The State of Environmental Communication: A Survey of PRSA Members

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Using data collected in a national survey of the professional group Public Relations Society of America (PRSA), this study examines the way that organizations are communicating about the environment. This baseline study reports on the most common environmental topics that corporations and government entities communicate about, the most common channels of communication used to deliver messages about the environment, the publics most often targeted with environmental messages, the level of transparency in organizations' environmental communication, and the level of environmental knowledge and attitude among public relations practitioners. The findings suggest a broad range of topics and channels are being used for environmental communication. A strong link emerged between public relations practitioners' environmental knowledge, environmental attitudes, and the volume of communication being disseminated from their organizations. Too, as predicted by the study, organizations that were more environmentally transparent tended to engage in more environmental communication. Implications of the findings are discussed.

Communication about environmental behaviors and policies continues to be a critical area of focus for corporations. The April 2010 oil spill in the US Gulf coast and the massive public relations effort by British Petroleum (BP) Oil to respond to it, once again illustrate the importance of consistent and transparent environmental communication (Elmets, 2010; Myers, 2010). Earning a reputation as an environmentally responsible organization can bolster an organization's legitimacy and create goodwill that can help an organization survive a major crisis. Organizations that have sound policies and practices toward the environment and communicate about them in a credible way earn environmental legitimacy (Hunter & Bansal, 2007). This means engaging in transparent communication about environmental dealings in order to earn the respect of key audiences.

The study presented here takes the first step toward understanding how organizations communicate about their environmental policies and practices and how public relations practitioners perceive the environmental transparency of their organizations. Very little research has focused on the content of environmental communication, the ways organizations are delivering their environmental messages, and no research has examined the role of public relations practitioners in this practice. What is needed is a broad baseline understanding of environmental communication, including content and delivery of communication and the characteristics of the communicators. This study

examines environmental communication through a survey of public relations practitioners who have their fingers on the pulse of organizations' communication. It asks practitioners to report on their organization's amount, topics, channels of communication, level of transparency in communication, and audiences for the communication. In addition, the study explores characteristics of communicators and examines whether they are related to the attributes of environmental communication. Results provide insight into the kinds of topics and channels organizations are using to communicate about environmental topics. Potential problems with current practices are identified, and suggestions for future communication development are offered.

LITERATURE REVIEW

Organizations' actions toward the environment have consequences for many areas of business including sales (Sass, 2008) and reputation (Livesey & Kearins, 2002). Organizations that are perceived as more environmentally responsible are less likely to experience negative consequences from key stakeholders such as activists, governmental agencies and the media (Bansal & Clelland, 2004). Environmental communication is critical to organizations because it can influence the behaviors of publics (Signitzer & Prexl, 2008; Davis, 1995) and build the level of admiration and legitimacy of an organization (Bortree, 2009).

The amount of environmental communication in the media has increased rapidly over the past four decades (Cox, 2010; Adler, 1995). Research suggests that information subsidies (Griffin & Dunwoody, 1995) and message framing from organizations (Davis, 1995; Reber & Berger, 2005) play a key role in the quantity and nature of coverage of environmental issues. Studies have found that communication about corporate environmental initiatives has many benefits for the organization, including greater legitimacy and admiration of the organization (Bortree, 2009; Sethi, 1979). Perceived environmental responsibility of an organization affects consumers' interests in purchasing its products (David et al, 2005), loyalty to the organization, and even greater interest in employment with the organization (Behrend, Baker & Thompson, 2009). As organizations disclose more information about their environmental initiatives, they can garner more respect from their audiences, leading to a stronger relationship (Villiersa & Staden, 2006; Bortree, 2009). The focus of an organizations' dialogue about environmental and sustainability issues not only impacts perception of the organization, but it also creates a public space for engagement on environmental issues (Sigtnitzer & Prexl, 2008), and this too is a way for organizations to make a contribution to society though their environmental communication.

