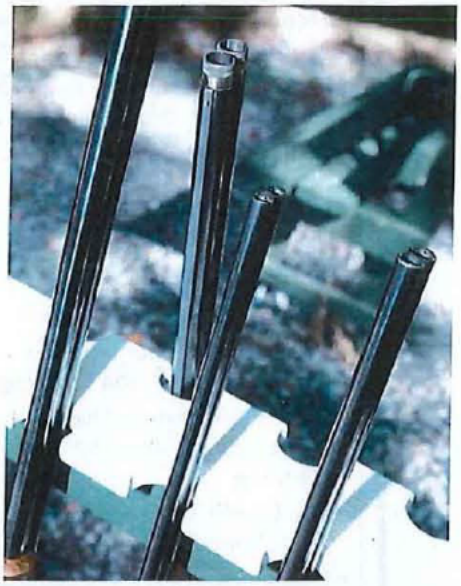
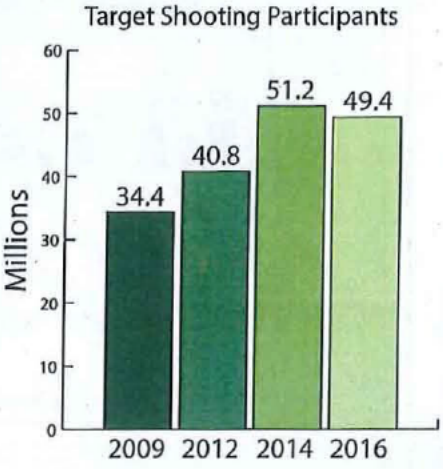
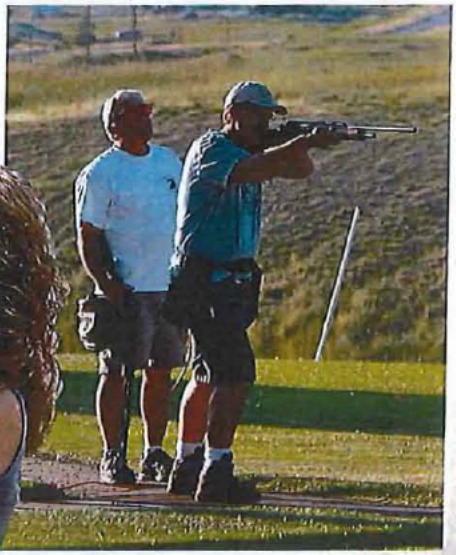
22 Part 1 of 4

NSSF® Report

Sport Shooting Participation In The United States in 2016







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Conducted for the
National Shooting Sports Foundation®
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Sport Shooting Participation in the United States 2009–2016: Overview

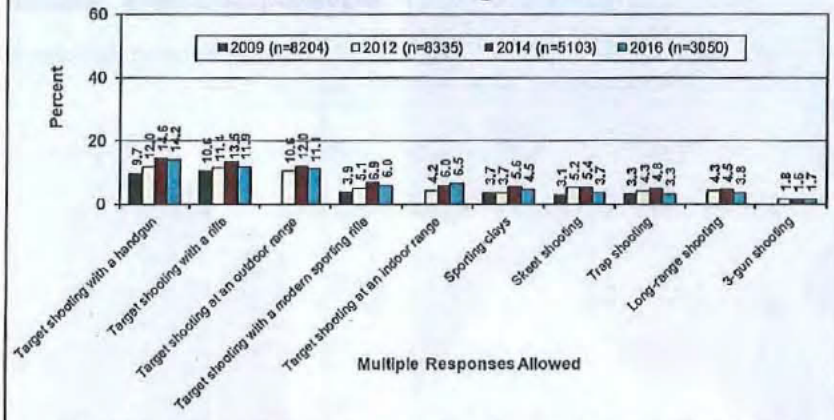
Survey Topics

- Participation in Target and Sport Shooting
- Trends in Participation
- Days of Participation
- Motivations for Participation
- Characteristics of Shooters
- Characteristics of New Shooters
- Demographic Characteristics of Modern Sporting Rifle Shooters
- Traditional and Non-Traditional Pathways To Sport Shooting
- Initiation Into Target/Sport Shooting
- Growing Up With Firearms and Its Effect on Shooting Participation
- Non-Traditional Shooters
- Overlap of Participation in Target Shooting and Hunting
- Types of Firearms Used in Target/Sport Shooting and Hunting
- Likelihood To Go Target or Sport Shooting in the Future
- Reasons for Not Participating in Target or Sport Shooting and Non-Shooters' Demographic Characteristics

This study about sport shooting participation in 2016 is the latest in a series of studies for the National Shooting Sports Foundation about this topic. For nearly a decade, Responsive Management has conducted biennial surveys to measure sport shooting participation among adults in the United States. Each of the studies has looked at the extent of the American public's participation in the full range of shooting sports, allowing us to examine not only participation rates but trends in participation over time.

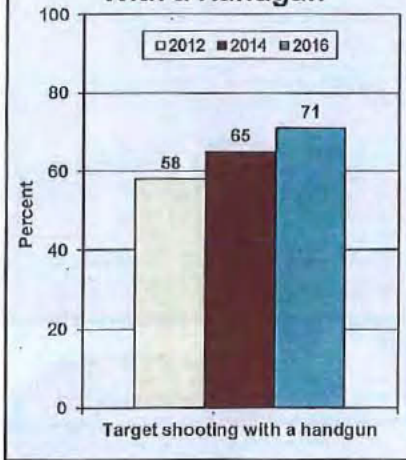
The studies showed a surge in overall shooting participation between 2009 and 2014, but a leveling off in 2016. The 2017 study measured participation rates for 10 shooting sports activities in 2016: target shooting with a handgun, target shooting with a rifle, target shooting with a modern sporting rifle, target shooting at an outdoor range, target shooting at an indoor range, long-range shooting, sporting clays, skeet shooting, trap shooting, and 3-gun shooting.

Percent of Adult Americans Who Participated in Various Shooting Activities

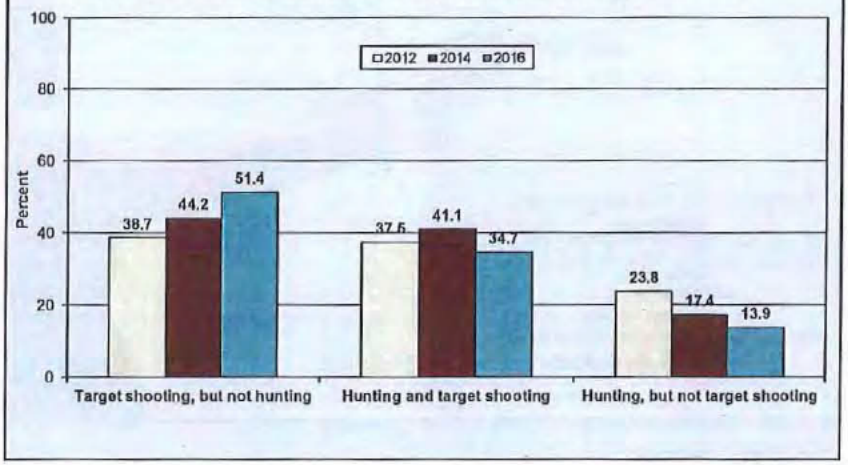


*Note that the graph has been enlarged to improve readability; it only displays through 60% rather than 100%.

