



PUBLIC PERCEPTIONS OF NANOTECHNOLOGY

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UNIVERSITY OF WISCONSIN-MADISON

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As an emerging technology, nanotechnology has remained largely unfamiliar to the U.S. public, this is in spite of nanotechnology’s wide and growing use in consumer products. Public attitudes toward nanotechnology will continue to develop as nanotechnology advances. This report provides an update on current nanotechnology perceptions, based on a survey conducted from July to August 2014.

Findings

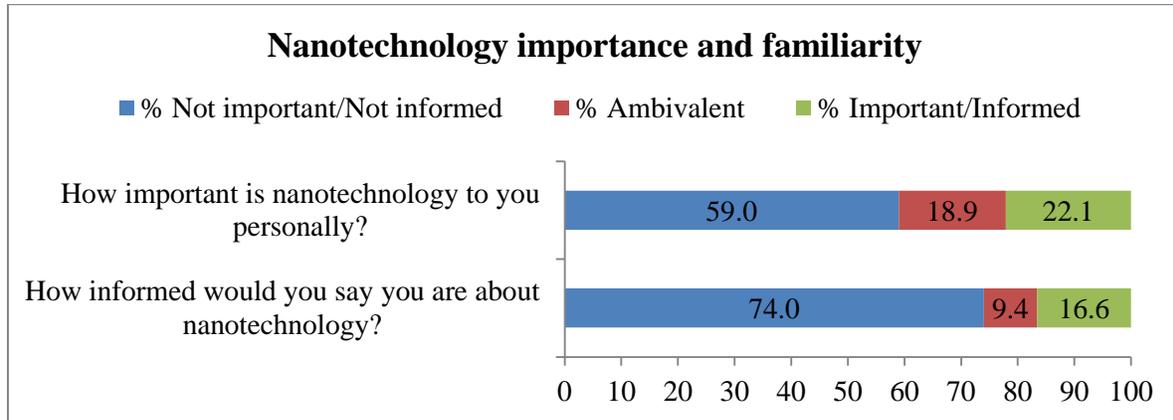


Figure 1. Respondent (N=851) views of both the importance of nanotechnology and their familiarity with it. The majority of participants reported that they were uninformed about nanotechnology and that nanotechnology was not an important issue to them. (11 point scale, from 0="Not at all important/informed" to 10="Very important/informed"; No missing values.)

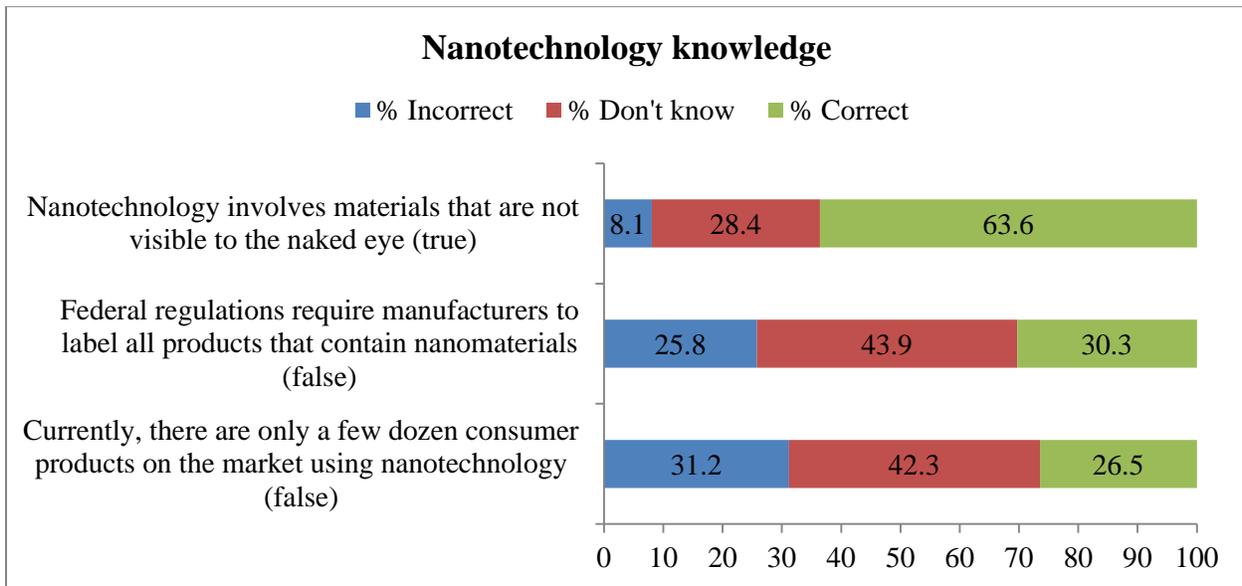


Figure 2. Participant (N=2490 to N=2501) responses to factual knowledge questions about nanotechnology. A considerable portion of respondents were unsure of the correct answers. (Missing values excluded.)