The term environmental communication covers a broad area of public and private dialogue on environmental issues (Cox, 2010); however, the study presented here focuses on communication of environmental responsibility by corporations and government entities, as these organizations are experiencing increased pressure to demonstrate their responsibility toward the environment (UNEP & KPMG, 2010; Department of Environment, 2009) . Organizations have begun to adopt strategies for communicating about key issues including: lowering greenhouse gas emissions,

reduction of fuel consumption, recycling, reducing product packaging, reducing waste, conserving water, improving energy efficiency, and offsetting energy usage. The more thoroughly an organization is able to address and discuss its performance in these areas, the more likely it will be effective in persuading audiences that it is working to address its environmental impacts (Bansal & Clelland, 2004; Hunter & Bansal, 2007; Bortree, 2009).

To explore the degree to which organizations are communicating about a variety of topics, the following research question is asked:
   RQ1: Which environmental topics are organizations communicating about most often?

The second goal of this study was to explore channels for environmental communication. Organizations use many channels to disseminate messages to key publics. Studies of corporate social responsibility have found that organizations commonly use websites (Ferguson & Popescu, 2007), corporate social responsibility reports (Golob & Bartlett, 2007) and advertising (Chan, 2000) to communicate environmental messages. However, internal documents are also probable channels for environmental messages. What is not known is the most common channels used to communicate about the environment.

The following research question is posed:
   RQ2: Which channels of communication are organizations using most to communicate about environmental issues?

The third goal of this study was to identify key target audiences of environmental communication. Environmental communication literature has explored the impact of framing environmental issues on consumers (Davis, 1995), but no research has explored the intended audiences of environmental communication. It is possible that organizations do not craft environmental communication primarily to encourage more purchases and/or use of their products and services. Signitzer and Prexl (2008), writing in the Journal of Public Relations Research, suggest that organizations first communicate with internal audiences "so that, slowly, employees get sensitized to the issue and a bottom-up process within the company is able to develop" (p. 8). The authors suggest, in addition, that employees may become key communicators about the organizations' environmental vision to the public.

To explore the audiences most often targeted with environmental communication, the following research question is asked:
   RQ3: Which publics are most commonly key audiences of environmental communication?

Transparency

Organizations that engage in more ethical communication are perceived more positively by key audiences (Freeman, 2006; Gower, 2006). However, research suggests that most organizations are not necessarily engaging transparently in their environmental dealings (Hunter & Bansal, 2007). One way organizations can improve their environmental reputation is through transparent communication about environmental initiatives, impacts, and products. According to Rawlins (2006; 2008) transparent communication consists of four dimensions: participation, substantial information, accountability, and lack of secrecy. *Participation* is the act of engaging with publics through dialogue and feedback loops; *substantial information* includes providing enough information for publics to make a judgment about an organization; *accountability* is defined as acting responsibly and answering for decisions made by the organization; and *lack of secrecy* is disclosing information and fostering an open atmosphere for communication. In employee-employer relationships, transparency leads to increased trust in the organization (Rawlins, 2008) which is an important measure in the organization-public relationship (Hon & Grunig, 1999).

To identify the level of environmental transparency among organizations in this study, the following question is asked.
> RQ4: To what degree are organizations communicating transparently about environmental issues?

Most likely, a more transparent organization would engage in more communication about the environment, though quantity should not be the sole measure for transparency; however, it would be one indicator of a commitment to engage with key publics about environmental topics.

To test the notion that more environmentally transparent organizations engage in more environmental communication the following hypothesis is offered.
> H1: There will be a strong positive relationship between an organization's level of environmental transparency and its level of environmental communication.

Practitioner knowledge

Organizations that include public relations professionals in their dominant coalition or C-suite benefit from the disciplines' knowledge of strategic communication, ethics, and crisis management. Prior research has found that a lack of knowledge and skill among practitioners can prevent communication managers from obtaining a coveted seat at the highest level of the organization structure (Moss, Warnaby, & Newman, 2000; Gregory, 2008). It found that to be invited into the dominant coalition, public relations professionals must be knowledgeable about business processes and issues of importance to the organization. CEOs have expressed a desire for high-level communication professionals to be prepared to function as key decision makers by being knowledgeable about business models and operating environments in which the

organizations function (Murray & White, 2005). One of these key areas of knowledge is environmental issues.