Percent of New Shooters Who Went Target Shooting With a Handgun



Percent of All Hunters and Shooters Who Participated in Target Shooting Only, Hunting Only, or Both



Overview Continued

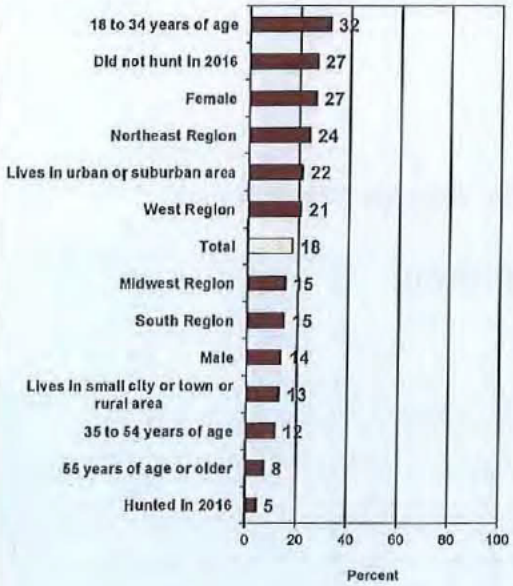
- All activities showed increases during the study periods until 2014. Then between 2014 and 2016, all but two exceptions—target shooting at an indoor range and 3-gun shooting—showed declines, and neither of those two exceptions had statistically significant increases. The largest drops in participation were in skeet shooting and trap shooting. The mean total number of days spent sport shooting declined for each activity, except target shooting with a traditional rifle, between 2014 and 2016.
- Currently, target shooting with a handgun (14.2% of the US population participated), target shooting with a rifle (11.9%), and target shooting at an outdoor range (11.1%) continue to be the most popular forms of sport shooting. There is much crossover in these activities among the same people.
- Being with friends and family—social reasons—continue to be the most important motivation for Americans to go sport shooting.
- The South has more sport shooters than any other region, by far.

Percent of All Hunters and Shooters Who Participated in Target Shooting Only, Hunting Only, or Both in 2016

For the first time during the longitudinal studies, non-hunting target shooters make up over 50% of the total combined population of hunters and shooters.

- The surge in shooting participation has changed the demographic make-up of the sport shooting community. In 2009, about a quarter (25.8%) of all shooters were female, while today 31.4% are female. There has also been an influx of urban and suburban residents into sport shooting, making up about 32% of the community in 2009 and now accounting for roughly 40% of sport shooters.
- Among the entire population of hunters and sport shooters (those who target shot but did not hunt in 2016, those who hunted but did not target shoot, and those who did both), a majority are now non-hunters. In 2016, just over half (51.4%) of the hunting-shooting population were non-hunters. There has been a steady trend among the entire hunting-shooting population moving to non-hunting, with 39% of this population being non-hunters in 2012, 44% being non-hunters in 2014, and 51% being non-hunters in 2016.

Percent of Each of the Following Groups Who Are New Shooters (Among All 2016 Shooters)



The influx of new shooters continues to be disproportionately made up of younger people, non-hunters, females, and those from urban and suburban areas.

- New shooters were examined in the study (those initiated within the previous 5 years): they are more likely than established shooters to be young (18-34), non-hunting, female, and urban or suburban. Trends suggest that target shooting with a handgun is on the rise among new shooters; it has become increasingly important among new shooters since 2012. A whopping 71% of new shooters participate in this activity.
- The influx of new shooters into the population of all shooters has stayed relatively consistent throughout the studies, with 15% to 20% of all shooters being new to the activity with the 5 years previous to each survey. In 2016, new shooters made up 17.8% of all shooters.
- In addition to looking at new shooters, the 2017 study included a section on the participation rates and preferences of non-traditional shooters. Non-traditional shooters for this analysis are defined as having at least 4 of 7 characteristics defined as being non-traditional:
  - Did not grow up in a household with a firearm
  - Was not mentored by a father or other close male relative
  - Is ethnically non-white
  - Is female
  - First experienced shooting with a handgun or modern sporting rifle
  - Was not initiated into shooting until an adult
  - Lives in an urban or suburban area

  Analyses were run to better understand the attitudes and shooting preferences of these non-traditional shooters in comparison to traditional shooters. Out of the data analyses, one theme emerged: non-traditional shooters shoot handguns at indoor ranges for self-defense practice.
- Nearly two-thirds (66%) of new shooters can be classified as non-traditional shooters, as opposed to 24% of established shooters.

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SPORT SHOOTING PARTICIPATION IN THE UNITED STATES IN 2016

Conducted for the National Shooting Sports Foundation

by Responsive Management

2017

SPORT SHOOTING PARTICIPATION IN THE UNITED STATES IN 2016

2017

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EXECUTIVE SUMMARY

INTRODUCTION AND METHODOLOGY

This report about sport shooting participation in 2016 is the latest in a series of studies conducted for the National Shooting Sports Foundation (NSSF) about this topic. Earlier studies were conducted in 2009, 2012, and 2014. These studies determined the regional and national participation rates in target shooting and sport shooting. As with the previous studies, this one entailed a telephone survey of U.S. residents ages 18 years old and older.

For the survey, telephones were selected as the preferred sampling medium because of the almost universal ownership of telephones, particularly with the coverage provided by dual-frame samples that include both cell phones and landlines. Additionally, telephone surveys, relative to mail or Internet surveys, allow for more scientific sampling and data collection, provide higher quality data, obtain higher response rates, are more timely, and are more cost-effective. Telephone surveys also have fewer negative effects on the environment than do mail surveys because of reduced use of paper and reduced energy consumption for delivering and returning the questionnaires.

