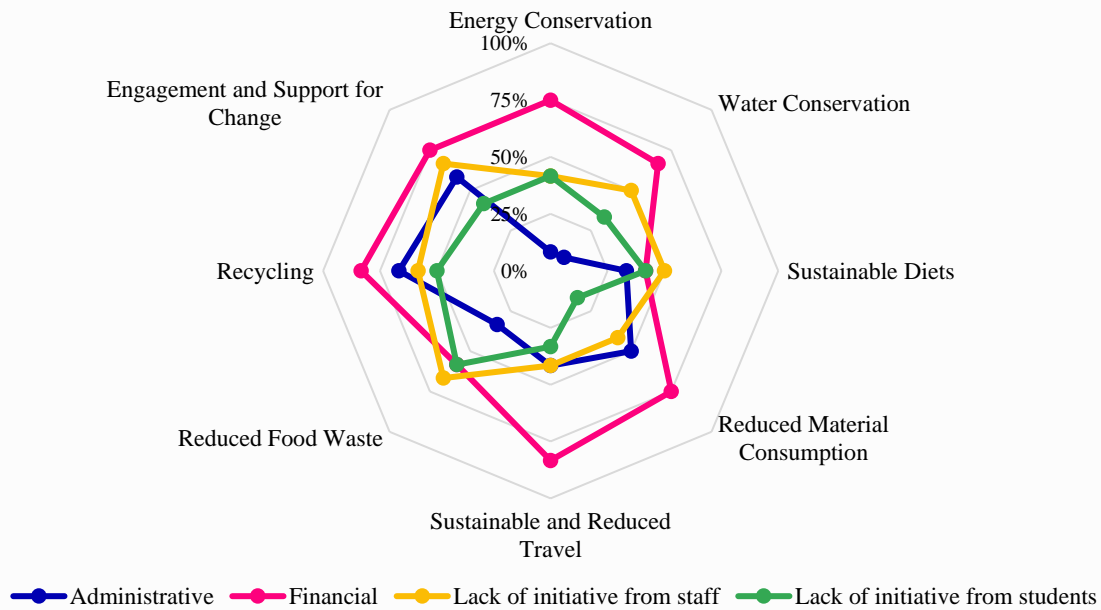
A lack of initiative from staff is a major challenge in **reduced food waste** and **engagement and support for change**, where 67% of universities reported this as an issue. **Sustainable diets** and **recycling** also experience staff-related difficulties, with 50% and 58% of universities, respectively, struggling to gain active staff participation. **Energy conservation** and **reduced material consumption** show slightly lower figures, with 42% of universities mentioning staff-related challenges.

Challenges related to student engagement (**Lack of Initiative from Students)** are most significant in **reduced food waste** (58%) and **recycling** (50%). **Sustainable diets** and **energy conservation** also see considerable student-related barriers (42% each), while **reduced material consumption** has the lowest figure, with only 17% of universities reporting this as a major issue. This shows that, although student engagement is critical for the success of many green nudges, some areas like material consumption face fewer issues related to student initiative.

When analyzing the overall distribution of difficulties, **financial barriers** have the highest share across most green nudges, particularly in **energy conservation**, **sustainable travel**, and **recycling**, where budget constraints dominate the challenges. **Administrative barriers** are most prominent in **recycling** and **engagement**, while **staff and student engagement** remain a persistent challenge in **reduced food waste** and **sustainable diets**. Note: each respondent university could mention multiple obstacles, further illustrating the complexity of challenges they face).