To assess public relations professionals' current level of knowledge about environmental issues and their sources of knowledge, the following research questions are posed.

RQ5: What is the level of knowledge about environmental issues among public relations practitioners?

RQ6: From what sources do public relations practitioners learn about environmental subjects?

To further explore whether public relations practitioners' knowledge is related to the amount of communication about environmental issues, the following hypothesis is proposed.

H2: Practitioners with more environmental knowledge will work for organizations that communicate more about environmental issues.

Practitioner attitude

Public relations practitioners act as advocates, attempting to guide management decisions to reflect the highest ethical standard of behaviors toward publics. Practitioners who have stronger convictions about the need for their organization to address environmental issues may be more likely to raise issues about environmental behaviors and communication leading to more organizational communication about environmental issues.

The theory of hierarchy of effects (Lavidge & Steiner, 1961; Palda, 1964; Barry, 1987), the theory of reasoned action, and the theory of planned behavior (Ajzen & Fishbein, 1980) note the role of attitude on behavior, but the impact of knowledge and attitude of professional communicators has not been studied. It is likely that a high level of knowledge about a subject and a positive attitude about it would lead to more communication and more enthusiastic communication about the subject.

To examine the degree to which participants feel positively about their organization addressing environmental issues, the following research question is asked.

RQ7: How strongly do public relations practitioners feel that their organization should make a priority of environmental issues?

To explore whether there is a relationship between practitioner attitude and environmental communication, the following hypothesis was developed.

H3: Practitioners with a more positive attitude about environmental issues will work for organizations that communicate more about environmental issues.

And, finally, to determine whether practitioner attitude is related to knowledge, the following hypothesis is proposed.

H4: Practitioners with more knowledge about environmental issues will have a more positive attitude about the issues.

METHOD

Data for this survey were collected through a national survey of the Public Relations Society of America (PRSA) members. A random list of 4000 members was generated from those who indicated employment with a for-profit organization or the government. In addition 83 members of the environmental section of PRSA were added to the sample. A pretest was conducted with 6 members of the organization. Only minor changes were made to wording of the questionnaire in response to the pretest. Of the 4083 emails sent to PRSA members, only 3573 had working email address, and 320 (n = 320) of those subjects completed the survey. This resulted in a 9% response rate.[1]

Variables measured in this study were environmental topic, amount of communication, communication channel, public type, transparency, practitioner knowledge, and practitioner attitude.

The environmental topics used in this study were collected through a content analysis of two constructed weeks of press releases issued through PR Newswire. The nine topics of environmental responsibility that emerged from the study were: lowering greenhouse gas emissions; reduction of fuel consumption; recycling; reducing product packaging; offering environmentally-responsible products or services; reducing waste; conserving water; improving energy efficiency; and offsetting energy usage. Participants in the current study were asked to assess the amount of communication that their organizations engaged in around these nine topics. Responses ranged from 1 (very little) to 9 (a lot). The reliability of this variable was assessed using Cronbach's alpha (α = .93), and was judged to be high. To create the variable "amount of environmental communication" a mean score of all environmental topics was created. This provided a score that reflected the overall amount of communication on these environmental topics.

The degree to which organizations use channels of communication to disseminate information about environmental issues was measured by asking practitioners to indicate on a nine-point scale how much their organizations use 11 channels for environmental communication. Channels included press releases, company website, company intranet, customer newsletter, employee newsletter, annual report, company blog, company wiki, company social networking presence (Facebook, MySpace), company Twitter site, and company podcast. An open-ended question was also asked to capture an additional channels used for environmental communication. Reliability of channel of communication was high (α = .91).

