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# Students' attitudes towards campus sustainability: a comparison among three universities in Sweden

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## Abstract

The role of higher education institutions (HEIs) in promoting and supporting sustainability has outstretched over the past decades as a result of various declarations and commitments related to the need for sustainability in HEI. As a consequence, HEIs tried to achieve campus sustainability by integrating sustainability concept into their projects, partnerships, assessments, programs, curricula, and research. Accordingly, achieving campus sustainability is not feasible without the involvement of students as the biggest stakeholders of HEI. The students have a substantial impact on sustainability by contributing to and supporting campus sustainability. This research aims to compare and analyse the attitudes of students towards campus sustainability in relation to the influence of the university. The research is conducted at three universities in Sweden, which have different environmental management system certification status. A questionnaire-based survey is employed to collect the data from students at these three universities. It aims to investigate the university's efforts to support sustainability and students' awareness towards those efforts and also to measure students' attitudes towards campus sustainability. The (one-way) analysis of variance is then used to investigate whether

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there is any difference (statistically) among the means of students' attitudes at these three universities. The result shows that there is a statistically significant difference in these universities. Analysis and discussion are also provided to identify the reasons behind the result. © The Author(s), under exclusive licence to Springer Nature B.V. 2024.

#### Author keywords

Campus sustainability; Higher education; Students' attitudes; Sweden; University

Indexed keywords 

Sustainable Development Goals  





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#### References (62)

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All

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Create bibliography

- 1 Abubakar, I.R., Al-Shihri, F.S., Ahmed, S.M.  
**Students' assessment of campus sustainability at the University of Dammam, Saudi Arabia**

(2016) *Sustainability (Switzerland)*, 8 (1). Cited 75 times.

<http://www.mdpi.com/2071-1050/8/1/59/pdf>

doi: 10.3390/su8010059

 [View at Publisher](#)

- 2 Ajzen, I.  
**The theory of planned behavior**

(1991) *Organizational Behavior and Human Decision Processes*, 50 (2), pp. 179-211. Cited 55636 times.

doi: 10.1016/0749-5978(91)90020-T

 [View at Publisher](#)

- 3 Alshuwaikhat, H.M., Abubakar, I.  
**An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices (Open Access)**

(2008) *Journal of Cleaner Production*, 16 (16), pp. 1777-1785. Cited 626 times.

doi: 10.1016/j.jclepro.2007.12.002

 [View at Publisher](#)






- 4 Arushanyan, Y., Ekener, E., Moberg, Å.  
**Sustainability assessment framework for scenarios – SAFS**

(2017) *Environmental Impact Assessment Review*, 63, pp. 23-34. Cited 52 times.

[www.elsevier.com/inca/publications/store/5/0/5/7/1/8](http://www.elsevier.com/inca/publications/store/5/0/5/7/1/8)

doi: 10.1016/j.eiar.2016.11.001

 [View at Publisher](#)

- 
- 5 Barnes, P., Jerman, P.  
Developing an environmental management system for a multiple-university consortium  
  
(2002) *Journal of Cleaner Production*, 10 (1), pp. 33-39. Cited 44 times.  
doi: 10.1016/S0959-6526(01)00020-8  
  
 View at Publisher
- 
- 6 Boyer, R.H.W., Peterson, N.D., Arora, P., Caldwell, K.  
Five approaches to social sustainability and an integrated way forward  
  
(2016) *Sustainability (Switzerland)*, 8 (9), art. no. 878. Cited 144 times.  
<http://www.mdpi.com/2071-1050/8/9/878/pdf>  
doi: 10.3390/su8090878  
  
 View at Publisher
- 
- 7 Brundtland, G.H.  
(1987) *Our Common Future (Report of the World Commission on Environment and Development)*. Cited 30034 times.  
The United Nations
- 
- 8 Ceulemans, K., Molderez, I., Van Liedekerke, L.  
Sustainability reporting in higher education: A comprehensive review of the recent literature and paths for further research  
  
(2015) *Journal of Cleaner Production*, 106, pp. 127-143. Cited 239 times.  
doi: 10.1016/j.jclepro.2014.09.052  
  
 View at Publisher
- 
- 9 Christensen, P., Thrane, M., Herreborg Jørgensen, T., Lehmann, M.  
Sustainable development: Assessing the gap between preaching and practice at Aalborg University  
  
(2009) *International Journal of Sustainability in Higher Education*, 10 (1), pp. 4-20. Cited 49 times.  
doi: 10.1108/14676370910925217  
  