The NSSF and Responsive Management developed the survey questionnaire cooperatively, based in part on the previous surveys. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

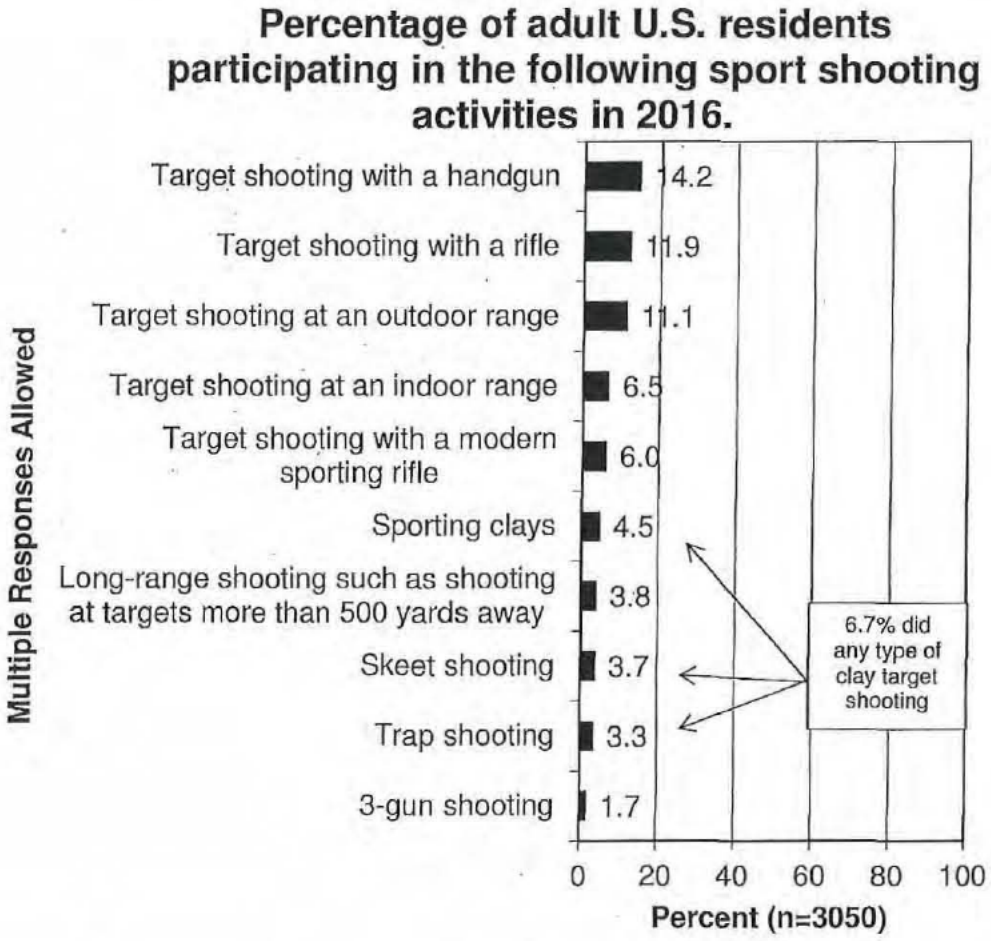
The methodology used a dual-frame sample, which consisted of a random sample of landline telephones and a random sample of cell phone numbers, called in their proper proportions, which ensures that all people in the pool of telephone users have an approximately equal chance of being called. The scientific sampling plan entailed obtaining a target number of interviews in each state, from both landlines and cell phones in their proper proportions, so that the number of respondents in each state in the sample would be proportional to the state's population and, by extension, within the United States population as a whole.

The sample was obtained from Survey Sampling International, a company that specializes in providing scientifically valid telephone survey samples. The overall sample with landlines and cell phones was representative of all Americans 18 years old and older. Responsive Management obtained 3,050 completed interviews overall.

The software used for data collection was Questionnaire Programming Language. The analysis of data was performed using IBM Statistical Package for the Social Sciences as well as proprietary software developed by Responsive Management.

PARTICIPATION IN TARGET AND SPORT SHOOTING

The 2016 rate of target/sport shooting participation was 21.0% of the U.S. adult population, which means an estimated 49.4 million adults participated in any type of target or sport shooting last year. As shown in the graph that follows, the most popular types were target shooting with a handgun (14.2% participated), target shooting with a rifle (11.9%), and target shooting at an outdoor range (11.1%). Note that respondents could have done more than one shooting activity. The actual numbers of participants are tabulated following the graph.



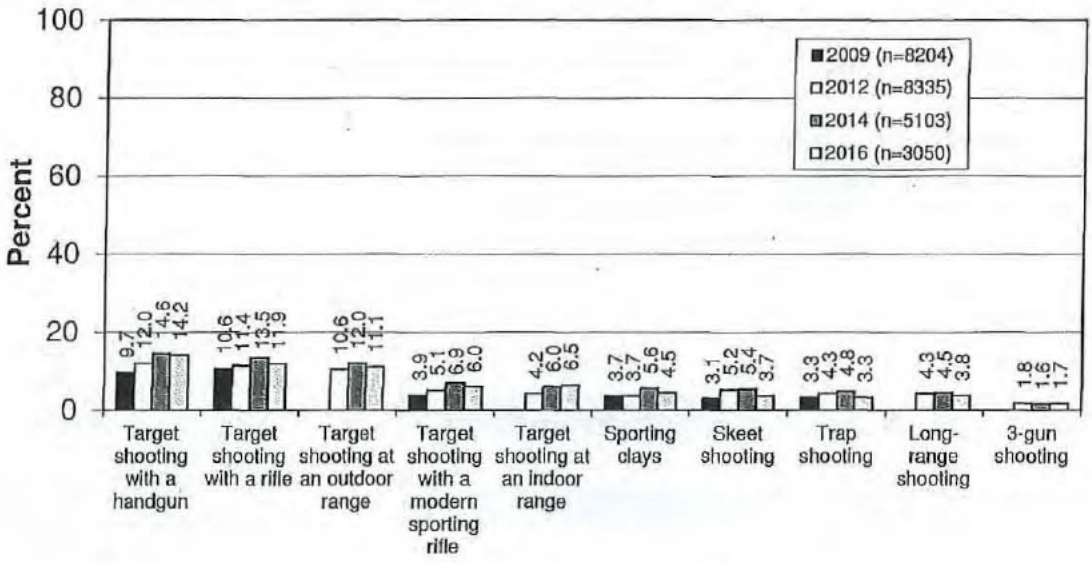
National Participation in Target and Sport Shooting in 2016

Activity	Estimated Total Participants (ages 18 years and older)	95% Confidence Interval	
		Lower Limit	Upper Limit
National			
Any target shooting or sport shooting	**49,361,637**	**45,967,765**	**52,755,509**
Target shooting with a handgun	33,276,976	30,371,902	36,182,051
Target shooting with a rifle	27,949,753	25,252,346	30,647,161
Target shooting at an outdoor range	26,148,339	23,527,956	28,768,721
Target shooting at an indoor range	15,306,421	13,250,097	17,362,745
Target shooting with a modern sporting rifle	13,986,528	12,014,954	15,958,101
Sporting clays	10,545,394	8,820,148	12,270,639
Long-range shooting	8,881,155	7,292,018	10,470,293
Skeet shooting	8,626,450	7,059,382	10,193,517
Trap shooting	7,855,875	6,357,887	9,353,862
3-gun shooting	3,902,990	2,837,956	4,968,023
Any clays (sporting clays, skeet, trap)	15,792,273	13,705,884	17,878,663

TRENDS IN PARTICIPATION IN TARGET AND SPORT SHOOTING

The 2016 adult participation rate in target/sport shooting is 21.0%, which is an increase over the 15.1% rate among adult Americans in 2009 and the 17.4% rate in 2012, but it is just slightly less than the 21.9% rate in 2014. Both items with an increase are too small to be considered marked increases: shooting at an indoor range goes from 6.0% in 2014 to 6.5% in 2016 (not statistically significant), and 3-gun shooting goes from 1.6% to 1.7%—essentially the same. Otherwise, in 2016 relative to 2014, there are slightly lower percentages of Americans participating in most shooting activities. The tabulation compares estimated numbers of participants; the estimated number of target/sport shooters in 2016 decreased 3.6% over the 2014 number overall.