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[1]Participants were recruited in two waves – October 2008 and May 2009. The initial response rate in October was 6% which was judged by the author to be too low. October 2008 was a time of high turbulence on Wall Street, and it is possible that this interfered with participants' likelihood to read and respond to a survey request. In addition, the tracking software used in this study was not able to determine the number of emails captured by spam filters. With the increased sophistication of spam filters, larger numbers of emails are identified as spam and do not make it to the inboxes of the intended receivers (Evans & Mathur, 2005).

To evaluate the degree to which organizations target specific publics with their environmental communication, participants were asked to indicate the amount of communication on a 9-point scale to five publics: customers, employees, activists, shareholders, and government. Reliability for this variable was moderate (α = .78). Transparency of an organization's environmental communication was measured using a modified version of Rawlins (2008) transparency measures. Four measures were used, "My company wants to understand how its decisions about environmental issues affect key publics," "My company provides useful information about its environmental behaviors to key publics for making informed decisions," "My company wants to be accountable to key publics for organizational actions toward the environment," and "My company wants key publics to know what it is doing in regard to the environment and why it is doing it." Responses were given on a nine-point scale. The reliability of transparency measures was high (α = .93).

Practitioner knowledge was measured by asking participants to self-assess their knowledge of the nine environmental topics listed above. Reliability for this variable was judged to be good (α = .87). In addition to knowledge level, participants were also asked to indicate the sources from which they had learned about environmental issues. On a nine-point scale, respondents indicated the degree to which they had learned from websites; reading or watching the news; in-house training or seminars; external training or seminars; reading books on environmental issues; class at a college or university; talking with colleagues; and talking with family or friends. This was followed by an open-ended question which asked for any additional sources that participants felt were important in building their knowledge about the environment.

To measures attitude of practitioners toward environmental responsibility, participants were asked to indicate the priority that they felt their organization should give to the nine environmental characteristics, the same topics assessed under knowledge. Reliability for practitioner attitude measures was strong (α = .93).

Participants were asked to respond to a number of demographic and classification questions including employer industry, employer size (number of employees), individual job category, years of service to employer, years of employment in public relations, level of education, salary, gender and ethnicity.

RESULTS

The respondent group was 71% female and 29% male. Most (88%) of respondents said that they were Caucasian with another five percent indicating African-American, two percent Asian, three percent Hispanic/Latino, one percent Middle Eastern, and one percent Native American. The average number of years employed in public relations was 15.7 (SD = 10.0) with an average of 7.8 years (SD = 7.6) at the current employer. Ninety-seven percent of respondents had at least a bachelor's degree and 26% were APR certified. Sixty-eight percent of respondents were classified as manager, director, vice president, or chief financial officer. Approximately 30% were in jobs with titles

including specialist, associate, assistant or coordinator. Two percent did not indicate title. Sixty-one percent of respondents worked for a for-profit entity, and 33% worked for government, municipalities, or military. Six percent did not indicate their industry classification.

The study explored the characteristics of environmental communication and the knowledge and attitude of public relations practitioners regarding environmental issues. The first research question explored the most popular topics of environmental communication among corporations and governmental organizations. To answer research question one about communication of environmental topics, participants were asked about the amount of communication in which the organization engages about the nine environmental issues. Practitioners scored their organizations near the middle of the scale (M = 5.4, SD = 2.9). Organizations communicated the most about improving energy efficiency (M = 6.1, SD = 2.9), recycling (M = 6.0, SD = 2.7), and environmentally-responsible products and services (M = 6.0, SD = 2.9). They were least likely to communicate about reducing product packaging (M = 4.2, SD = 2.8). *See table 1.*

Table 1. Environmental topics addressed by organizations

Environmental characteristic	Communication on environmental topics	
	Mean	**Mean**
Energy efficient	6.1	2.9
Recycling	6.0	2.7
Products or services	6.0	2.9
Waste	5.8	2.7
Conserve water	5.1	3.0
Fuel consumption	5.1	3.0
Green house gasses	5.0	3.1
Offset usage	5.0	3.0
Packaging	4.2	2.8
Overall scores	5.4	2.9