Distribution of Reported Difficulties in Implementing Green Nudges Among Responding Universities
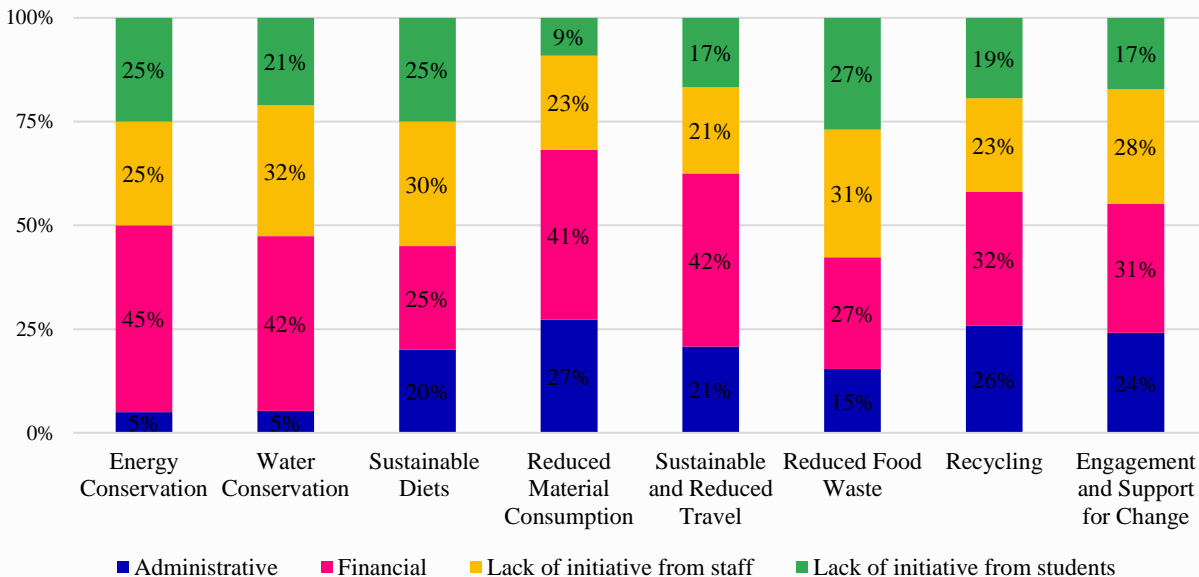
The deeper analysis categorizes green nudges based on two key dimensions:

1) the share of financial difficulties encountered by universities in implementing them and
2) the extent of interest-based challenges, such as lack of initiative from students and staff.

These dimensions allow us to position the nudges into four distinct quadrants, highlighting the barriers universities face when adopting each type of initiative:

Costly and Unpopular Nudges (Top-Right Quadrant) - This quadrant represents green nudges that face both significant financial and interest-based barriers, making them difficult to implement. **Wwater conservation** and **energy conservation** measures fall into this category. Although these initiatives are important for sustainability, the high costs and the low enthusiasm from students and staff create a considerable hurdle for universities.