I'd like to know about the types of shooting that you did in [2009 / 2012 / 2014 / 2016]. Did you do any of the following? Did you go...? (Among all participants.)



Multiple Responses Allowed

Activity	Estimated Total Participants*				% Change Compared to 2014
	in 2009	in 2012	in 2014	in 2016	
National					
Any target shooting or sport shooting	34,382,566	40,779,651	51,226,765	49,361,637	-3.6
Target shooting with a handgun	22,169,700	28,209,283	34,221,107	33,276,976	-2.8
Target shooting with a rifle	24,045,795	26,822,425	31,764,116	27,949,753	-12.0
Skeet shooting	6,979,680	12,090,346	12,596,361	8,626,450	-31.5
Target shooting with a modern sporting rifle	8,868,085	11,976,702	16,267,924	13,986,528	-14.0
Trap shooting	7,582,479	10,116,684	11,227,278	7,855,875	-30.0
Sporting clays	8,399,989	8,789,340	13,033,633	10,545,394	-19.1
Long-range shooting	na	9,972,991	10,434,630	8,881,155	-14.9
3-gun shooting	na	4,127,049	3,837,132	3,902,990	+1.7

*Ages 18 years old and older

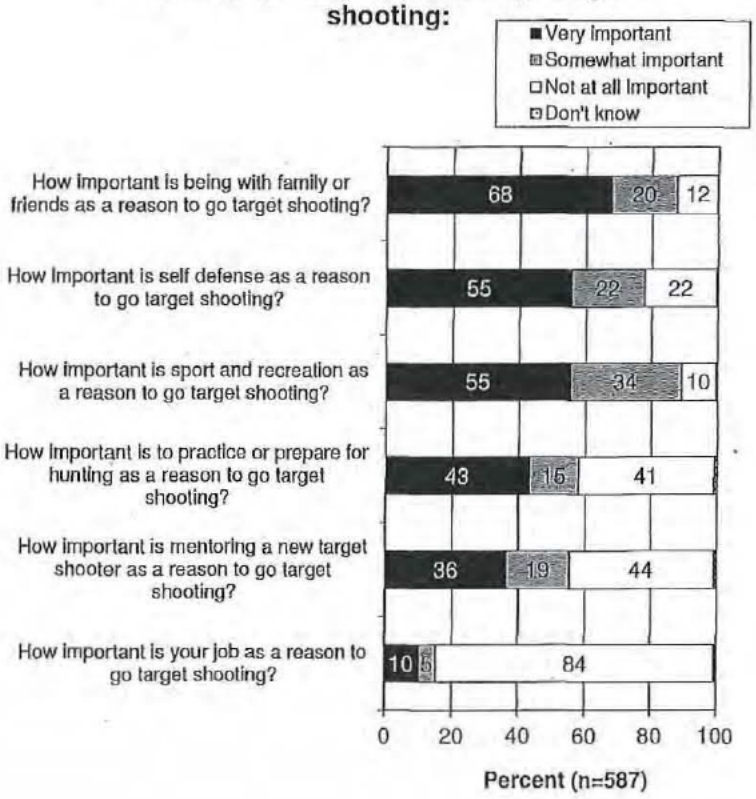
DAYS OF PARTICIPATION IN TARGET AND SPORT SHOOTING

The mean and median days spent in the various shooting activities, among those who participated in each activity, are shown at right. Nationally, 3-gun shooting is the activity with the highest mean days of participation; the next nearest activity is target shooting with a modern sporting rifle.

Activity	Mean Days Spent on Activity in 2016	Median Days Spent on Activity in 2016
National		
Target shooting with a traditional rifle	14.46	4
Target shooting with a modern sporting rifle	16.15	5
Target shooting with a handgun	14.79	5
Trap shooting	11.31	5
Skeet shooting	8.19	4
Sporting clays	7.89	3
3-gun shooting	21.67	5
Long-range shooting	11.36	3
Shooting at a range	9.64	4

MOTIVATIONS FOR TARGET AND SPORT SHOOTING

Percent of target shooters who indicated each of the following was at the given importance level to them as a reason to go target shooting:



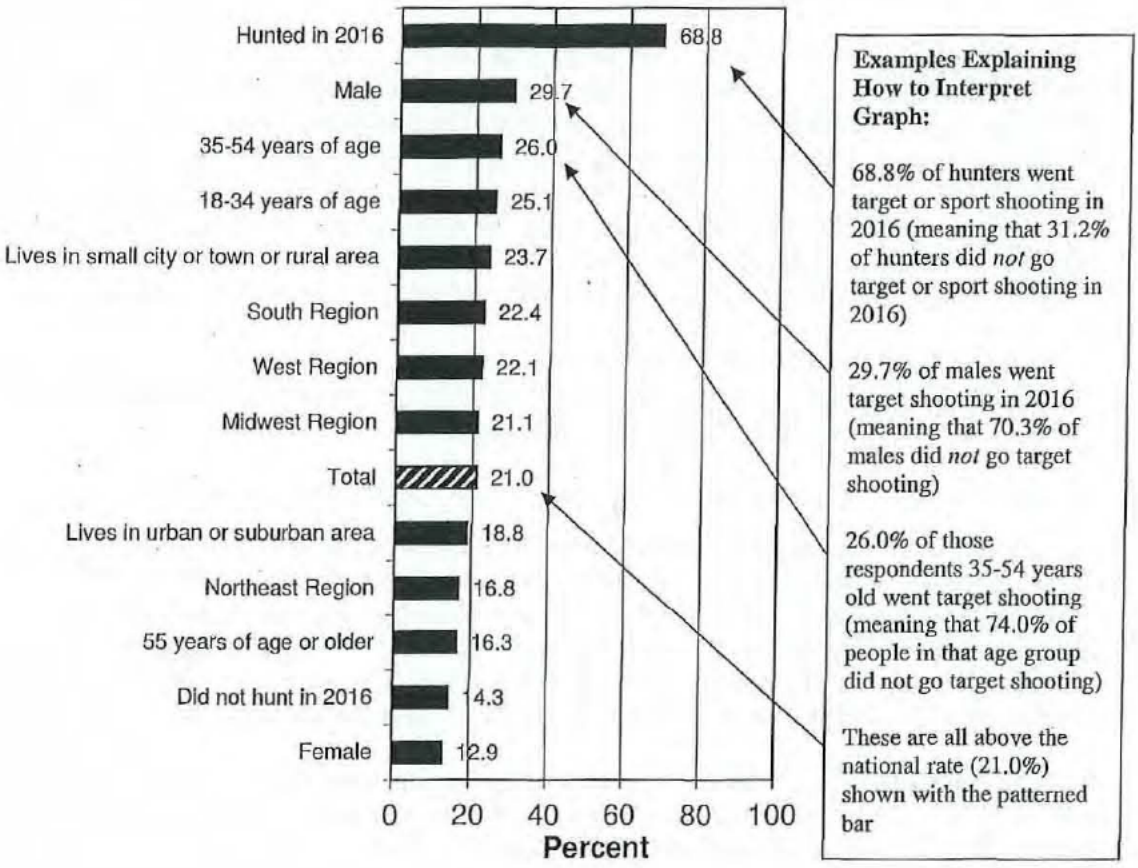
The survey asked a series of six questions examining motivations for target/sport shooting. Social reasons top the list, as well as self-defense: to be with family and friends (68% said it was *very* important) and for the sport and recreation (55%) are the social reasons. Self-defense also has 55% saying it is *very* important. (The graph is ranked by the percentage saying *very* important.)

