



Full length article

Impact of communication sources for achieving campus sustainability

Amy A. Kim^{a,*}, Hessam Sadatsafavi^b, Lysandra Medal^a, Marilyn J. Ostergren^c^a Department of Civil and Environmental Engineering, University of Washington, Seattle, WA 98195, United States^b Cornell Institute for Healthy Futures, Department of Design and Environmental Analysis, Cornell University, Ithaca, NY 14853, United States^c Renewable Energy Liaison, UW Environmental Stewardship Committee, University of Washington, Seattle, WA 98195, United States

ARTICLE INFO

Keywords:

Campus sustainability
Sustainability communication
Communication sources
Occupant awareness
Behavioral changes
Effective communication

ABSTRACT

Using self-reported data from over 12,000 students, staff, and faculty members, this study aims to quantify the effectiveness of various sustainability information sources on the awareness and behavioral changes of participants. Exploratory factor analysis of 12 communication sources resulted in three clusters: news sources, blogs and social media sources, and local sources of information. All three clusters had positive impacts on the sustainability awareness of students, staff, and faculty members. Of the three clusters, local sources were the least effective strategy for enhancing sustainability awareness in all groups. Overall, for undergraduate students, blogs and social media sources were most effective, and for graduate or professional students and staff, news sources were most effective. While sustainability awareness increased from 2012 to 2014, the total effects on actions were small for all groups. The lack of impact on behavioral changes can be explained by the high initial level of action taken by participants, regardless of their low level of awareness about campus-specific sustainability initiatives. Recommendations for further behavioral changes include combining multiple communication sources and channels, providing engagement opportunities, increasing access to information, and using participatory methods to encourage further peer-to-peer support networks.

1. Introduction

Achieving campus sustainability is a multifaceted and challenging endeavor. Many aspects of campus operation have sustainability implications, including building construction, building operation and maintenance, grounds maintenance, food service, purchasing, and travel for business and commuting (Wright, 2002). The campus environment is unique in that it can influence the behaviors of people through education, demonstration, and research (Krasny and Delia, 2015; Filho and Brandli, 2016). This complex environment provides an ideal context for continuous environmental learning and practice (König, 2013; Krasny and Delia, 2015; Norazah and Norbayah, 2016).

Despite the important role that higher education has in the development of sustainability practices, studies find that universities still face challenges in transforming sustainability awareness into sustained action. Owens and Halfacre-Hitchcock (2006) showed that engagement with sustainability-related projects by faculty and students did not yield any behavioral changes in the individual-level assessment. Roorda (2004) found a possible explanation: poor communication between management and staff and between the university and students. De Vreede et al. (2014) recommend supplementing education with other support systems, such as including peer-to-peer support, demonstrating

real contribution, providing opportunities for leadership roles, and encouraging youth ownership to foster measurable change.

In essence, measures being pursued on campuses have a behavioral component (e.g., following policies for paper purchasing, properly composting and recycling, choosing food that has been identified as more sustainable, choosing a lower-impact commute option, and accepting and supporting measures that may cost more), requiring temporary changes in access or asking people to change their habits to be successful. Additionally, studies have found that if campuses are to benefit from user engagement, effective communication is vital to improve sustainability outcomes (Sharp, 2002; Roorda, 2004; Franz-Balsen and Heinrichs, 2007).

Supporters of sustainable development and environmentalists acknowledge the importance of effective communication in making scientific findings more meaningful and impactful for a general audience (UNESCO, 1997). The literature indicates pressing needs for strategies to communicate sustainability in various contexts, such as in business (Rettie et al., 2012; Siano et al. 2016) and academic communities (Mazo and Macpherson, 2017). The eventual goal of communication is to change behavior through shared understanding.

While there are studies on effective health communications (Zolnierok and DiMatteo, 2009) and environmental risk communication

* Corresponding author.

E-mail addresses: amyakim@uw.edu (A.A. Kim), hs825@cornell.edu (H. Sadatsafavi), medal@uw.edu (L. Medal), ostergren@uw.edu (M.J. Ostergren).

(Newig and Fritsch, 2009), the university audience is quite different from the general public. Universities are distinctively characterized by three different population groups: students, staff, and faculty members. Generally, the student population rotates through the university more quickly than permanent staff and faculty groups. Franz-Balsen and Heinrichs (2007) discuss that the human factor is a critical component of sustainability on campus and that further studies investigating the higher-education-specific target audience and messaging would be valuable. Norazah and Norbayah (2016) had similar findings and found that campaign messages should be conveyed differently for different target populations. In studying staff members at higher-education institutions, Djordjevic and Cotton (2011) found that the difficulties of communicating about sustainability included lack of common definition, lack of a shared understanding of sustainability, and individual differences in values and attitudes.