Financial vs. Interest-based Barriers among Responding Universities in Green Nudge Adoption
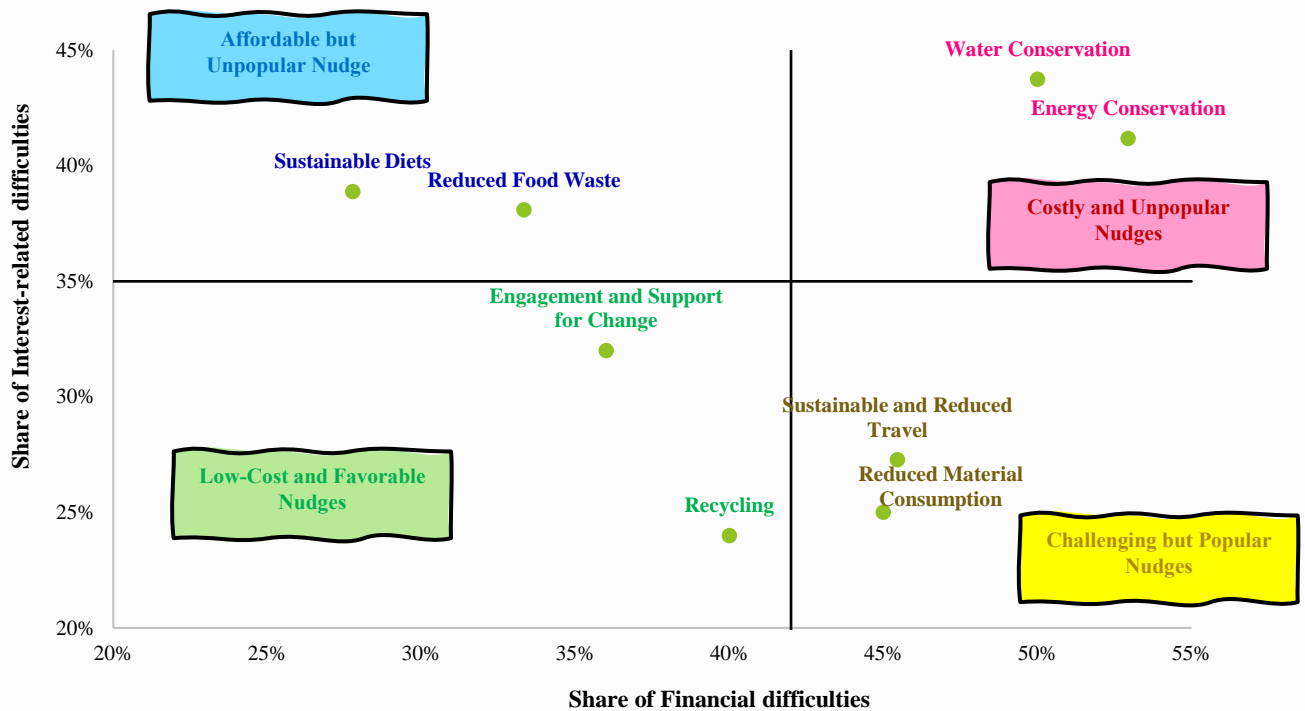
Challenging but Popular Nudges (Bottom-Right Quadrant) - Nudges in this quadrant face significant financial challenges but are relatively popular among students and staff. **Sustainable and recuded travel** and **Reduced material consumption** are examples of green nudges placed here. While these initiatives may require substantial investment, there is strong interest and engagement from the university community, which may facilitate their adoption despite the financial difficulties.

Affordable but Unpopular Nudges (Top-Left Quadrant) - This quadrant features green nudges that are financially feasible but struggle with low interest from staff and students. **Sustainable diets** and **Reduced food waste** are placed here. Although these nudges don't pose significant financial burdens, universities still face challenges in encouraging the university community to participate and adopt these practices.

**Low-Cost and Favorable Nudges (Bottom-Left Quadrant) -** In this quadrant, nudges are both financially feasible and well-received by the university community. **Recycling** and **Engagement and Support for Change** are examples of nudges that fall in this category. These initiatives benefit from relatively low costs and enjoy higher levels of engagement, making them easier for universities to implement.

General Value of Green Nudges and Their Outcomes

When asked about the perceived value of implementing green nudges, responding universities were allowed to choose up to three answers, highlighting various aspects they consider most beneficial. **Collaboration in environmental initiatives** emerged as the most commonly mentioned benefit, with 58% of respondents identifying it as a key value. This indicates that universities place significant importance on working together in sustainability efforts, both within their own institutions and with external partners.

Other benefits, such as the **availability of eco-friendly alternatives**, **environmental awareness increase**, and **international activities engagement**, were chosen by one-third of universities. These responses suggest that universities view green nudges not only as a means to promote sustainable behavior but also as a way to raise environmental consciousness and enhance their involvement in global sustainability initiatives.