 View at Publisher
- 
- 10 Cortese, A.D.  
The critical role of higher education in creating a sustainable future  
(2003) *Planning for Higher Education*, 31, pp. 15-22. Cited 752 times.
- 
- 11 Coy, A.E., Farrell, A.K., Gilson, K.P., Davis, J.L., Le, B.  
Commitment to the environment and student support for "green" campus initiatives  
  
(2013) *Journal of Environmental Studies and Sciences*, 3 (1), pp. 49-55. Cited 30 times.  
<http://www.springer.com/environment/journal/13412>  
doi: 10.1007/s13412-012-0100-1  
  
 View at Publisher
-

- 12 Cronbach, L.J.  
Coefficient alpha and the internal structure of tests

(1951) *Psychometrika*, 16 (3), pp. 297-334. Cited 28226 times.  
doi: 10.1007/BF02310555

 View at Publisher

---

- 13 Dagiliūtė, R., Liobikienė, G., Minelgaitė, A.  
Sustainability at universities: Students' perceptions from  
Green and Non-Green universities

(2018) *Journal of Cleaner Production*, 181, pp. 473-482. Cited 151 times.  
doi: 10.1016/j.jclepro.2018.01.213

 View at Publisher

---

- 14 De Castro, R., Jabbour, C.J.C.  
Evaluating sustainability of an Indian university

(2013) *Journal of Cleaner Production*, 61, pp. 54-58. Cited 51 times.  
doi: 10.1016/j.jclepro.2013.02.033

 View at Publisher

---

- 15 Delakowitz, B., Hoffmann, A.  
The Hochschule Zittau/Görlitz: Germany's first registered  
environmental management (EMAS) at an institution of  
higher education

(2000) *International Journal of Sustainability in Higher Education*, 1 (1), pp. 35-  
47. Cited 35 times.  
doi: 10.1108/1467630010307084

 View at Publisher

---

- 16 Emanuel, R., Adams, J.N.  
College students' perceptions of campus sustainability

(2011) *International Journal of Sustainability in Higher Education*, 12 (1), pp. 79-  
92. Cited 176 times.  
doi: 10.1108/14676371111098320

 View at Publisher

---






- 17 Figueredo, F.R., Tsarenko, Y.  
Is “being green” a determinant of participation in university  
sustainability initiatives?






(2013) *International Journal of Sustainability in Higher Education*, 14 (3), pp. 242-  
253. Cited 49 times.  
doi: 10.1108/IJSHE-02-2011-0017






 View at Publisher






---

- 18 Filho, W.L.  
(2010) *Sustainability at universities: Opportunities*. Cited 61 times.  
Peter Lang
-






- 19 Fischer, D., Jenssen, S., Tappeser, V.  
Getting an empirical hold of the sustainable university: a comparative analysis of evaluation frameworks across 12 contemporary sustainability assessment tools  
(2015) *Assessment and Evaluation in Higher Education*, 40 (6), pp. 785-800. Cited 81 times.  
<http://www.tandfonline.com/toc/caeh20/current>  
doi: 10.1080/02602938.2015.1043234  
 View at Publisher
- 
- 20 Brian Fisher, P., McAdams, E.  
Gaps in sustainability education: The impact of higher education coursework on perceptions of sustainability  
(2015) *International Journal of Sustainability in Higher Education*, 16 (4), pp. 407-423. Cited 80 times.  
<http://www.emeraldinsight.com/info/journals/ijshe/ijshe.jsp>  
doi: 10.1108/IJSHE-08-2013-0106  
 View at Publisher
- 
- 21 Fisher, R.M.  
Applying ISO 14001 as a business tool for campus sustainability: A case study from New Zealand  
(2003) *International Journal of Sustainability in Higher Education*, 4 (2), pp. 138-150. Cited 37 times.  
doi: 10.1108/14676370310467159  
 View at Publisher
- 
- 22 Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E.  
Multivariate data analysis (7th edn.)  
(2014) *Pearson*. Cited 2160 times.
- 
- 23 Hall, J., Vredenburg, H.  
The challenges of innovating for sustainable development  
(2004) *MIT Sloan Management Review*, 45 (1), pp. 61-68. Cited 323 times.  

