

Environmental Campaigns: Audience Segmentation of Singaporean Consumers

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This study focuses on media campaigns that promote climate policies and pro-environmental consumer behaviors in Singapore (e.g., purchasing energy-efficient appliances). Such outcomes facilitate climate change mitigation and adaptation. Media campaigns seeking to motivate public engagement and action need to be highly strategic in order to maximize limited resources for the greatest impact. Audience segmentation analysis is one approach to attaining such outreach efficiency. This approach provides communicators with useful information about different audiences' attitudes, perceptions, beliefs, and behaviors with regard to climate change, which communicators may use to tailor messages.

Audience segmentation analysis stems from social marketing, which involves the application of marketing principles to promote socially beneficial attitudes and behaviors (Dibb & Carrigan, 2013). Identifying groups within a population that align on key attributes—e.g., climate change beliefs, environmental behaviors and support for climate policies—allows for more effective planning and execution of media campaigns by targeting and engaging specific groups who are most likely to attend and respond to climate change messages. Segmentation analysis can also identify groups that may be uninterested or unconvinced about climate change, and different approaches in campaigns would be needed to address these groups.

We conducted a nationally representative survey of Singaporeans ($N = 1,006$) in March 2014 to identify distinct segments within the population. The survey included a battery of questions developed for segmentation analysis in the United States (Maibach, Leiserowitz, Roser-Renouf, & Mertz, 2011). The 15 items tapped into people's climate change beliefs, issue involvement, personal environmental behaviors, and preferred societal responses to climate change. The same battery has been replicated in other countries such as Australia (Morrison, Duncan, Sherley, & Parton, 2013), revealing country-specific distributions among the audience segments. The current study sought to evaluate the segmentation typology in a non-Western context and obtain data for cross-cultural/national comparisons.

We ran a discriminant analysis on the data using SPSS. Preliminary results indicate that 95.1% of the respondents are categorized into three out of the six audience segments that Maibach et al. (2011) described: *Alarmed* (22.3%), *concerned* (48.1%), and *cautious* (24.8%). This distribution suggests that the majority of Singaporeans are inclined to believe that climate change is happening. In particular, members of the first two audience segments (alarmed and concerned) perceive climate change as a threat that requires both personal and government action. On the other hand, very few Singaporeans fell into the remaining three categories: *Disengaged* (1.7%), *doubtful* (2.2%), and *dismissive* (1.0%). Notably, members of the last two audience segments (doubtful and dismissive) are the most likely to reject calls for personal or government action to mitigate climate change.

These findings suggest that the segmentation instrument used in the United States does not adequately parse Singaporean attitudes and behaviors toward climate change. In order to support effective message targeting and design in Singapore, researchers and communicators need to consider other crucial variables that differentiate audience segments with respect to climate change. Specifically, there is a need to develop a localized typology that can encompass unique socio-economic and cultural dynamics in Singapore, and how these dynamics manifest in the public's

perceptions and experience of climate change. Thus, we are in the process of conceptualizing a new audience segmentation typology and devising an instrument specific to the Singapore context. This instrument can help define new audience segments to allow more strategic message design and tailoring, and inform other aspects of locally run campaigns.

The first step toward developing this typology has been to identify socio-psychological factors that may uniquely orient Singaporeans to the issue of climate change. Specifically, we consider how Singaporeans process information related to science and risk. The existing segmentation analysis does not speak clearly to perceptions of risk probability and magnitude, nor does it address how perceptions of climate change derive from certain social and institutional pressures. In this vein, we consider environmental literacy as a basis of environmental beliefs and behaviors: people who have high environmental literacy are well equipped to form opinions of fact-based environmental issues. In parallel, we consider socio-cultural norms of respecting authority and deference to experts as bases of environmental beliefs and behaviors (Brossard & Nisbet, 2007; Ho, Brossard, & Nisbet, 2008). Differences in science literacy and trust in scientists and authority may define additional audience segments and inform strategic message designs.

Beyond clarifying perceptions of environmental risks, it may be useful to understand how personal and social norms motivate pro-environmental behaviors. Research suggests that willingness to engage in a pro-environmental behavior is contingent partly on the level of responsibility people attribute to themselves for enacting resolution, and partly on the relative responsibilities they attribute to other stakeholders such as the government, environmental organizations, and businesses to resolve the issue (Kollmuss & Agyeman, 2002). Perceptions of multiple stakeholders can give additional definition to audience segments, which can benefit strategic message designs. Indeed, when communicators vary attributions of responsibility among different stakeholders, so varies audience elaboration likelihood (Yang, Seo, Rickard, & Harrison, 2014). A well-tailored message can maximize the benefit of this effect.

Finally, the new typology will incorporate environmental value orientations (Stern & Dietz, 1994) and motivation orientations (Deci & Ryan, 1985) to further clarify cognitive factors that motivate pro-environmental behaviors. Ethical factors related to environmental stewardship will also be investigated. Although Singapore is arguably one of the most westernized Asian countries, many of its people retain a Confucian orientation (Kuo, 1996), and therefore it is important to assess how people's sense of harmony with nature and Confucian ethics influence their attitudes toward the environment and climate change (Kuo, 2011). Doing so will not only help us to better understand the Singapore population in terms of climate change, but also provide insights about other Asian communities and countries.

At the workshop, we will present a reanalysis of the March 2014 data, namely an updated segmentation using a latent class approach. The findings will be compared with segmentation analyses done in the US, Australia and India, and recommendations made for targeting messages to different groups.

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