The second research question asked about the channels of communication used to deliver information about environmental issues. To identify the channels most commonly used, the survey asked participants to rate the degree to which their organizations employ 11 channels of communication to deliver environmental messages. The most commonly used channels were intranet (M = 6.5, SD = 2.7), websites (M = 6.2, SD = 2.9), and employee newsletters (M = 6.2, SD = 2.9). Least used channels were Twitter (M = 1.8, SD = 2.1), wikis (M = 2.3, SD = 2.5), and podcasts (M = 2.5, SD = 2.6). *See table 2.*

Table 2. Channels of communication used to deliver environmental information

Channels of communication	Mean	SD
Intranet	6.4	2.6
Website	6.0	2.8
Employee newsletter	6.2	2.8
News releases	5.5	2.9
Annual report	5.5	3.0
Customer newsletter	5.3	2.9
Weblog	3.0	2.9
Social networking presence	2.8	2.8
Podcast	2.4	2.4
Wiki	2.2	2.4
Twitter	2.2	2.3
Overall scores	4.4	2.8

To capture other channels of communication being used by organizations for environmental messages, an open question was used. Participants were asked if their organization used other means to communicate about the environment. Results indicate that organizations are using many additional channels for communicating about their environmental responsibility. These channels included speeches and presentations, special events and meetings, presentations, videos, TV & radio interviews, printed material, sponsorships, advocacy, and sustainability programs.

The third research question asked about audiences of environmental communication. To identify the most common public groups targeted with environmental communication messages, participants were asked to rated the amount of environmental communication aimed at five public groups. Results suggest that employees are the most common target audience for environmental communication (M = 6.9, SD = 2.4), and shareholders are the least common target (M = 4.2, SD = 3.6). *See table 3.*

Table 3. Publics targeted with environmental messages

Publics	Mean	SD
Employees	6.9	2.4
Customers	6.9	2.4
Government	6.0	3.0
Activists	4.8	2.9
Shareholders	4.2	3.6

The fourth research question asked the degree to which organizations are communicating transparently about environmental issues. To answer this question, a mean score was calculated for the four measures of transparency used in this study (M = 6.6, SD = 2.3). The mean score fell above the mid-point indicating a positive assessment of organizations' environmental transparency.

Table 4. Degree to which organizations are communicating transparently

Dimensions of transparency	Mean	SD
Want publics to know	6.9	2.5
Decisions affect publics	6.7	2.4
Accountable to publics	6.4	2.7
Useful information	6.3	2.6

Hypothesis one predicted a positive relationship between environmental transparency and environmental communication. To test this, a Pearson's bi-variate correlation was run, and the results suggest that there is a strong positive relationship between transparency and communication ($r = .65$, $n = 297$, $p < .001$).

The fifth research question asked about public relations practitioners' level of knowledge about environmental issues. The mean scores of practitioners' self-assessed level of knowledge of the nine environmental topics are listed in table 5. Results indicated that practitioners rated their knowledge of environmental issues above the mid-point of a nine point scale ($M = 6.9$, $SD = 2.0$). They felt that they knew the most about recycling ($M = 7.7$, $SD = 1.5$), waste reduction ($M = 7.3$, $SD = 1.7$), and energy efficiency ($M = 7.3$, $SD = 1.7$) and the least about offsetting energy usage ($M = 6.0$, $SD = 2.3$) and green packaging ($M = 6.1$, $SD = 2.5$).

Table 5. Public relations practitioners' knowledge of environmental topics

Environmental characteristic	Practitioner Knowledge	
	Mean	**SD**
Recycling	7.7	1.5
Waste	7.3	1.7
Energy efficient	7.3	1.7
Conserve water	7.2	2.0
Fuel consumption	7.1	1.9
Products or services	7.0	2.0
Green house gasses	6.3	2.3
Packaging	6.1	2.5
Offset usage	6.1	2.3
Overall scores	6.9	2.0

The sixth research question asked about the source of practitioners' knowledge of environmental issues. Participants were asked to rate the sources from which they had learned about environmental issues. Results indicated that they felt that reading and watching the news ($M = 7.0$, $SD = 1.9$) was the most productive source along with websites ($M = 6.8$, $SD = 1.8$) and talking with colleagues ($M = 6.8$, $SD = 2.3$). The least likely to be used was classes at a college or university ($M = 3.0$, $SD = 3.0$). *See table 6.* To probe for other sources used by practitioners to educate themselves about these issues, the survey included an open-ended question asking for other sources. The most

common responses were blogs, social media sites, local nonprofit alliances, meetings, magazines, newsletters and other sources of employee communication.