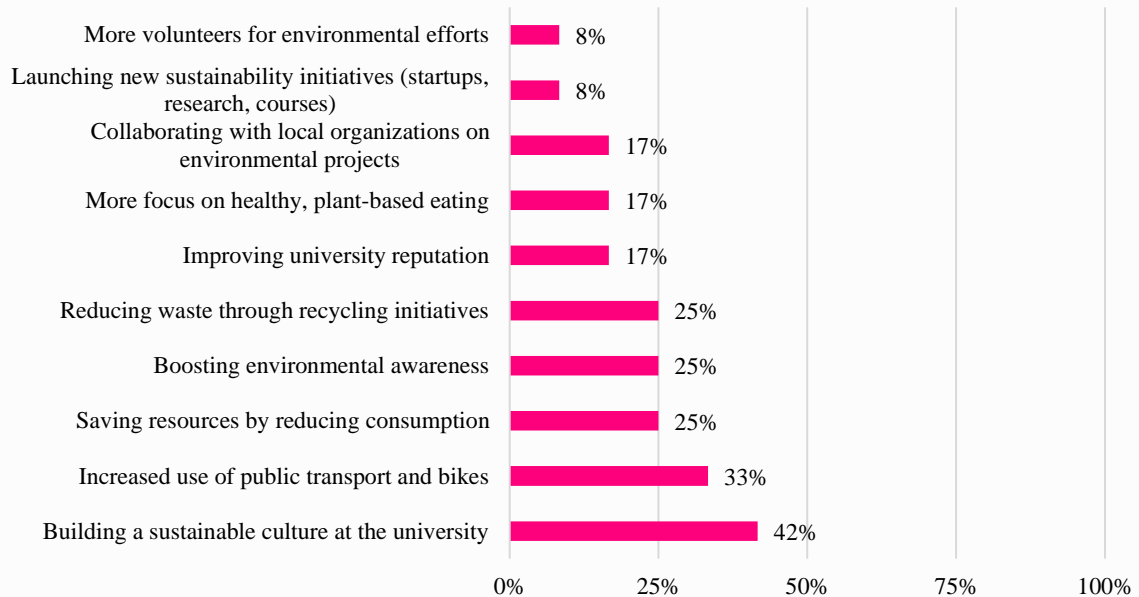**General Value of Green Nudges Among Responding Universities**
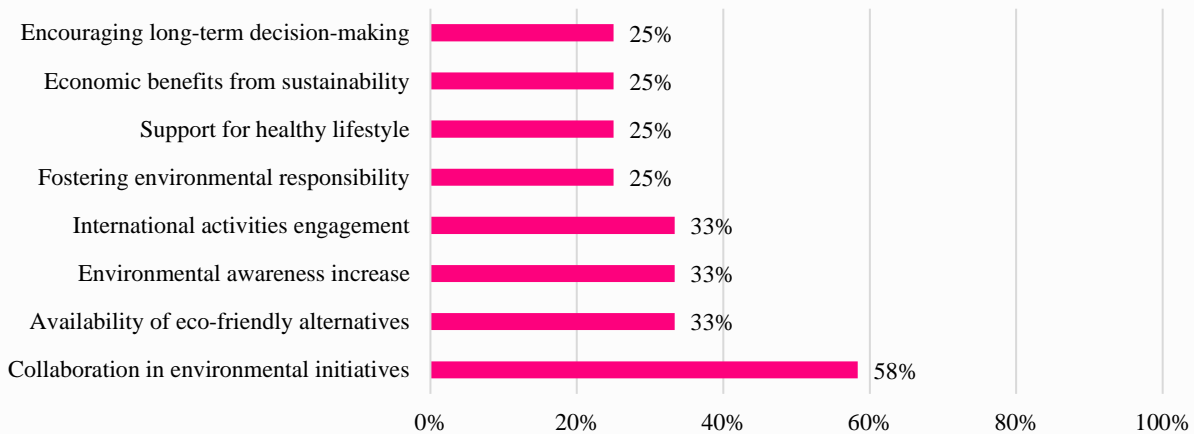
On the other hand, less commonly mentioned values **include encouraging long-term decision-making**, **economic benefits from sustainability**, **support for a healthy lifestyle**, and **fostering environmental responsibility**, all cited by one-quarter of respondents. While these aspects are still considered important, they seem to resonate less strongly compared to collaboration and the availability of sustainable options.