DEMOGRAPHIC CHARACTERISTICS OF SHOOTERS

This report includes an analysis of the demographic makeup of shooters. Participation in target and sport shooting is correlated with hunting participation, being male, being 18 to 54 years old, and being on the rural side of the urban-rural continuum. The South Region is positively correlated, and to a lesser extent so are the West and Midwest Regions, while the Northeast Region is negatively correlated.

The graph below shows the rate of target/sport shooting participation in the population as a whole (21.0%, the bar that is patterned in the middle of the graph). Those demographic groups above the patterned bar have participation rates higher than the overall rate. For instance, 29.7% of males participated in target/sport shooting (compared to only 12.9% of females, shown in the last bar at the bottom of the graph).

Percent of each of the following groups who target shot in 2016:



CHARACTERISTICS OF NEW SHOOTERS

For this analysis, new shooters were defined as those who started shooting within the past 5 years. The analysis first shows that 17.8% of those who participated in target or sport shooting in 2016 were first initiated into the shooting sports within the previous 5 years. The analysis looked at the group of all target/sport shooters and then separated out new shooters and compared them to established shooters.

New shooters are less likely to have grown up around firearms, a non-traditional characteristic. Several demographic characteristics also point toward non-traditional participation. New shooters are more likely to be urban/suburban than are established shooters, they are more likely to be female than are established shooters, and they are more likely to be non-white than are established shooters. Finally, new shooters tend to be younger than established shooters.

The comparison included the series of questions regarding motivations for target/sport shooting. For each reason, the established shooters have a higher percentage saying that it is a very important reason for shooting, particularly shooting for self defense, to prepare for hunting, and to mentor a new shooter. The fact that every single question in the series has a higher percentage of established shooters naming it as a very important reason suggests that established shooters are stronger in their reasons that they shoot.

Types of shooting done by new shooters versus established shooters show some marked differences. Perhaps most interesting is that new and established shooters have about the same percentage who participated in target shooting with a handgun (both groups with a 71% participation rate in this), but established shooters are much more likely to have gone target shooting with a rifle (63% of established shooters, compared to 43% of new shooters) or with a modern sporting rifle (32% to 23%, respectively). New shooters are less likely to have done any clay target shooting or 3-gun shooting. New and established shooters are about the same in rate of *indoor* range use, but new shooters are less likely to have gone to an *outdoor* range.

In looking at the types of firearms, established shooters have a markedly higher percentage using a traditional rifle, shotgun, modern sporting rifle, air rifle, and muzzleloader, compared to new shooters. The two groups have similar rates of handgun use.

CHARACTERISTICS OF THOSE LEAVING THE SHOOTING SPORTS

As a proxy for those leaving the shooting sports, the analysis used those who had shot in 2016 but in the survey said that they were not likely to go shooting in the next 2 years. The demographic characteristics of these people were then compared to those of new shooters (discussed above). The data demonstrate that those leaving the sport are *not* the same as those coming into it (answering the question of whether many of those who came into the sport in the past few years had simply tried it, had not enjoyed it, and were now leaving it).

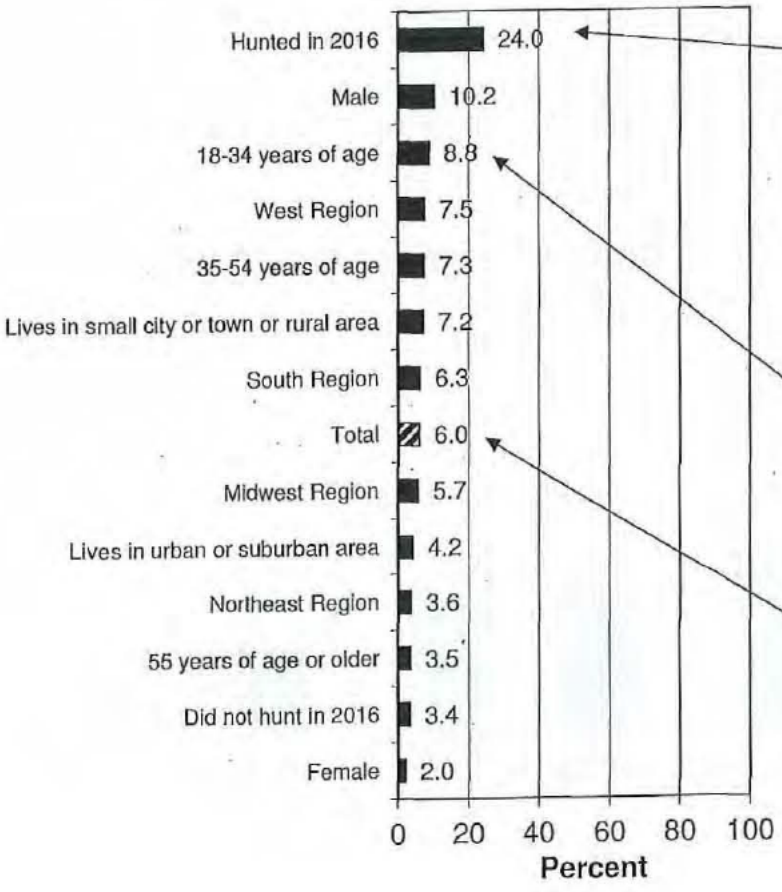
For ease of wording, those who are deemed to be leaving the sport for this analysis will be referred to as lapsers. Compared to new shooters, lapsers are more likely to be male: 55% of new shooters are male, while 60% of lapsers are male. This difference, however, is slight. A more striking difference is in age: lapsers are much older in general than new shooters. The differences are also marked regarding residency: lapsers are more likely than new shooters to come from a small city or town or a rural area. Finally, lapsers are more likely than new

shooters to have grown up in a family with firearms. It would appear that a large portion of lapsers are older established shooters.

DEMOGRAPHIC CHARACTERISTICS OF MODERN SPORTING RIFLE SHOOTERS

The analyses explored the demographic makeup of those who shoot with a modern sporting rifle. This analysis shows that hunting participation is positively correlated with shooting a modern sporting rifle (although this does not mean the modern sporting rifle was used for hunting; it may have been, but not necessarily). In addition, positive correlations were found with being male, being 18-54 years old, and being from the West Region. The groups with participation rates in shooting a modern sporting rifle that are higher than the rate of such use overall are at the top of the graph, above the percentage of U.S. residents overall who used a modern sporting rifle (6.0%, shown by the patterned bar).