Table 6. Public relations practitioners' sources for learning about environmental issues.

Sources of learning	Mean	SD
Reading or watching the news	7.0	1.9
Websites	6.8	1.8
Talking with colleagues	6.8	2.3
Talking with family or friends	5.6	2.4
Reading books on environmental issues	5.2	3.0
In-house training or seminars	4.2	3.0
External training or seminars	4.2	3.1
Classes at a college or university	3.0	3.0

The second hypothesis predicted a positive relationship between practitioner knowledge and amount of environmental communication at an organization. To test this, a Pearson's bi-variate correlation was run. Results suggest a positive significant relationship ($r = .38$, $n = 282$, $p < .001$) between the amount of knowledge a practitioner has about environmental issues and the amount of communication that person's organization conducts about environmental issues.

To answer the seventh research question, participants were asked to what degree they felt their organization should make a priority of the nine environmental topics. Their attitude toward environmental issues was much higher than their knowledge with respondents indicating that they felt their organization should make a priority of all nine environmental characteristics. The mean score for their overall attitude fell toward the high end of the scale ($M = 8.0$, $SD = 1.7$). They felt the most strongly about recycling ($M = 8.5$, $SD = 1.3$), waste reduction ($M = 8.4$, $SD = 1.3$), and improving energy efficiency ($M = 8.4$, $SD = 1.4$), and the least strongly about lowering greenhouse gas emissions ($M = 7.5$, $SD = 2.1$) and offsetting energy usage ($M = 7.5$, $SD = 2.2$). However, it should be noted that on a nine-point scale, the lowest score of 7.5 was well above the mid-point. *See table 7.*

Table 7. Public relations practitioners' attitudes toward environmental topics

Environmental characteristic	Practitioner Attitude	
	Mean	SD
Recycling	8.5	1.3
Waste	8.4	1.3
Energy efficient	8.4	1.4
Products or services	8.1	1.7
Conserve water	8.1	1.6
Fuel consumption	7.9	1.8
Packaging	7.8	1.8
Green house gasses	7.5	2.1
Offset usage	7.5	2.2
Overall scores	8.0	1.7

The third hypothesis predicted a positive relationship between practitioner attitude and the amount of environmental communication at an organization. A Pearson's correlation was run between the two variables, and a strong positive relationship ($r = .39$, $n = 292$, $p < .001$) emerged suggesting that the strength of a practitioner's attitude toward environmental issues is in some way related to the amount of environmental communication the practitioner's organization conducts.

The last hypothesis predicted a positive relationship between practitioner knowledge and attitude. Results of a Pearson's correlation suggest that this is the case ($r = .43$, $n = 282$, $p < .001$). A practitioner's level of knowledge about environmental issues and the person's attitude toward the issues is strongly related.

DISCUSSION

This study explored environmental communication of corporations and governmental organizations by surveying practitioners about their own knowledge and attitudes as well as their organizations' communications practices. It found a moderate amount of environmental communication and a wide variety of channels being used to communicate about those topics with the most popular being internal communication channels and the least popular being social media. Employees and customers are most often the target of environmental communication and activists and shareholders are much less often a target audience. Public relations practitioners in this study considered their organizations to be above average in their transparency on environmental issues, and they felt that they were above average in their knowledge of environmental issues. They have garnered most of this information through self-education, including websites, media consumption, and conversations with family and colleagues. Practitioners expressed a very strongly positive attitude toward environmental issues and felt that their organizations should be highly involved in ethical environmental practices. Correlations showed that practitioners' environmental knowledge and attitude are both

strongly related to the amount of communication an organization produces on environmental topics. Knowledge and attitude are also strongly correlated.