The implementation of green nudges across responding universities has led to a variety of positive outcomes. One of the most frequently cited results is **building a sustainable culture** at the university, reflecting the long-term impact of these initiatives. Increased use of **public transport and bikes** was also noted as a significant outcome, showing that sustainability efforts are influencing transportation choices on campuses.

Universities have also seen improvements in **reducing waste through recycling initiatives**, **boosting environmental awareness**, and **saving resources by reducing consumption**. These outcomes highlight the practical benefits of green nudges in fostering more sustainable behaviors among students and staff.

Main Outcomes of Green Nudges Among Responding Universities

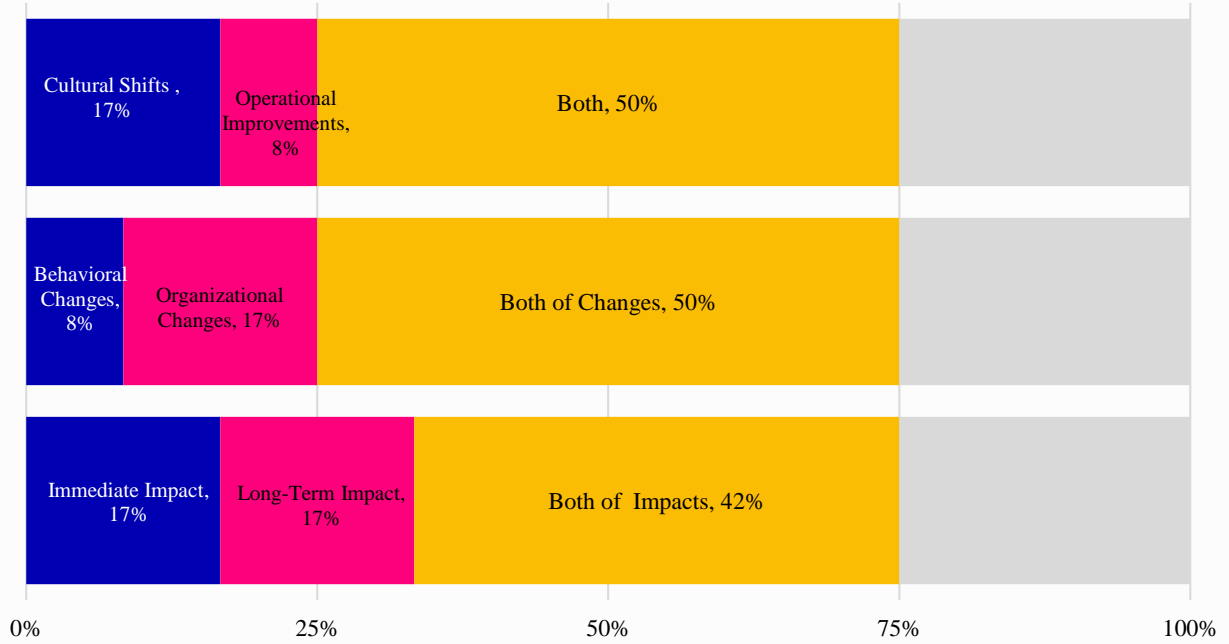| Outcome	Percentage
More volunteers for environmental efforts	8%
Launching new sustainability initiatives (startups, research, courses)	8%
Collaborating with local organizations on environmental projects	17%
More focus on healthy, plant-based eating	17%
Improving university reputation	17%
Reducing waste through recycling initiatives	25%
Boosting environmental awareness	25%
Saving resources by reducing consumption	25%
Increased use of public transport and bikes	33%
Building a sustainable culture at the university	42%

Other reported outcomes include an increase in **collaboration with local organizations** on environmental projects, a greater focus on **healthy, plant-based eating**, and an overall improvement in **university reputation**. These effects show that sustainability initiatives not only enhance environmental responsibility but also improve the university's standing and connections within the community.