The majority of respondents (59%) indicated that nanotechnology was not an important issue, however at the same time, 74% of participants were also uninformed about nanotechnology (Figure 1). Considerably smaller portions of respondents felt that nanotechnology was an important issue (22%) and that they were informed (17%). Likewise, the majority of respondents (62%) correctly answered none or one of the three factual knowledge questions about nanotechnology (Figure 2). For each of the three questions, a large portion of respondents indicated that they did not know whether or not the statements were true. This unfamiliarity of the public with nanotechnology is in line with previous findings.

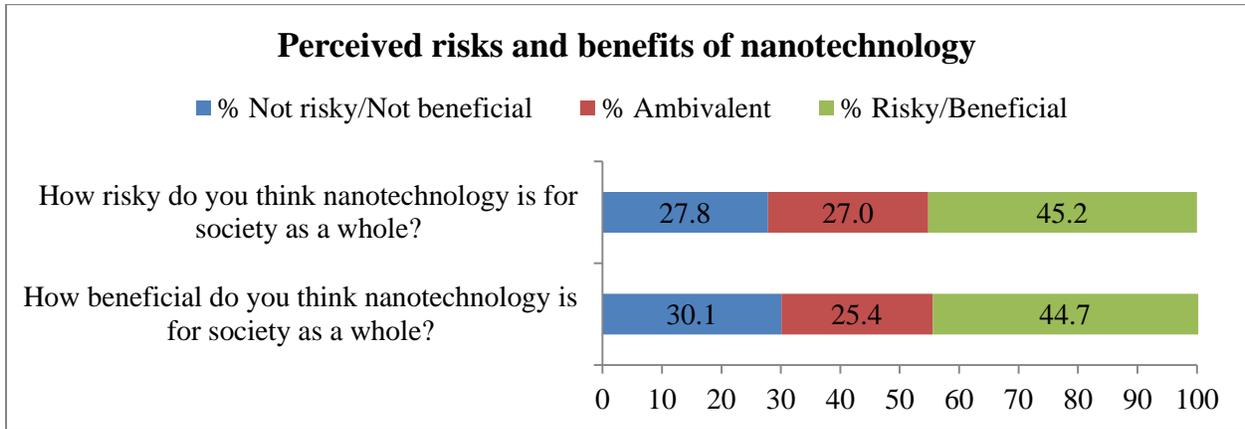


Figure 3. Respondent perceptions of the risks ($N=841$) and benefits ($N=843$) of nanotechnology for society as a whole. Participants reported that nanotechnology is both risky and beneficial. (11 point scale, from 0="Not risky/beneficial at all" to 10="Very risky/beneficial"; Missing values excluded.)

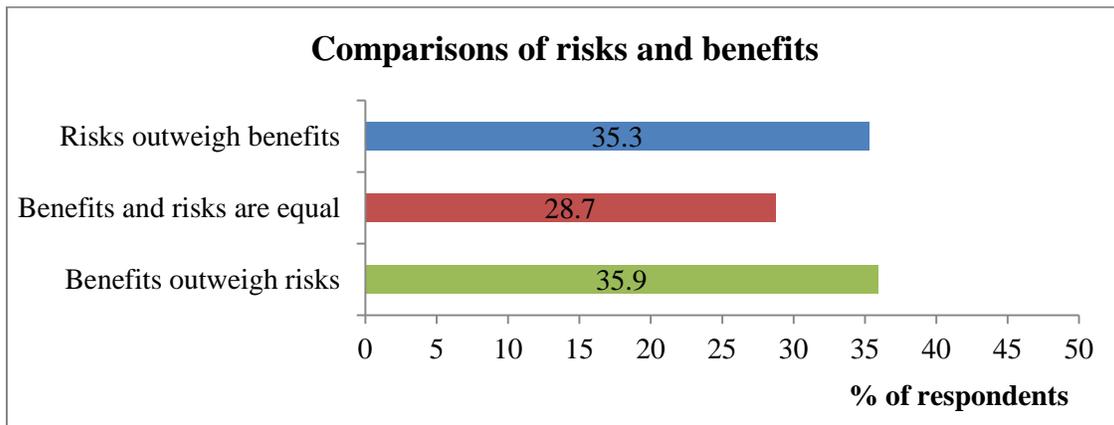


Figure 4. Percent of respondent ($N=835$) who hold the following views of the relative risks and benefits of nanotechnology. The number of participants with opposing views of the relative risks and benefits was approximately equal. (21 point scale, from -10="High benefits and no risks" to 10="High risks and no benefits"; Missing values excluded.)

