

## RESEARCH IN BRIEF

# Public Attitudes about Aerial Drone Activities: Results of a National Survey

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Unmanned Aerial Vehicles (UAV) or Unmanned Aircraft Systems (UAS), commonly known as “drones,” collect information and provide visual monitoring of activities in a variety of public and private settings. These free-flying aircraft are controlled by remote and digital technology. Sites in six states (Alaska, New York, Nevada, North Dakota, Texas, and Virginia) have been federally designated as test locations for identifying operational and safety issues associated with drone technology.

Although several national opinion polls have been conducted over the last several years on drone use for military purposes, less is known about public attitudes and support for drone usage in other contexts. These additional contexts for drone applications include land use patterns, geographical/climatic photo mapping, crowd management, and specific areas within criminal justice (e.g., border patrols, detecting traffic violators, home and business security). Due to the recent and dramatic growth in media attention to drone technology, it is important to establish an empirical baseline of the current level of public knowledge and attitudes about aerial drone usage to track future changes in the public's acceptance of this emerging technology.

This *Research in Brief* summarizes the results of multiple national surveys of public knowledge and support of the use of aerial drone technology in a variety of public and private settings. It is based on samples of 636 U.S. adult citizens who completed internet surveys in the first week of June 2014. A summary of the results, demographic factors

associated with levels of awareness and support for drone usage, the public policy implications of these findings, and the limitations of this study are described below.

## HIGHLIGHTS

- Most adult survey respondents in the U.S. report that they have heard or read about drone usage in various public and private settings.
- Public awareness of drone usage is greatest in the area of military operations (91% had heard about military drone use). Knowledge of drone usage is least common for journalistic news reporting (36%) and crowd monitoring (35%).
- Public support for drone usage varies widely across contexts. Support is greatest for search and rescue activities (93% support) and climatic/geological mapping (87%). The lowest support for drone use is for crowd monitoring at large public events (43%) and for package delivery services to private residences (42%).
- The vast majority (72%) of respondents are “very concerned” about using aerial drones to monitor daily activities around their homes. Their level of being “very concerned” about drone usage decreased appreciably when it involved monitoring people at their place of work (46%) and in public places like parks and schools (26%).
- Public support for drone use in different contexts is strongly associated with the socio-demographic characteristics of the respondents (e.g., age, marital status, political party affiliation, income, views about public safety and individual rights).







believe that the government should place greater importance on “individual rights” are far more likely than “public safety” proponents to be “very concerned” about drone monitoring of daily activities in both public places and private settings. Persons who report high technological expertise are also more likely to be “very concerned” about drone monitoring in each setting than their less technical counterparts. However, for all other socio-demographic groups, only small differences exist in their amount of concern about drone monitoring activity.

### **Implications for Public Policy on Aerial Drone Usage**

The use and proposed applications of aerial drone technology in a variety of public and private settings is at the center of ongoing public policy debates about the issues of public safety, personal privacy, and the acceptable balance between them. Currently, sites in 6 states have been designated as locations for developing operational practices and policies about this technology. Effective public policy on aerial drone usage must address public concerns about this technology, to ensure that users will comply with guidelines and restrictions as to how drones may be used.

Based on the findings from this national survey, public acceptance of aerial drone usage is highly contextual, depending upon the specific area of its application. Respondents were most supportive of aerial drone use in emergency situations (i.e., search and rescue operations in remote areas) and for environmental monitoring (e.g., climatic/geological mapping). They were far less supportive of using aerial drones for monitoring people's activities in public places (e.g., crowd monitoring) and even for detecting criminal activity in open public places. The vast majority of respondents were also “very concerned” about using aerial drones for monitoring people's daily activities around their homes and about half of them voiced similar levels of concern about drone monitoring at their place of work.

From a public policy perspective, these survey findings suggest that aerial drone usage in public and private settings is a controversial social issue that is represented by both strong levels of support and opposition across these settings. Some variation in the levels of public support for drone usage in particular situations is explained by the rater's socio-demographic characteristics (e.g.,

age, income, political party affiliation, views about government policy priorities, and technological expertise).

The development of effective public policy around this emerging technology, however, requires a better understanding of the nature and correlates of these public attitudes toward drone usage in both public and private settings. To achieve this goal, the following questions will be addressed in future studies using multiple methodological approaches:

- Does the low support and high concern about aerial drone usage in some public contexts (e.g., crowd monitoring) and in more private places (e.g., at work, around one's home) derive primarily from concerns about public safety, one's personal safety, invasion of privacy, restrictions on personal freedom, growing distrust in government and private businesses to preserve/protect the public good, and/or more general concerns about living in an increasingly intrusive surveillance society?
- What are the major situational and contextual factors that influence public attitudes about using aerial drones in various settings? For example, do these attitudes vary on the basis of the frequency of monitoring (e.g., does it provide continuous or sporadic images?), the size and distance of the aerial drone from its target, the explicit purpose of its use, and the profile of its user (e.g., government agencies, private business, private citizens)?
- How does the language used to describe this technology impact public perceptions? Are individuals more supportive when terms such as “UAS” or “UAV” are used instead of “drones”? Further, if the public is made aware of existing relevant laws on privacy and personal property (e.g., lack of ownership of the airspace over one's home) currently in place, will there be greater acceptance of drone use by business and government entities?

### **Limitations of this Research**

Several limitations of the current study are notable because they place important restrictions on our substantive inferences about the nature of public attitudes toward aerial drone usage. These limitations are found in virtually all social surveys that employ a cross-sectional design. The three major limitations of the current study are summarized below.

First, this study is based on internet user groups and these groups may not be representative of all U.S. adult residents. It is well known that web users are often younger, have more formal education, and have greater knowledge of computer technology (see Bethlehem 2010; Dillman et al. 2008; Rice and Katz 2003). Consequently, our inferences about "public" attitudes are restricted to the target population of U.S. internet users who may under- and over-represent particular groups in the national adult population. However, comparisons of the survey results across different demographic groupings are less affected by the sample limitations.

Second, the multiple surveys that were included in this national sample were conducted at one point in time (June 1-5, 2014) and may be susceptible to particular historical effects (i.e., some drone-related event that occurred at the same time as the survey influence the obtained results). Although issues of drone usage have been a popular topic in various forms of mass media over the last several years, we are unaware of any particular event in this time period that would have adversely affected the results of this survey.

Third, question wording may dramatically affect the observed results in any survey. Within the current study, we attempted to use less affective and pejorative language in the survey (e.g., using the term "monitoring" rather than "surveillance"). The survey wording was also designed to increase the reliability and validity of the responses by providing a short, written description and examples of each particular area of drone usage. However, even the choice of the particular examples to provide a reference point for the respondents may have some influence on the obtained results.

Due to these limitations of the current study, we recommend that some caution be exercised when interpreting the observed findings and making inferences about national practices. Subsequent studies are now being proposed and conducted to further assess the robustness of the current findings across other sampling frames, different time periods, and alternative question wording.

## Endnotes

- <sup>1</sup> For a complete comparison of the results from the different internet sampling frames, see Heen et al. (2014).

## References

- Bethlehem, J. (2010). "Selection bias in web surveys." *International Statistical Review*, 78(2): 161-188.
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## CONTACT INFORMATION

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