When it comes to the broader impact, universities reported a balance between **cultural shifts** and **operational improvements**. Many universities noted that both cultural and operational changes were occurring simultaneously, reflecting a comprehensive transformation toward sustainability. This combination suggests that green nudges are not only influencing daily behaviors but are also driving deeper organizational changes to support long-term sustainability efforts.

Similarly, **organizational changes** are seen as equally important as **behavioral changes**. While some universities reported a stronger focus on modifying operational practices, others highlighted the importance of shifting individual behaviors to create a more environmentally responsible campus culture. Most respondents acknowledged the interplay between both types of changes, indicating that successful green nudge implementation requires attention to both structural reforms and individual actions.

These changes have **both immediate and long-term impacts**, demonstrating that universities are achieving short-term successes while laying the groundwork for sustained progress in their sustainability initiatives.

Distribution Green Nudges Outcomes in a Broader Context Among Responding Universities

Cultural Shifts , 17%	Operational Improvements, 8%	Both, 50%	

Behavioral Changes, 8%	Organizational Changes, 17%	Both of Changes, 50%	

Immediate Impact, 17%	Long-Term Impact, 17%	Both of Impacts, 42%	

0%   25%   50%   75%   100%

Self-Evaluated Success in Implementing Green Nudges

The chart highlights the relationship between the adoption rate (the percentage of universities that have implemented at least one green nudge in a given category) and the self-evaluated success (rated from 1 to 10) of those initiatives. It shows a clear trend: the more widely a green nudge is adopted, the higher it is rated in terms of success. This correlation, measured at **0.82**, indicates that universities tend to feel more successful in implementing nudges that are more commonly adopted.

Adoption Rates and Self-Evaluated Success of Green Nudges Among Universities
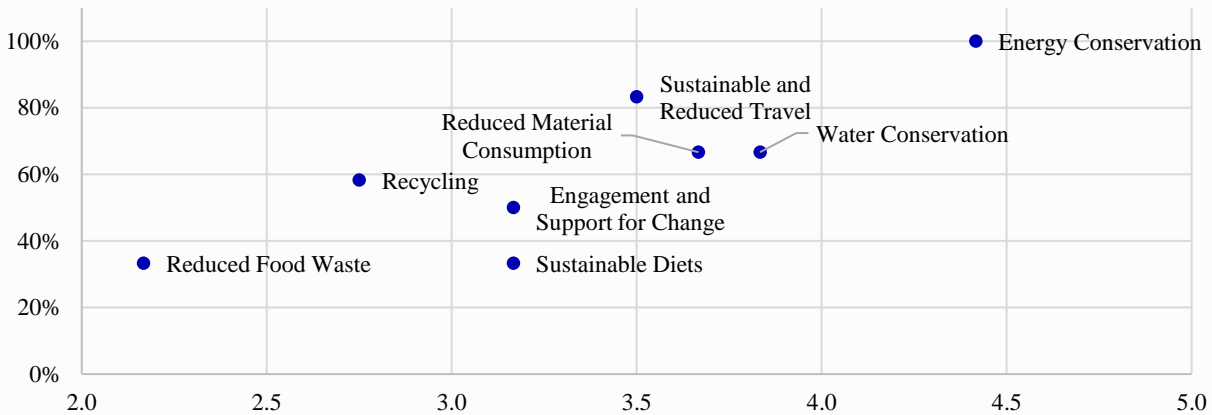
For example, energy conservation is both the most widely adopted and the highest-rated in terms of success. Similarly, categories like sustainable and reduced travel, water conservation, and reduced material consumption also display high levels of both adoption and success.

In contrast, initiatives such as reduced food waste and sustainable diets are less frequently adopted and receive lower success ratings, suggesting that these areas may need additional focus or resources to enhance both their adoption and effectiveness.

Additionally, universities that have adopted more green nudges tend to rate their overall success higher. The correlation between the number of nudges implemented and the overall success evaluation is **0.81**, suggesting that universities view their success more positively when they adopt multiple initiatives, highlighting the relevance and reliability of their self-evaluations.

