

Civic Capacity and Sustainability in a Chinese City

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With a few exceptions [1]–[9], most sustainable human-computer interaction (HCI) work focuses on the implementation of novel systems or empirical studies in developed Western countries. Research on non-Western world is both necessary and can expand understandings of sustainable HCI. We report an ethnographic study of the efforts of an environmental volunteer organization, the Environmental Guardian Group, to promote sustainability in a Chinese city. Our research considers how group-level civic capacity can promote effective sustainability-related civic engagement. We use the term civic capacity to mean communities' "ability to mobilize their members (both individual and institutional) into collective action aimed at improving their circumstances" [10]. Civic capacity can be realized at the level of associations, neighborhoods, cities, or nations [10]. Available resources, as well as local institutions and culture [11], determine collective civic capacity [10].

The ethnographic study lasted from August, 2014 to September, 2014. The methods included participant observation, two focus groups composed of both governmental officials and ordinary citizens, and sixteen semi-structured interviews with volunteers in the group.

We found that the group's civic capacity was hindered by their own lack of expertise, by lack of public trust in civic organizations, and by the interventions of the local government. The Environmental Guardian Group struggled with their members' lack of expertise, which limited their ability to work toward their goals. Most members were low-income migrant workers with a middle or high school education. Few possessed the essential know-how the Group needed in environmental protection, management, and public relations. Lack of funds, experts, and training opportunities created a poor learning environment in which the group could not bootstrap its knowledge and skills. Therefore, members focused on mundane activities such as recycling batteries and weeding community gardens. As we saw, these humble activities in turn discouraged more expert citizens from joining.

Like many Chinese social organizations [12], the Environmental Guardian Group depended on local government funding. Although government funding and permits enabled the Group's civic activities, these interventions also came with government supervision. For instance, government officials required that the Group submit activity proposals and seek approval before acting. Sometimes the government directly commanded a group action. With so

much time and energy spent seeking government approval and heeding government commands, the Group's civic capacity was severely constrained. Pragmatic needs dictated that they maintain non-confrontational relations with the government, which meant that group officers usually made the choice to compromise in the face of governmental commands.

Information and communication technologies (ICTs) fail to empower the group facing the challenging situation. Group leaders hoped that ICTs could help facilitate communication with the government and the public, and ultimately increase their civic capacity. However, their lack of public relations skills limited the production of influential publicity. They regularly posted information such as events calendars and photographs, creating thousands of Weibo posts. But most of the posts did not get a single re-post or comment. In addition to the challenge of promoting themselves, the Group considered Weibo a double-edged sword. It could be tricky to use, and even dangerous, if citizens misinterpreted the Group's actions due to the general distrust of civic organizations following the Red Cross incident [13], [14]. Previous research published before 2011 demonstrates that many organizations in China established credibility and trustworthiness in the public eye by displaying their numerous government ties [12], [15]. However, after the Red Cross scandal, public trust declined. The Group found that ICTs did not support communication with the government very well. The government had provided the Group with relevant officials' email addresses and the e-government website where citizens could submit suggestions and feedback online. However, the Group rarely used them, because computer-mediated communication can easily sound "too formal, unfriendly, and disrespectful," according to a group leader. The leaders found face-to-face communication more effective.

Our findings show that lack of expertise and government intervention constrained the Environmental Guardian Group's civic capacity and hence their effectiveness. ICTs' had limited potential to overcome a complex set of regulations, cultural norms, and social problems such as low levels of education. Future work in the Chinese context must take account of voluntary organizations' relationship to government, i.e., that in China, legal organizations are always linked to government. For ICTs to contribute to building civic capacity, the government must be a stakeholder. Designers need to consider how to design for systems facilitating negotiation between government and voluntary organizations.

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