

## **Public communication of science – not a priority of university PR in Taiwan**

**Yin-Yueh Lo<sup>1</sup>**

Department of Communications Management, Shih Hsin University, Taiwan

### *Introduction*

The importance of science organizations in public communication of science is increasing. Peters (2012) observes the professionalization of public relations (PR) of science organizations, including increasing institutionalization of public relations and strategic utilization of public communication. Marcinkowski et al. (2014) show that public relation officers successfully motivate scientists to participate in public communication. Press releases about science from science organization strongly affect the framing of science in news coverage (Adams et al., 2019; Sumner et al., 2014). Autzen (2014) even argues that direct dissemination of press releases via different channels is a “new trend in science communication”. According to Lehmkuhl (2019), the pursuit of public visibility because of its contribution to the legitimization of science organizations became central to science organizations, while the goal of contributing to public communication of science became peripheral.

With some exceptions (e.g., Koso, 2021), evidence and arguments about the increasing role of organizational PR in science communication are largely based on studies conducted in Western countries. This paper reports some results about the role of universities in public communication in Taiwan. Universities are the most important research organizations. According to the database of Taiwanese National Profiles of Human Resources in Science and Technology (NPHRST)<sup>2</sup>, around 70% of the researchers work in Higher Education. With regards to public communication of science, scientists are generally much more trusted than journalists, and this is particularly true in Taiwan (Gallup, 2019). The question thus is whether science organizations in Taiwan make use of this public trust and assume responsibility for contributing to public understanding of science.

Based on a series of qualitative interviews with of PR officers of science organizations in Taiwan, Lo et al. (2019) found that PR officers at research institutes were more aware of their responsibility for public understanding of science than the PR officers at universities. PR officers at universities seemed to focus on the educational function of universities and found it more easily to attract public attention by focusing on their educational function than by highlighting scientific achievements. This paper aims to answer questions about the science organizations’ self-image presented on their official websites, and to what extent public communication of science is part of their PR strategy.

---

<sup>1</sup> Email: [yylo@shu.edu.tw](mailto:yylo@shu.edu.tw)

<sup>2</sup> <https://hrst.stpi.narl.org.tw/li/3739/notice02.htm>

## *Methods*

To analyze the self-presentation of scientific organizations, I conducted a content analysis of 104 homepages of Taiwanese science organizations, including 43 public universities, 34 private universities, and 27 public-funded research institutes. Pictures as well as texts of the homepages were analyzed with a focus on which people were shown in the pictures, on references to scientific research and outcomes, and on communicative functions “dates and information sharing (such as event announcements) and “demonstration of quality and performance” of the organization. A total of 1,624 information units (texts as well as pictures) were coded. The analysis was restricted to the “homepage”, i.e., the main page of the organizations’ websites, as I assumed that this page is particularly important for image building.

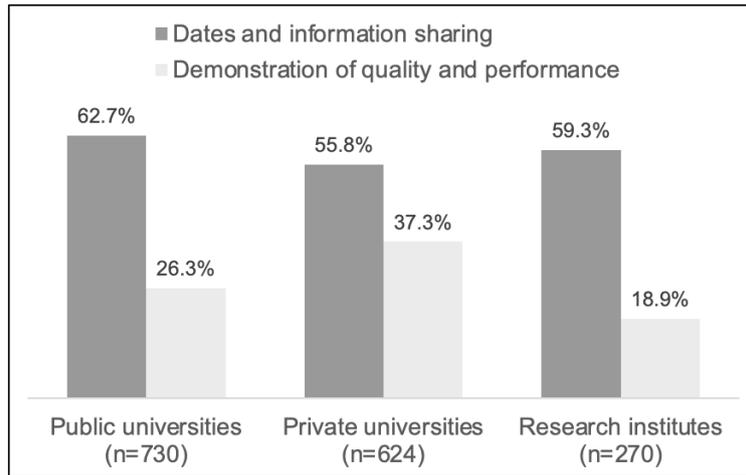
Three master students served as coders. All three coders had taken courses of science communication, in which they learned to be attentive to science-related news. Before starting the coding, the coders were trained in a two-day training workshop on how to apply the categories. Test coding of 5 homepages during the training and discussion of the results of the coding until agreement was reached ensured a common understanding of the meaning and application of the categories. The three coders independently coded all homepages. The final codes were determined by majority rule, selecting the code on which at least 2 of the 3 coders agreed.