Conclusions and Recommendations

The implementation of green nudges in universities across the South Caucasus has shown encouraging trends, though big challenges persist. Based on the survey data, best practices from leading universities and insights gathered throughout the communication process with participating institutions, several key findings and recommendations emerge:

Key Findings:

1. **Energy Conservation is the Most Adopted Green Nudge**: Every responding university reported implementing at least one energy conservation measure. These initiatives, such as installing energy-saving lamps and enabling eco modes on equipment, are the most widespread due to their immediate benefits and ease of implementation.

2. **Financial Constraints are a Major Barrier**: Financial difficulties are the most frequently cited challenge across most green nudge categories, particularly in energy conservation, sustainable travel and recycling.

3. **Staff and Student Engagement is Crucial**: A lack of initiative from staff and students hinders the adoption of several green nudges, especially in areas like reduced food waste and sustainable diets. Increasing engagement is essential for the success of these measures.

4. **Administrative Barriers are Less Crucial:** Administrative challenges were reported less frequently compared to financial and engagement-related barriers. For many green nudges, such as energy conservation and water conservation, administrative barriers were minor, indicating that the main obstacles lie elsewhere.

5. **Water Conservation and Recycling are Often Combined**: Many universities that have implemented water conservation measures also tend to adopt recycling initiatives, reflecting a broader effort to address sustainability across multiple areas.

6. **Differences in Financial vs Interest-Based Barriers**: Nudges like water conservation and energy conservation were frequently cited as facing both financial difficulties and a lack of interest from students and staff. Conversely, sustainable travel and reduced material consumption were popular among staff and students but still faced financial challenges. Sustainable diets and reduced food waste were affordable but lacked student and staff interest, while <u>recycling and engagement initiatives were both affordable and had high interest, making them the most favorable</u>.

7. **Sustainable Diets and Food Waste Management Lag Behind**: These nudges are less frequently adopted compared to others and their success ratings are lower, indicating a need for additional support and focus in these areas.

Recommendations:

1. **Start with Low-Budget Nudges**: If financial barriers are a significant concern, universities can begin with green nudges that have comparatively lower financial and administrative

hurdles. Initiatives such as promoting sustainable diets, reducing food waste, engaging in collaborative events, or spreading awareness of green activities are cost-effective starting points that can build momentum for broader sustainability efforts.

2. **Increase User Involvement**: To enhance the overall sustainability culture, universities should focus not only on administrative measures but also on nudges with high user involvement. Encouraging active participation from staff and students will foster more sustainable practices and help spread awareness of green initiatives more effectively across the campus.

3. **Collaborate with Local Enterprises**: Partnering with small and local enterprises can help address sustainability challenges through green nudges. Successful cases from regional universities have demonstrated that these partnerships can reduce both administrative and financial costs, making it easier for universities to implement impactful sustainability projects.

4. **Encourage Cross-Institutional Collaboration**: Establishing networks between universities to share best practices and solutions can further enhance green nudge adoption. Collaborative projects, sharing resources, and joint sustainability initiatives can help scale successful green nudges across institutions, benefiting from the collective experience and knowledge.

Annex – Best Practices

Promoting Paper Waste Reduction at Business and Technology University, Georgia

At Business and Technology University (BTU), a successful green nudge initiative was undertaken to promote paper waste reduction. The campaign focused on encouraging digital communication, minimizing paper usage, and practicing electronic documentation. This initiative has led to quicker actions, improved job performance, and reduced the university's overall environmental footprint.

The green nudges were initially implemented within the BTU campus due to the awareness of the significant environmental impact caused by paper waste. BTU aimed to reduce this impact by integrating modern digital tools into everyday administrative and educational activities, allowing the university community to embrace paperless work methods.

Goals:

- Encourage students, staff, and faculty to actively reduce paper usage by adopting digital tools for communication and documentation.
- Create a model for other institutions to demonstrate how effective digital transformation can lead to sustainable campus practices.