Corporations and governmental organizations are communicating about a wide variety of environmental issues, including energy efficiency, waste, recycling, and green products or services. These organizations are talking about the issues internally through the intranet and employee newsletters, and externally through websites, news releases, annual reports, and customer newsletters. This suggests that the most popular audiences for environmental messages would be employees, the media, shareholders, and customers. A subsequent question confirmed that employees and customers are very popular audiences for these messages, but shareholders are much less frequently targeted with environmental messages. This study did not ask about media as an audience, which was a weakness. Other channels of communication that were used but were rated substantially lower were weblogs, social media (Facebook, MySpace), podcasts, wikis, and Twitter/microblogging. This was surprising given that environmental advocacy groups have a strong presence in social media and are frequently engaging in dialogue with communities in this space. Organizations may want to reconsider their social media strategies and weigh the value of communicating about the environmental initiatives through these channels.

The practitioners in this study rated their organizations' environmental transparency as above average, with the highest rated claim being "My company wants key publics to know what it is doing in regard to the environment and why it is doing it." Clearly the organizations that were more committed to transparency and to disclosing information to publics engaged in more communication about environmental issues. This may suggest that a greater commitment to transparency will lead to more environmental communication; though that does not guarantee the communication itself will demonstrate accountability and be useful for publics who are making decision about the responsibility of the organization. Organizations need to consider all dimensions of transparency in their environmental communication.

Comparing the ranking of environmental topics for amount of communication, practitioner knowledge, and practitioner attitude, it becomes apparent that the order of environmental issues is surprisingly similar. This suggests not only does the mean score of knowledge, attitude, and amount of communication correlate, but possibly the levels of each for individual issues may be closely related. As practitioners become more knowledgeable about environmental issues, they may develop a stronger attitude about the need for the organization to address the issues and this may lead to more communication being disseminated from the organization. However, it is also possible that these three variables may work in another order, and that mediating variables may be present in the relationships. Nonetheless, it is interesting to note that practitioners with greater knowledge and more positive attitudes tend to work for organizations that communicate more about the environment. This suggests that knowledge about environmental issues may play a role in the amount of corporate and governmental communication about environmental issues and policies. More research needs to be done to explore the relationship between knowledge, attitude, and communication

among communicators. Clearly, practitioners in this study have built their environmental knowledge from self-education, including news media consumption, visiting websites, reading books, and talking with others. However some knowledge was gained through formal education as well, including training, seminars, and classes. It may be valuable for organizations to offer training sessions and seminars in environmental communication to public relations employees. At the least, this will improve employees' understanding and attitude toward environmental issues as they relate to the organization, and it may improve communicators' motivation to develop campaigns and other communication around environmental issues.

The quantity and the transparency of environmental communication is important for corporations and government organizations because they are judged by key stakeholders in part by their social responsibility including their commitment to eradicate any impact their processes or policies on the environment. Not only will greater environmental knowledge cause public relations professionals to produce a better communication product, but it may also allow them to lead the way to greater environmental performance within their organizations.

CONCLUSION

This study examined the characteristics of environmental communication from corporate and government organizations, and it tested for a relationship between practitioner environmental knowledge, environmental attitude, and an organization's level of environmental communication.
There were a number of limitations to this study. First, the use of survey data provides challenges in the interpretation of causation. While the author would like to say that practitioner knowledge predicts practitioner attitude and organizational environmental communication, that cannot be established with this data. Second, the response rate in this study was low. Therefore, the generalizability of the data is questionable. Third, personal environmental beliefs of practitioners were not measured, and therefore, their impact on practitioners' responses could not be determined.

Future studies should further explore environmental transparency to solidify the explication of this concept. Research also should explore how organizations are engaging with different publics around environmental issues. This would help deepen our understanding of the environmental communication.

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