Percent of each of the following groups who participated in target shooting with a modern sporting rifle in 2016:



Examples Explaining How to Interpret Graph:

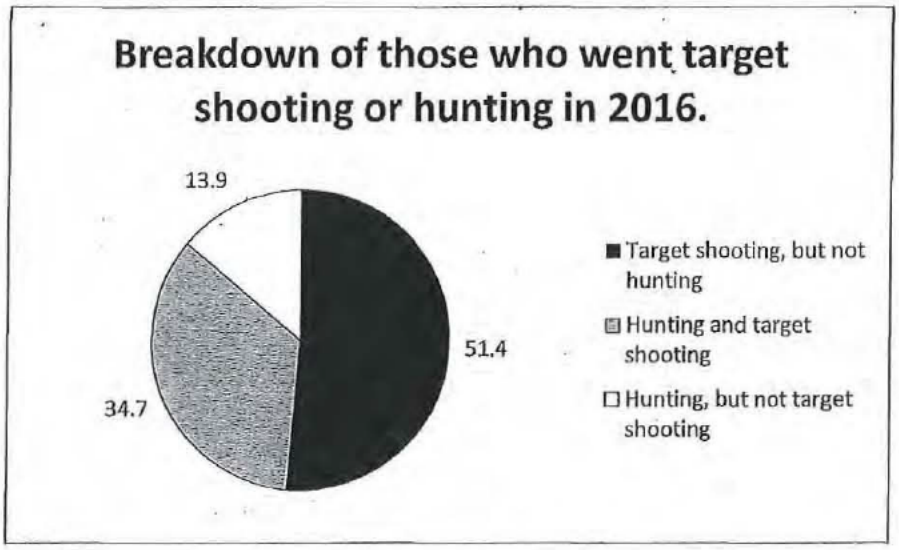
24.0% of those who hunted in 2016 also target shot with a modern sporting rifle (meaning that 76.0% of those who hunted in 2016 did *not* target shoot with a modern sporting rifle) (note that these respondents did not necessarily use their modern sporting rifle for hunting)

8.8% of U.S. residents 18-34 years old target shot with a modern sporting rifle (meaning that 91.2% of residents in that age group did not use a modern sporting rifle)

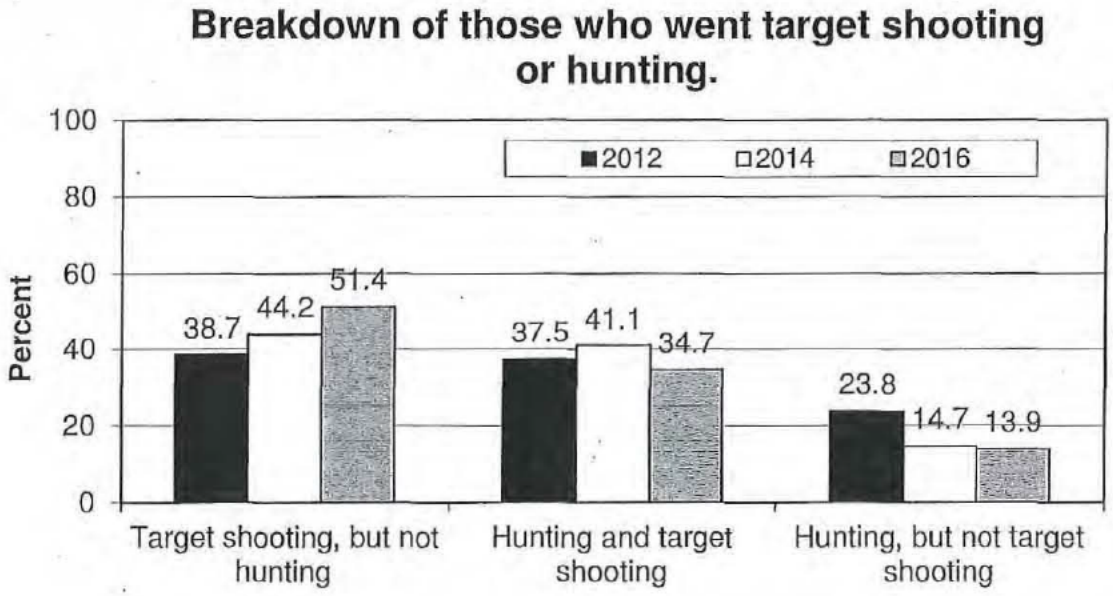
These are all above the rate among U.S. residents overall (6.0%) who target shot with a modern sporting rifle, shown by the patterned bar

OVERLAP OF PARTICIPATION IN TARGET SHOOTING AND HUNTING

The pie graph below shows the proportions of the hunting/shooting pool of participants who went target shooting, hunting, or both in 2016. The entire pie consists of those who *either* hunted (with firearms or archery) or went target/sport shooting. About half of this pool went target/sport shooting but did not hunt.