While many studies acknowledged the significant role of communication to encourage pro-environmental behavior, recent studies still indicate the lack of strategic communication use. In their experimental study, Godfrey and Feng (2017) found that the sustainability campaign led to a slight decrease in attitude toward pro-environmental actions being promoted, suggesting a disconnection between the scientific concepts in the environmental campaign and subjective ideas about sustainability. For example, an empirical study by Mazo and Macpherson (2017) suggests that universities are still failing to communicate their sustainability actions effectively, even if they incorporate environmentalism into their institutional identity statements or implement such sustainability initiatives.

In summary, the authors are not aware of many studies that address the impact of specific sustainability information sources on awareness and on the intended behavioral actions, and that use repeated measures in a campus setting. The effectiveness of various university-initiated communication efforts and the university-specific opportunities for these groups to implement change in response has not been fully investigated.

1.1. Defining terms and objectives

The terms *communication source*, *mode*, *media*, and *channels* are sometimes used interchangeably in the literature (Lee et al., 2002; DöUrso and Rains, 2008). The term *communication source* often refers to who or what the source of a piece of information is (Sundar and Nass, 2001). Sundar and Nass (2001) reported four different types of communication sources used in the online news environment: news editors, computers, other users, and the user himself or herself. Lee et al. (2002) described financial institutions, government/consumer agencies, and interpersonal (e.g., family and friends) as three different sources or channels of communication for electronic banking. Sundar and Nass (2001) further discussed three different conceptions of source:

- Concept 1: source as the visible gatekeeper-presenter of content,
- Concept 2: source as the media technology that delivers the content, and
- Concept 3: source as the receiver or audience choosing content for consumption.

In this paper, *communication source* refers to the second concept, where it represents the media technology that delivers the content. This concept proposes that the “medium or channel, not the sender, is the key that dictate the nature of content delivered through them” and “individuals respond to computers as a source in much the same way they respond to other human beings as sources” so that “the real source of messages is the technology qua medium itself.”

The objective of this study was to quantify the effectiveness of various communication sources on the awareness of students, staff, and faculty members about campus-wide sustainability initiatives and their behaviors using longitudinal data from the University of Washington

(UW). To address this important gap in the literature, this study investigated the following research questions:

- How do different information sources cluster together, or correlate with another, to better explain learning about sustainability?
- How do groups (students versus staff versus faculty members) differ in learning from one type of cluster or another?
- What is the relationship between awareness and intended behavioral action over time?

1.2. Literature review and theoretical background

Developing effective communication strategies requires better understanding of communication sources, the institutional context, and the target audience to encourage desired behavior. In studying the various communication strategies to develop an effective campus sustainability campaign, the authors conducted a literature review that focused on three aspects and research questions: sources of communication (i.e., selecting and evaluating appropriate communication channels), content framing (i.e., understanding the target audience and controlling the message), and the link between sustainability awareness and behavioral action (i.e., measuring effective communication strategies).

1.2.1. Sources of communication

1.2.1.1. One-way and two-way communication. Various communication media can be grouped into one-way or two-way communication (Djordjevic and Cotton, 2011). One-way communication does not allow the direct involvement of the target audiences, and channels include blogs, newspapers, radio, television, websites, flyers, and research publications. Two-way communication allows direct involvement of the target audience where persuasion may occur, and channels include conference calls, emails, special events, exhibitions, classes, seminars, roundtable meetings, informal networking, and social media.

There are advantages and disadvantages to both types of communication strategies. One-way communication offers an essential strategy with the purpose of disseminating information as objectively as possible (Morsing and Schultz, 2006). Information and news can be shared through a variety of media such as brochures, pamphlets, and magazines to inform the public. For example, a study by Mazo and Macpherson (2017) emphasized that printed materials on campus have a significant impact in sending clear and constant messages. Printed posters on campus are a core strategy for communicating sustainable initiatives to university stakeholders (Mazo and Macpherson, 2017). However, one-way communication is ineffective in fostering sustained behavioral engagement across a wide variety of study populations, from staff and students in higher education to general citizens (Ockwell et al., 2009; Corner and Randall, 2011; Wolf and Moser, 2011). One-way communication is prone to misunderstanding of the intended message, which results in different views and interpretations and consequently tends to be insufficient in producing sustained behavioral engagement and expected actions. Therefore, it is critical that the communication media provide clear and efficient information about shared concerns, good intentions, and favorable decisions and actions to build and maintain positive stakeholder support (Morsing and Schultz, 2006).

While one-way communication strategies are necessary for reaching broad audiences, recent studies have indicated that effective communication strategies require personal and face-to-face communication (Sharp, 2002; Barlett and Chase, 2004). Two-way communication can be explained by the theory of sense making, where two-way communication builds on ongoing iterative processes of not only sense making but also sense giving (Morsing and Schultz, 2006). Two-way communication channels, such as social media, can be successful in sharing information by identifying the channels that each university

Download English Version:

<https://daneshyari.com/en/article/11005419>

Download Persian Version:

<https://daneshyari.com/article/11005419>

[Daneshyari.com](https://daneshyari.com)