Following the interpretation of the kappa statistics by Landis and Koch (1977), intercoder reliability analysis based on Fleiss’ Kappa – calculated with R 2.6.3 – reached a “fair” (> .20) level intercoder reliability. All reported kappa values are highly significant ( $p < .0001$ ). Because of the majority rule approach, the coding results are more reliable than the kappa figures suggest.

## *Results*

Disseminating basic information about the organizations’ activities is the main function of the organizations’ homepages. This is true for all three types of science organizations. About 60% of 1,624 information units are about event dates, workshops, learning programs etc. Overall, another roughly 30% of all units demonstrate quality and performance and may be considered as aiming at building a positive image (Figure 1). The remaining units serve other communicative functions such as publishing statements or clarifications of the management and are not discussed in this paper.

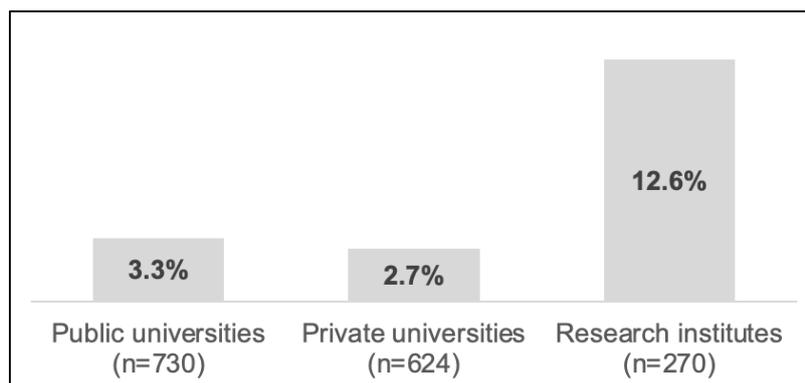
Compared with public universities and research institutes, a significantly larger share of information units on homepages of private universities refer to achievements of the organization or its members ( $\chi^2=28.74$ ,  $p<0.01$ ). 37% of the 624 information units are related to image building, compared to 26% and 19% of the units in homepages of public universities and research institutes, respectively. A possible explanation for the difference may be that a good public image is crucial for attracting (tuition paying) new students and sponsors which are particularly important for the economic survival of private universities.



**Figure 1:** Communicative function of information units

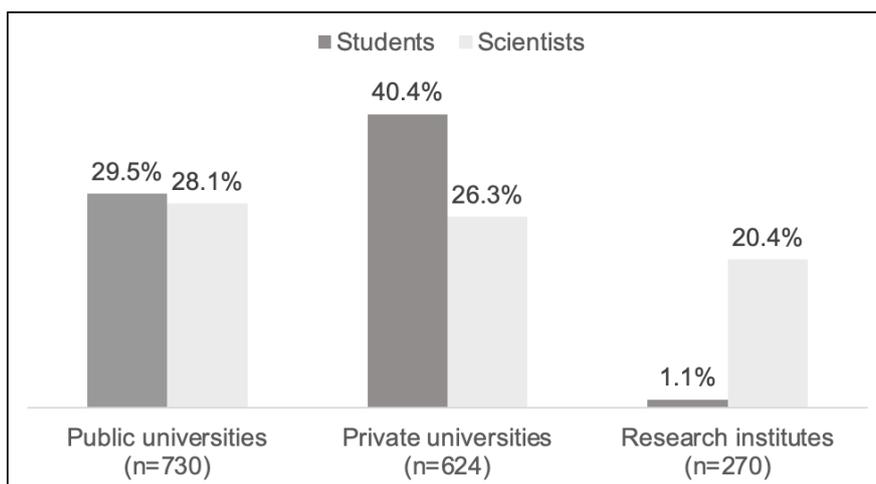
Surprisingly, only a small share of the information provided on the homepages concerns scientific research of the organizations. Overall, less than 5% of the information units relate to scientific achievements, such as important publications, receiving important research grants or patents. This result seems to support the argument of Lehmkuhl (2019) that public communication of science is only peripheral in organizations' PR strategy.

Research institutes publish relatively more information about their scientific research and research outcomes than public and private universities. While 13% of information units presented by research institutes refer to scientific achievement, this is only the case for 3% of the units presented on university homepages (Figure 2). The different focus of universities and research institutes with respect to research may result from different legitimization needs of different types of science organizations. Consistent with findings from previous interviews (Lo et al., 2019), research institutes stress research performance for their legitimization on their homepages, whereas universities put less emphasis on research but rather emphasize their educational performance.