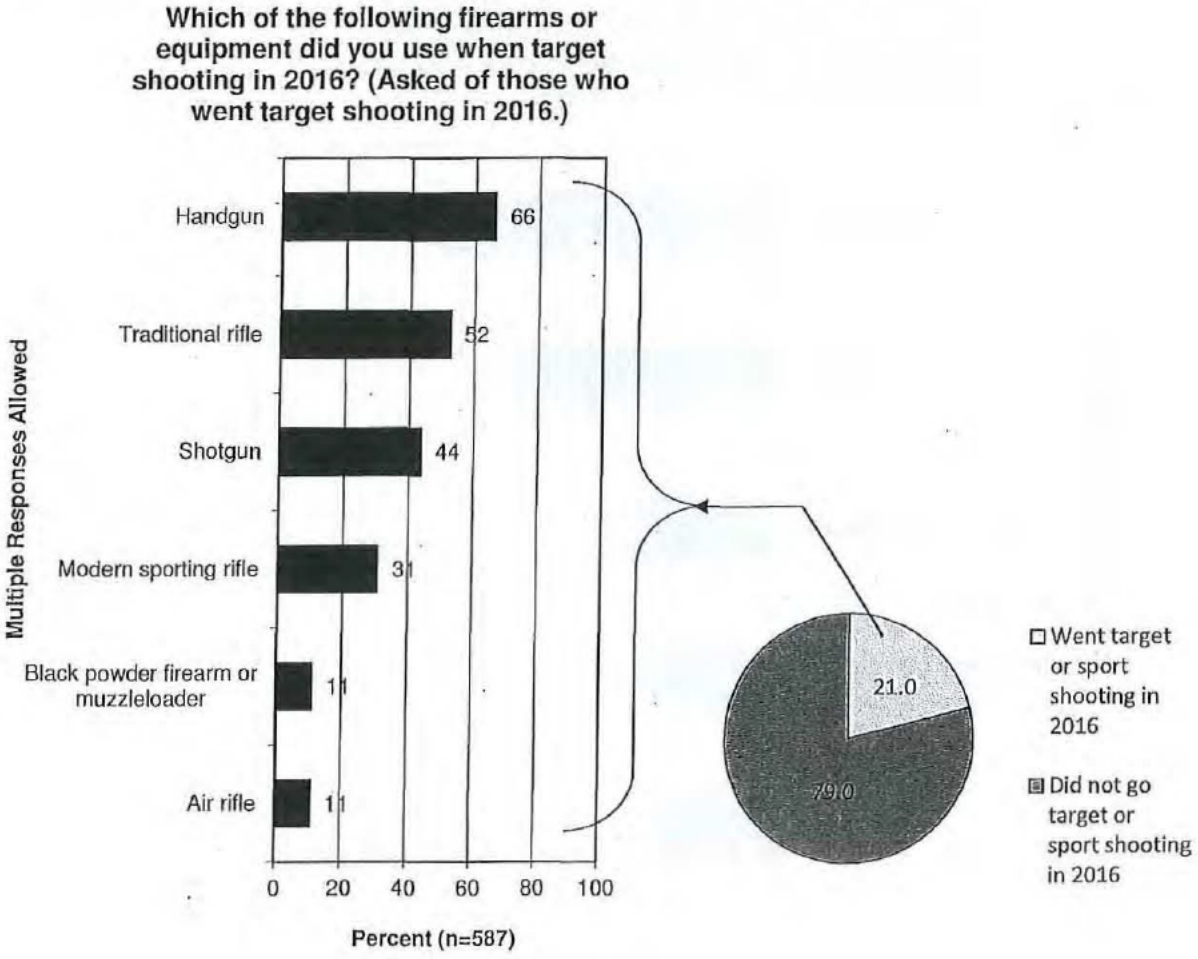


A trend graph shows that hunting exclusive of target/sport shooting has declined over the given time period from 2012, when it made up 23.8% of the hunter/shooter pool, to 2016, when it made up only 13.9% of the pool.



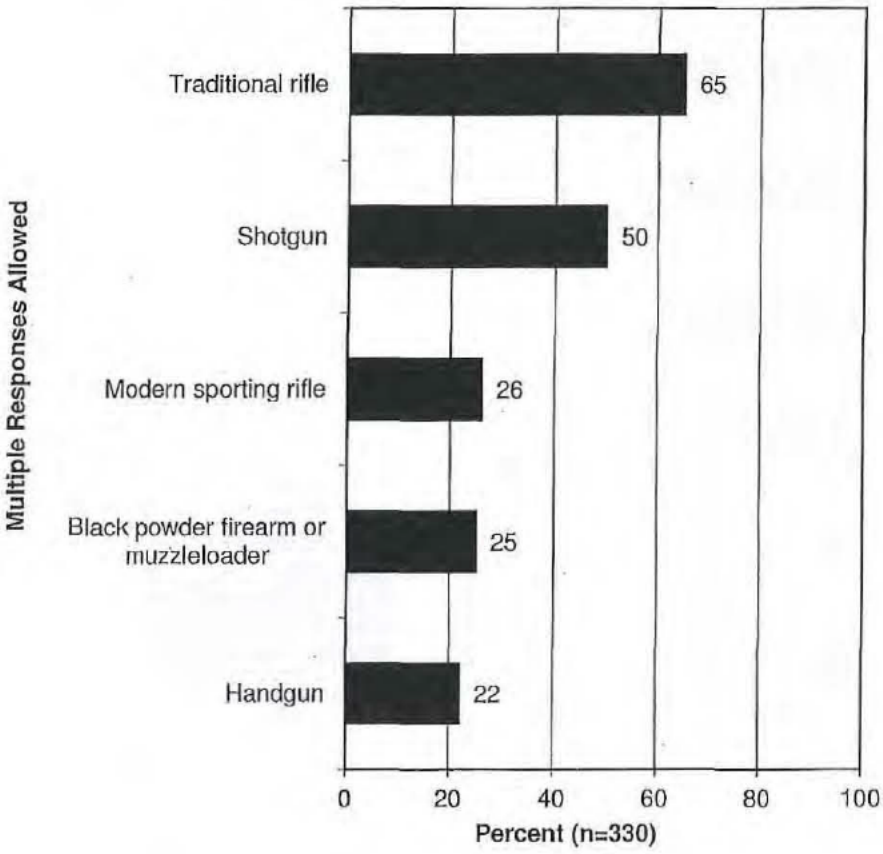
TYPES OF FIREARMS USED IN TARGET OR SPORT SHOOTING AND HUNTING

The graph below shows the percentages of target or sport shooters using various types of firearms (in total, 21.0% of all U.S. residents went target or sport shooting). Handguns and traditional rifles top the list. For each of these types, a majority of those who go target or sport shooting use it.



The survey also asked those who hunted to indicate the various firearms or equipment they used while hunting in 2016. Among *firearm hunters*, traditional rifles and shotguns top the list (65% and 50%, respectively), and about a quarter of firearm hunters use modern sporting rifles, black powder firearms, and handguns as part of their hunting (all within the range of 22% to 26%).

Please indicate which of the following you used for hunting in 2016. What about...? (Asked of those who went hunting with firearms in 2016.)



LIKELIHOOD TO GO TARGET OR SPORT SHOOTING IN THE FUTURE

A little over a quarter of those who did *not* go target or sport shooting in 2016 show some interest in target or sport shooting, with 28% saying either that they are *very* likely or *somewhat* likely to participate in target or sport shooting in the following 2 years. Demographic analyses compare those who say that they are *very* likely to those who are *not at all* likely, thereby giving a little insight into these people.

The crosstabulations are first analyzed among those who did *not* go shooting in 2016. This looks at those who said that they are *very* likely to go shooting, and then it looks at those who said that they are *not at all likely* as a baseline.

Among those who did not go shooting in 2016, men show a little more interest in target/sport shooting. Men make up 53% of those *very* likely to shoot but only 40% of those *not at all* likely to shoot in the next 2 years (note that this is among non-shooters in 2016). Young and middle-aged people have a greater propensity to say that they are likely to go target/sport shooting in the next 2 years. Rural people are positively correlated with being likely to go shooting in the next two years. Regionally, the South shows a slightly greater percentage in the very-likely-to-shoot category (40%) than in the not-likely category (37%); in the Northeast, the situation is reversed, with 13% of those likely to shoot being from the Northeast, but 20% of those *not* likely to go shooting being from the Northeast.

Note that the above looked at those who had *not* participated in target or sport shooting in 2016. Those who *had* participated in 2016 were also asked the same question about likelihood to participate in the coming 2 years. Of 2016 sport shooting participants, 59% are *very* likely to go sport shooting in the following 2 years, and 20% are *somewhat* likely (a sum of 79% who plan to continue in the sport). The same demographic analyses were run comparing those who are *very* likely to those who are *not at all* likely (again ignoring the *somewhat* likely).