Respondent perceptions of the risks and benefits of nanotechnology are shown in Figures 3 and 4. Participants were similarly divided across the riskiness and benefits of nanotechnology, with almost equal numbers reporting there will be no risks (28%) and no benefits (30%) and

equal numbers viewing nanotechnology as being both risky (45%) and beneficial (45%). About one fourth of respondents were ambivalent about both the risks and benefits. Generally, respondents viewed nanotechnology as having both risks and benefits (Figure 3). When comparing the relative risks and benefits, an approximately equal number of participants reported that the risks of nanotechnology would outweigh the benefits (35%) as reported that the benefits would outweigh the risks (36%). A significant portion (29%) also reported equal risks and benefits (Figure 4).

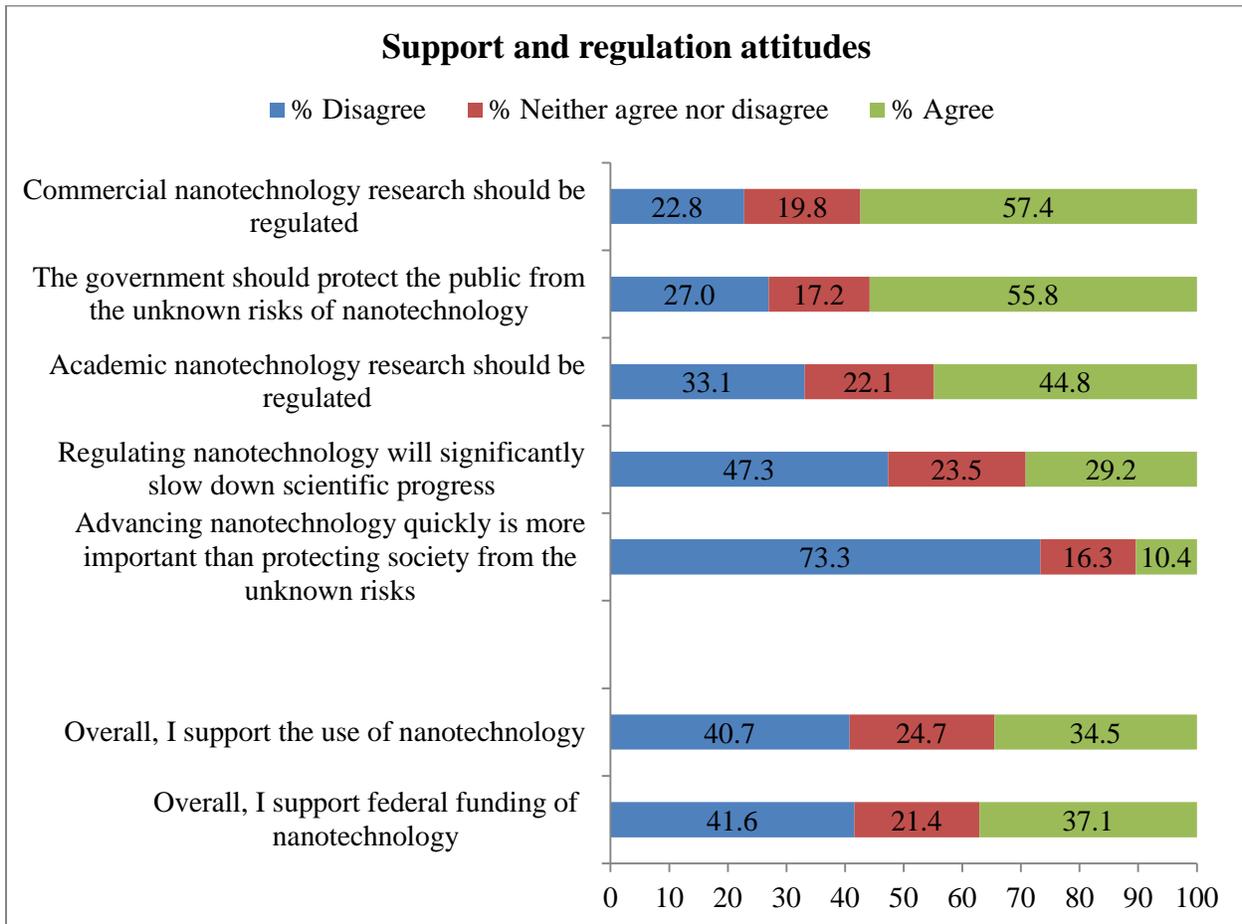


Figure 5. Participant ($N=836$ to $N=843$) attitudes toward nanotechnology. Respondents generally approved of regulations, but were divided on nanotechnology support. (11 point scale, from 0="Do not agree at all" to 10="Agree very much"; Missing values excluded.)

Data on specific attitudes about nanotechnology support and regulation can be found in Figure 5. Most respondents were supportive of both regulations and protection from the potential risks of nanotechnology. More respondents supported commercial research regulations (57%) than academic research regulations (45%). Respondents were split with regard to support for nanotechnology and federal funding. More respondents supported the use of nanotechnology (41%) and federal funding (42%) than did not, but considerable portions remained undecided (25% and 21%, respectively) in their support as well.

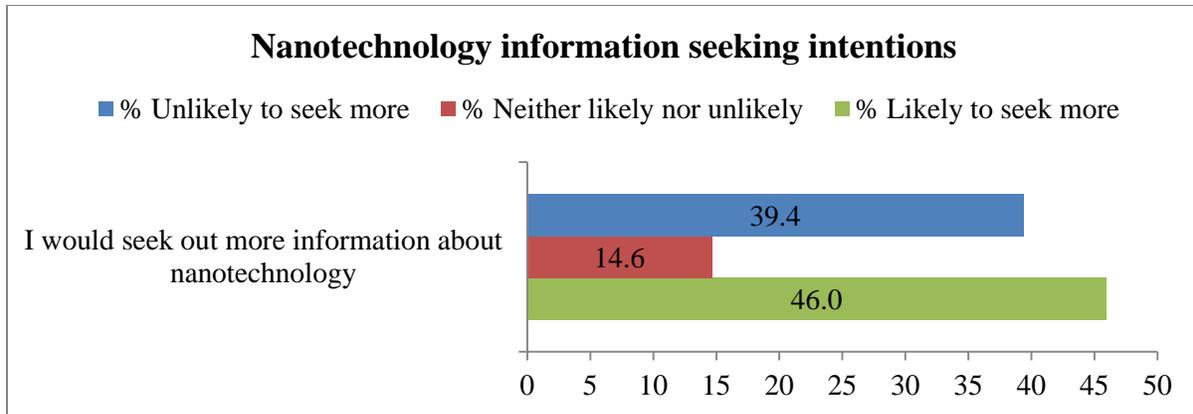