**Figure 2:** References to scientific research and research outcomes in information units

As expected, the different forms of legitimization are also apparent in the pictures published on homepages. On university homepages students are frequently shown, while they hardly appear on homepages of research institutes. In the case of private universities with their particular dependency on tuition fees, students are even more frequently shown than scientists (Figure 3).



**Figure 3:** Depiction of students and scientists in pictures published on homepages

### Conclusions

Results of a content analysis of science organizations' homepages suggest that public communication of science is not a priority of university PR in Taiwan. Several authors have argued that the organizations' legitimization demands are a crucial determinant of their science PR strategies (e.g., Lehmkuhl, 2019; Peters, 2012). This study provides further evidence that different legitimization demands across types of science organizations – public university, private university and public-funded research institutes – lead to different forms of self-presentation. Research institutes are more likely to build their image on their scientific competence than universities, as to legitimize themselves as *research* institutes.

To some degree, public and private universities have similar presentation styles with their focus on their educational function. However, private universities seem to put more effort in image building and are even more likely to put students in the center of their self-presentation. This is probably due to the private universities' larger reliance on private funding, in particular in the form of tuition fees. On average, the contribution of students' tuition fees to university budgets are 54% for private universities and 19% for public universities (Jacob et al., 2018).

The conclusions of this paper are based on the results of an analysis of science organizations' homepages. Yet, science organizations may not consider their websites as the appropriate platform for public communication of research and scientific knowledge and thus seek other ways for this content. For example, the most prominent research institute in Taiwan, Academia Sinica, launched another website, Research Yowu<sup>3</sup>, for popularizing their own research. It is thus necessary to extend our research to other channels of public communication in order to get a comprehensive overview of Taiwanese science organizations' public communication activities.

<sup>3</sup> <https://research.sinica.edu.tw/>

## References

- Adams, R. C., Challenger, A., Bratton, L., Boivin, J., Bott, L., Powell, G., Williams, A., Chambers, C. D., & Sumner, P. (2019, May 16). Claims of causality in health news: a randomised trial. *BMC Med*, *17*(1), 91. <https://doi.org/10.1186/s12916-019-1324-7>
- Autzen, C. (2014). Press release - the new trend in science communication. *Journal of Science Communcation*, *13*(03), C02. <https://doi.org/https://doi.org/10.22323/2.13030302>
- Gallup. (2019). *Wellcome global monitor 2018: Dataset and crosstabs for all countries (Excel file)*. <https://wellcome.ac.uk/reports/wellcome-global-monitor/2018>
- Jacob, W. J., Mok, K. H., Cheng, S. Y., & Xiong, W. (2018). Changes in Chinese higher education: Financial trends in China, Hong Kong and Taiwan. *International Journal of Educational Development*, *58*, 64-85. <https://doi.org/10.1016/j.ijedudev.2017.03.006>
- Koso, A. (2021). The press club as indicator of science medialization: How Japanese research organizations adapt to domestic media conventions. *Public Understanding of Science*, *30*(2), 139-152. <https://doi.org/10.1177/0963662520972269>
- Lehmkuhl, M. (2019). Journalismus als Adressat von Hochschulkommunikation. In B. Fähnrich, J. Metag, S. Post, & M. S. Schäfer (Eds.), *Forschungsfeld Hochschulkommunikation* (pp. 299-318). Springer Fachmedien Wiesbaden GmbH. [https://doi.org/10.1007/978-3-658-22409-7\\_14](https://doi.org/10.1007/978-3-658-22409-7_14)
- Lo, Y.-Y., Huang, C.-J., & Peters, H. P. (2019). Do organizational interests interfere with public communication of science? An explorative study of public relations of scientific organizations in Taiwan. *East Asian Science, Technology and Society: an International Journal*.
- Marcinkowski, F., Kohring, M., Fürst, S., & Friedrichsmeier, A. (2014). Organizational influence on scientists' efforts to go public: An empirical investigation. *Science Communication*, *36*(1), 56-80. <https://doi.org/10.1177/1075547013494022>
- Peters, H. P. (2012). Scientific sources and the mass media: Forms and consequences of medialization. In S. Rödder, M. Franzen, & P. Weingart (Eds.), *The sciences' media connection - public communiaction and its repercussions* (pp. 217-239). Springer.
- Sumner, P., Vivian-Griffiths, S., Boivin, J., Williams, A., Venetis, C. A., Davies, A., Ogden, J., Whelan, L., Hughes, B., Dalton, B., Boy, F., & Chambers, C. D. (2014). The association between exaggeration in health related science news and academic press releases: Retrospective observational study. *BMJ*, *349*(g7015). <https://doi.org/10.1136/bmj.g7015>