- 
- 24 Hopwood, B., Mellor, M., O'Brien, G.  
Sustainable development: Mapping different approaches  
(2005) *Sustainable Development*, 13 (1), pp. 38-52. Cited 1373 times.  
doi: 10.1002/sd.244  
 View at Publisher
-




- 25 Iaquinto, B.L.  
“I recycle, I turn out the lights”: understanding the everyday sustainability practices of backpackers  
  
(2015) *Journal of Sustainable Tourism*, 23 (4), pp. 577-599. Cited 50 times.  
<http://www.tandfonline.com/toc/rsus20/current>  
doi: 10.1080/09669582.2014.978788  
  
 View at Publisher
- 
- 26 Kell, G.  
The global compact: Origins, operations, progress, challenge  
(2003) *Journal of Corporate Citizenship*, 11, pp. 35-49. Cited 71 times.
- 
- 27 Korn, D., Huang, R., Beavers, D., Bolioli, T., Walker, M.  
Power management of computers - \$ 1.5 billion in potential energy savings annually  
  
(2004) *IEEE International Symposium on Electronics and the Environment*, pp. 128-131. Cited 11 times.  
  
 View at Publisher
- 
- 28 Lehtonen, M.  
The environmental-social interface of sustainable development: Capabilities, social capital, institutions  
  
(2004) *Ecological Economics*, 49 (2), pp. 199-214. Cited 480 times.  
doi: 10.1016/j.ecolecon.2004.03.019  
  
 View at Publisher
- 
- 29 Leonidou, L.C., Leonidou, C.N., Kvasova, O.  
Antecedents and outcomes of consumer environmentally friendly attitudes and behaviour  
  
(2010) *Journal of Marketing Management*, 26 (13-14), pp. 1319-1344. Cited 252 times.  
doi: 10.1080/0267257X.2010.523710  
  
 View at Publisher
- 
- 30 Lozano, R.  
A tool for a Graphical Assessment of Sustainability in Universities (GASU)  
  
(2006) *Journal of Cleaner Production*, 14 (9-11), pp. 963-972. Cited 271 times.  
doi: 10.1016/j.jclepro.2005.11.041  
  
 View at Publisher
-





- 31 Lozano, R., Ceulemans, K., Alonso-Almeida, M., Huisingh, D., Lozano, F.J., Waas, T., Lambrechts, W., (...), Hugé, J.  
A review of commitment and implementation of sustainable development in higher education: Results from a worldwide survey ([Open Access](#))  
(2015) *Journal of Cleaner Production*, Part A 108, pp. 1-18. Cited 566 times.  
doi: 10.1016/j.jclepro.2014.09.048  
 View at Publisher
- 
- 32 Lozano, R., Lukman, R., Lozano, F.J., Huisingh, D., Lambrechts, W.  
Declarations for sustainability in higher education: Becoming better leaders, through addressing the university system  
(2013) *Journal of Cleaner Production*, 48, pp. 10-19. Cited 692 times.  
doi: 10.1016/j.jclepro.2011.10.006  
 View at Publisher
- 
- 33 Lundgren-Kownacki, K., Hornyanszky, E.D., Chu, T.A., Olsson, J.A., Becker, P.  
Challenges of using air conditioning in an increasingly hot climate  
(2018) *International Journal of Biometeorology*, 62 (3), pp. 401-412. Cited 68 times.  
<http://www.link.springer.de/link/service/journals/00484/index.htm>  
doi: 10.1007/s00484-017-1493-z  
 View at Publisher
- 
- 34 Nejati, M., Nejati, M.  
Assessment of sustainable university factors from the perspective of university students  
(2013) *Journal of Cleaner Production*, 48, pp. 101-107. Cited 135 times.  
doi: 10.1016/j.jclepro.2012.09.006  
 View at Publisher
- 
- 35 Nejati, M., Shahbudin, B.M., A. S, & BinAmran  
Sustainable development: A competitive advantage or a threat?  
(2010) *Business Strategy Series*, 11, pp. 84-89. Cited 19 times.
- 
- 36 Newport, D., Chesnes, T., Lindner, A.  
The “environmental sustainability” problem: Ensuring that sustainability stands on three legs ([Open Access](#))  
(2003) *International Journal of Sustainability in Higher Education*, 4 (4), pp. 357-363. Cited 53 times.  
doi: 10.1108/14676370310497570  
 View at Publisher
- 
- 37 Nunnally, J.C., Bernstein, I.H.  
(1994) *Psychometric Theory*. Cited 74997 times.  
3d, McGraw-Hill

- 38 Owens, K.A., Halfacre-Hitchcock, A.  
As green as we think? The case of the College of Charleston green building initiative ([Open Access](#))  
  