Methods, Actions and Resources: The actions taken included promoting the use of digital tools like emails, collaborative platforms, and digital forms for internal communications. Training sessions were organized to ensure that everyone was comfortable with the technology, thus facilitating the transition. Posters and reminders were placed around campus to promote the benefits of going paperless.

Outcomes: The initiative led to quicker and more effective actions by students and staff, greater efficiency, and a measurable reduction in paper waste. It also created a sense of responsibility among the university community, helping them understand the environmental impact of their actions.

Recommendation: Implementing green nudges is most effective when actions are interconnected and the process flows smoothly without interruptions. This interconnectedness fosters a holistic approach to sustainability, where each action reinforces the others, creating a cohesive system that encourages positive behavior changes. For example, promoting digital communication alongside recycling initiatives not only reduces paper waste but also enhances a sustainability mindset across the campus.

Development of Green Ecology at Azerbaijan Technical University

A green nudge initiative was developed to enhance the ecological health of the campus environment. The focus of this initiative was to promote cleanliness and reduce plastic usage. Activities were centered around educating students and staff about the impact of litter and fostering behaviors that keep the campus clean and environmentally friendly.

The university's interest in green nudges stems from a personal passion for environmental protection shared by the community. Although limited resources were available, individual initiatives contributed to changing behaviors and promoting environmental consciousness.

Goals:

- Reduce plastic waste and keep the campus environment clean.
- Foster community-led initiatives to sustain green practices.

Methods and Actions: The approach involved holding awareness campaigns about the impact of waste, encouraging less plastic usage, and leveraging the enthusiasm of the student community. Posters and events were also organized to engage students in these sustainability practices.

Outcomes: A measurable reduction in campus waste and an increased sense of environmental responsibility among students and staff.

Recommendation: Continued education and community involvement are crucial for building momentum and creating a sustainable culture of environmental protection.

Energy-Efficient Lighting at Shota Meskhia Zugdidi State University, Georgia

Shota Meskhia Zugdidi State University initiated an energy efficiency program by installing energy-saving lamps throughout the campus. The primary focus was on promoting awareness of energy consumption and demonstrating the practical benefits of energy-efficient technologies to the university community.

The project was a response to the existing practice of using energy-efficient lighting, but with a more structured approach to engage the university community and raise awareness of sustainability issues.

Goals:

- Raise awareness about the benefits of energy efficiency.

- Reduce overall energy consumption on campus by adopting modern technologies.

Methods and Actions: Energy-efficient lamps were installed, and the university organized training sessions and awareness campaigns on energy efficiency. Workshops were also held to inform students and staff about the importance of reducing energy usage.

Outcomes: The initiative resulted in an increased awareness of environmental sustainability, reduced energy consumption, and enhanced safety across campus due to improved lighting.

Recommendation: Engage stakeholders through workshops to share best practices and encourage widespread adoption of energy-efficient technologies.

Green Procurement Promotion at Armenian State University of Economics

The Armenian State University of Economics successfully promoted green procurement by digitalizing procurement processes, reducing the need for paper-based transactions. This transition supported the university's broader goal of minimizing its environmental footprint.

The green nudges were motivated by the need to reduce paper usage and foster a more sustainable procurement process that aligns with modern digital standards.

Goals:

- Promote digital transformation within the university.

- Increase sustainability through green procurement practices.

Methods, Actions and Resources: The university made announcements regarding procurement through digital platforms, reducing paper consumption and streamlining administrative processes. Specialists were appointed to oversee green procurement and digital transformation efforts. Resources included two specialists focusing on green procurement and digitalization, ensuring an effective transition to more sustainable practices. The total additional financial resources required for this is 15.000 USD annually.

Outcomes: The implementation led to a 30% reduction in paper use and improved efficiency within the procurement department.

Recommendation: Combining green procurement with other sustainability initiatives can maximize the impact, creating a holistic culture of sustainability across the university.