Figure 6. Participant ($N=840$) intentions to seek additional information on nanotechnology. More respondents indicated they were likely to seek more information than those who indicated they were unlikely to do so. (11 point scale, from 0="Not at all likely" to 10="Very likely"; Missing values excluded.)

As reported in Figure 6, more participants (46%) reported they would be likely to seek additional information about nanotechnology than would be unlikely (39%).

Conclusion

Overall, survey respondents were unfamiliar with nanotechnology and viewed it as personally unimportant. Respondents' attitudes toward nanotechnology were relatively ambiguous, with similar views of both risks and benefits. Despite the ambiguity, participants generally supported regulations and more supported the use of nanotechnology than did not. Lastly, although participants felt they were not informed about nanotechnology, they expressed an interest in learning more.

About the survey

Participants were provided with the following definition of nanotechnology, available throughout the survey: "**Nanotechnology** allows scientists to see and work with materials at the nanoscale. Materials can behave in different ways when working with them at this scale. Nano-sized particles are often used in consumer goods, such as nanosilver in cleaning products and carbon nanotubes in tennis rackets." The survey was conducted online through the GfK Group online survey company using a nationally representative sample of 3,145 adult members of the U.S. public. The survey was administered between July and August 2014, with a final stage completion rate of 48.0%. Within the survey, a randomly assigned subgroup was asked only questions about nanotechnology ($N=851$). Within the nanotechnology subgroup, on average participants were middle age ($M=46.8$, $SD=17.4$) and slightly more female (51.9%), with the median level of education as "Some college, no degree" and income as "\$50,000 to \$59,999."

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