(2006) *International Journal of Sustainability in Higher Education*, 7 (2), pp. 114-128. Cited 39 times.  
doi: 10.1108/14676370610655904  
  
 View at Publisher
- 
- 39 Pramono, S.N.W., Ulkhaq, M.M., Trianto, R., Setiowati, P.R., Rasyida, D.R., Setyorini, N.A., Jauhari, W.A.  
Integrating the analytic hierarchy process and importance-performance analysis into ISO 14001 framework for assessing campus sustainability  
  
(2017) *AIP Conference Proceedings*, 1902, art. no. 020035. Cited 16 times.  
<http://scitation.aip.org/content/aip/proceeding/aipcp>  
ISBN: 978-073541590-4  
doi: 10.1063/1.5010652  
  
 View at Publisher
- 
- 40 Purvis, B., Mao, Y., Robinson, D.  
Three pillars of sustainability: in search of conceptual origins  
  
(2019) *Sustainability Science*, 14 (3), pp. 681-695. Cited 1524 times.  
<http://www.springer.com/east/home?SGWID=5-102-70-144940151-0&changeHeader=true&SHORTCUT=www.springer.com/journal/11625>  
doi: 10.1007/s11625-018-0627-5  
  
 View at Publisher
- 
- 41 Ramos, T.B., Cecílio, T., Joanaz de Melo, J.  
Environmental Impact Assessment in higher education and training in Portugal  
  
(2008) *Journal of Cleaner Production*, 16 (5), pp. 639-645. Cited 23 times.  
doi: 10.1016/j.jclepro.2007.02.008  
  
 View at Publisher
- 
- 42 Savely, S.M., Carson, A.I., Delclos, G.L.  
A survey of the implementation status of environmental management systems in U.S. colleges and universities  
  
(2007) *Journal of Cleaner Production*, 15 (7), pp. 650-659. Cited 21 times.  
doi: 10.1016/j.jclepro.2006.01.014  
  
 View at Publisher
- 
- 43 Setyorini, N.A., Ulkhaq, M.M., Rasyida, D.R., Setiowati, P.R., Trianto, R.  
Assessing campus sustainability: An ISO 14001 approach  
(2016) *International Journal of Advances in Agricultural & Environmental Engineering*, 3, pp. 245-248. Cited 3 times.



- 44 Sulzer, George  
EMAS - environmental management in the European Union  
*(1999) Annual Quality Congress Transactions*, pp. 150-157. Cited 2 times.  
 View at Publisher
- 
- 45 Talebi, M., Way, T.  
Methods, metrics and motivation for a green computer science program  
*(2009) SIGCSE'09 - Proceedings of the 40th ACM Technical Symposium on Computer Science Education*, pp. 362-366. Cited 25 times.  
ISBN: 978-160558504-8  
doi: 10.1145/1508865.1508995  
 View at Publisher
- 
- 46 Tanguay, G.A., Rajaonson, J., Lefebvre, J.-F., Lanoie, P.  
Measuring the sustainability of cities: An analysis of the use of local indicators  
*(2010) Ecological Indicators*, 10 (2), pp. 407-418. Cited 412 times.  
doi: 10.1016/j.ecolind.2009.07.013  
 View at Publisher
- 
- 47 Uhl, C., Anderson, A.  
Green destiny: Universities leading the way to a sustainable future ([Open Access](#))  
*(2001) BioScience*, 51 (1), pp. 36-42. Cited 41 times.  
<http://bioscience.oxfordjournals.org/>  
doi: 10.1641/0006-3568(2001)051[0036:GDULTW]2.0.CO;2  
 View at Publisher
- 
- 48 Ulkhaq, M.M., George Joseph, R.S., Javed, B., Nadekar, N.R.  
Campus sustainability practice assessment: An empirical finding from Jönköping University, Sweden  
*(2019) IOP Conference Series: Materials Science and Engineering*, 598.  
& (, a),,,, , https://
- 
- 49 Ulkhaq, M.M., Prakoso, M.F.A., Sari, V.K., Maduma, L., Hazazi, M.H.  
Assessing students' perceptions to sustainability: A comparison between two universities  
*(2019) ACM International Conference Proceeding Series*, pp. 25-29. Cited 3 times.  
<http://portal.acm.org/>  
ISBN: 978-145037200-8  
doi: 10.1145/3337682.3337683  
 View at Publisher
-

- 
- 50 Ulkhaq, M.M., Prayogo, P.I., Firmansyah, M., Agustina, D.  
Assessing campus sustainability: A report from Diponegoro University,  
Indonesia  
(2016) *International Journal of Information and Education Technology*, 6, pp. 616-621. Cited 12 times.
- 
- 51 Ulkhaq, M.M., Wijayanti, W.R., Wiganingrum, R., Dewi, W.R., Ardi, F.  
Assessing university's sustainability programs from the  
perspective of university students: A gap analysis  
  
(2018) *MATEC Web of Conferences*, 154, art. no. 01073. Cited 4 times.  
<http://www.matec-conferences.org/>  
doi: 10.1051/mateconf/201815401073  
  
 View at Publisher
- 
- 52 Urbanski, M., Filho, W.L.  
Measuring sustainability at universities by means of the  
Sustainability Tracking, Assessment and Rating System  
(STARS): early findings from STARS data  
  
(2015) *Environment, Development and Sustainability*, 17 (2), pp. 209-220. Cited  
56 times.  
[www.wkap.nl/journalhome.htm/1387-585X](http://www.wkap.nl/journalhome.htm/1387-585X)  
doi: 10.1007/s10668-014-9564-3  
  
 View at Publisher
- 
- 53 Velazquez, L., Munguia, N., Platt, A., Taddei, J.  
Sustainable university: what can be the matter? (Open Access)  
  
(2006) *Journal of Cleaner Production*, 14 (9-11), pp. 810-819. Cited 506 times.  
doi: 10.1016/j.jclepro.2005.12.008  
  
 View at Publisher
- 
- 54 Viluksela, P.  
(2008) *Environmental Sustainability in the Finnish Printing and Publishing  
Industry*. Cited 6 times.  
Master's Thesis
- 
- 55 Willis, R., Stewart, R.A., Talebpour, M.R., Mousavinejad, A., Jones, S., Giurco,  
D.  
October 26–29). Revealing the impact of socio-demographic factors and  
efficient devices on end use water consumption: Case of Gold Coast Australia.  
[Paper presentation]  
(2009) *5Th International Water Association Efficient*  
Cairns, Australia
-

- 56 Wright, T.S.A.  
Definitions and frameworks for environmental sustainability in higher education ([Open Access](#))  
  
(2002) *Higher Education Policy*, 15 (2), pp. 105-120. Cited 181 times.  
doi: 10.1016/S0952-8733(02)00002-8  
 View at Publisher
- 
- 57 Wright, T.  
University presidents' conceptualizations of sustainability in higher education  
  
(2010) *International Journal of Sustainability in Higher Education*, 11 (1), pp. 61-73. Cited 155 times.  
doi: 10.1108/14676371011010057  
 View at Publisher
- 
- 58 Yarime, M., Tanaka, Y.  
The issues and methodologies in sustainability assessment tools for higher education institutions: A review of recent trends and future challenges  
(2012) *Journal of Education for Sustainable Development*, 6, pp. 63-77. Cited 136 times.
- 
- 59 Yuan, X., Zuo, J., Huisingsh, D.  
Green Universities in China - What matters?  
  
(2013) *Journal of Cleaner Production*, 61, pp. 36-45. Cited 122 times.  
doi: 10.1016/j.jclepro.2012.12.030  
 View at Publisher
- 
- 60 Zeegers, Y., Clark, I.F.  
Students' perceptions of education for sustainable development ([Open Access](#))  
  
(2014) *International Journal of Sustainability in Higher Education*, 15 (2), pp. 242-253. Cited 82 times.  
doi: 10.1108/IJSHE-09-2012-0079  
 View at Publisher
- 
- 61 Zijp, M.C., Heijungs, R., van der Voet, E., van de Meent, D., Huijbregts, M.A.J., Hollander, A., Posthuma, L.  
An identification key for selecting methods for sustainability assessments ([Open Access](#))  
  
(2015) *Sustainability (Switzerland)*, 7 (3), pp. 2490-2512. Cited 55 times.  
<http://www.mdpi.com/2071-1050/7/3/2490/pdf>  
doi: 10.3390/su7032490  
 View at Publisher
-

□ 62 Zwickle, A., Koontz, T.M., Slagle, K.M., Bruskotter, J.T.

Assessing sustainability knowledge of a student population:  
Developing a tool to measure knowledge in the  
environmental, Economic and social domains

(2014) *International Journal of Sustainability in Higher Education*, 15 (4), pp. 375-389. Cited 71 times.

<http://www.emeraldinsight.com/info/journals/ijshs/ijshs.jsp>

doi: 10.1108/IJSHE-01-2013-0008

 View at Publisher

---

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