The gender crosstabulations found that males are associated with being *very* likely to go shooting in the next 2 years. The finding from the age analysis is that those 2016 shooters who plan to continue shooting are about the same ages as those 2016 shooters who do not plan to continue shooting. The place-of-residence crosstabulation finds only small differences, but it suggests that those from the large urban areas and small cities/towns are at a *higher* likelihood to continue shooting. Finally, the regional crosstabulation finds the Midwest and West positively associated with being *very* likely to shoot in the next 2 years (these results are among those who shot in 2016).

NON-TRADITIONAL SHOOTERS

Seven characteristics were chosen as the parameters for identifying a non-traditional shooter. Each variable was made to be dichotomous: a variable had either a traditional or non-traditional side. Most of these characteristics were based on a single survey question, but two characteristics were based on the results of multiple questions. The characteristics and the question responses on which they are based are shown in the tabulation that follows.

Non-Traditional Characteristic	Question Used as Basis
Not growing up in a household with a firearm that was actively used at least two times per year	When you were growing up, did your family own any firearms?
	(IF YES) When you were growing up, about how many times per year did someone in your family use the firearm for target shooting?
Did not shoot until an adult	How old were you when you first went target shooting?
First experienced shooting with a handgun or a modern sporting rifle	Which of the following firearms did you use when you first learned how to target shoot?
Not mentored by a father or other close male relative	Did you have a person or group who taught you how to shoot?
	(IF YES): Who or which group taught you?
Ethnically non-white	What races or ethnic backgrounds do you consider yourself? Please mention all that apply.
Female	Observe and record respondent's gender.
Urban/suburban	Do you consider your place of residence to be a large city or urban area, a suburban area, a small city or town, a rural area on a farm or ranch, or a rural area NOT on a farm or ranch?

For the purposes of this analysis, a respondent was non-traditional if four of the seven characteristics were non-traditional—in other words, if more than half of the characteristics were in the non-traditional side of the dichotomy. In the sample of shooters, 30.2% had at least four of the seven variables in the non-traditional side; 69.8% of shooters were considered traditional. These two groups (traditional and non-traditional shooters) were then crosstabulated by region, by their reasons for shooting, by what shooting activities they did, by the types of firearms they shot, and by the number of days that they shot in various activities.

The data showed, to put it succinctly, that non-traditional shooters are associated with shooting handguns at indoor ranges for self-defense practice.

Regionally, the West and the Northeast have the highest percentage of shooters being considered non-traditional.

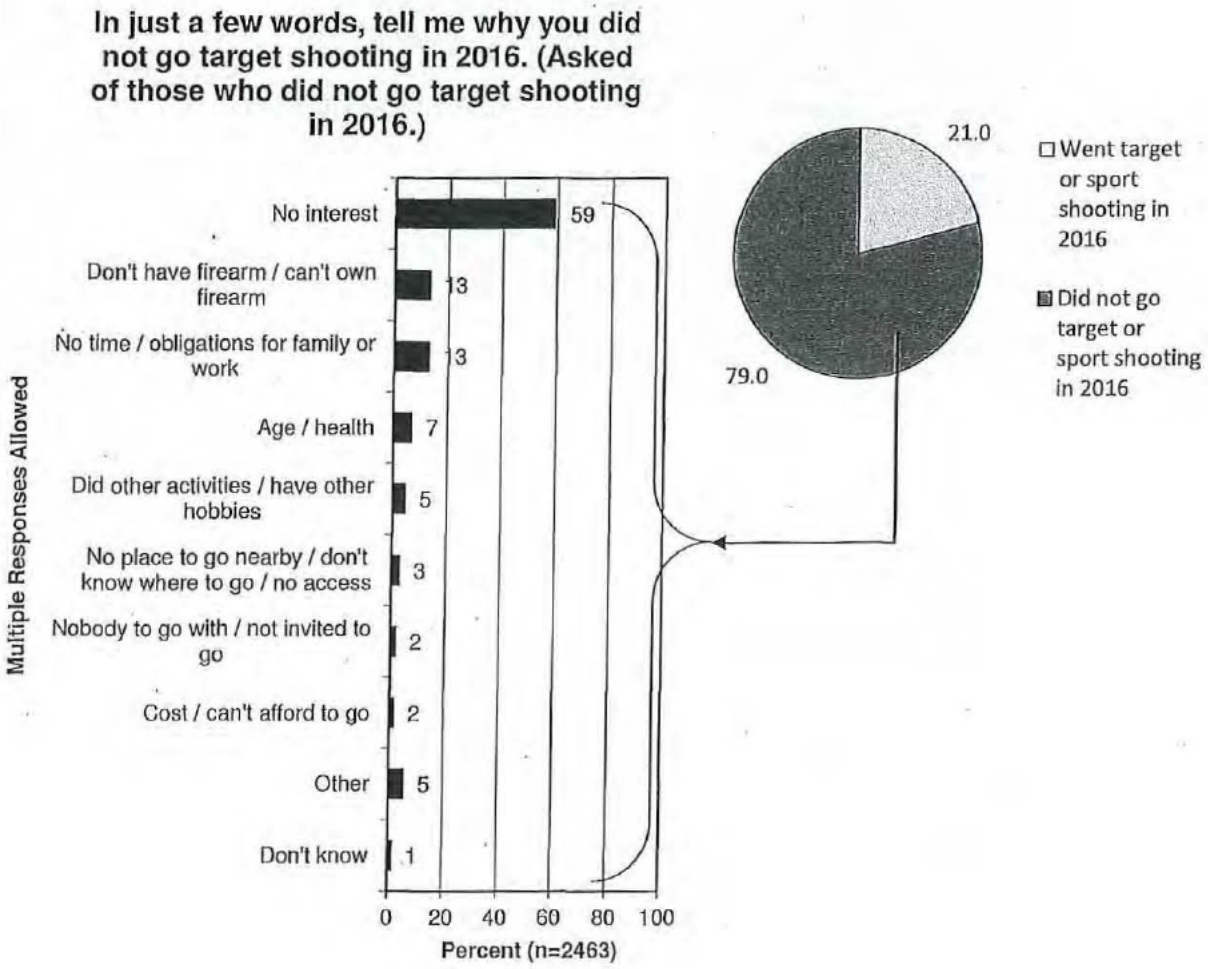
For each possible reason to shoot, non-traditional shooters think it less important than do traditional shooters with one important exception: shooting for self-defense practice, which 60% of non-traditional shooters but only 54% of traditional shooters consider to be a *very* important reason to go shooting. On most other reasons, the groups are switched, with the traditional shooters having a higher percentage thinking it to be *very* important, in particular, preparing for hunting (25% of non-traditional shooters think this is *very* important, compared to 51% of traditional shooter) and mentoring another shooter (23% to 42%, respectively).

Regarding the types of activities, 78% of non-traditional shooters say that in 2016 they went target shooting with a handgun; only 63% of traditional shooters did this. Also, regarding target shooting at an indoor range, 49% of non-traditional shooters did this, compared to 23% of traditional shooters. For every other activity, traditional shooters had the greater percentage doing it.

Regarding types of firearms, only handgun has a higher rate of use among non-traditional shooters (74% of non-traditional shooters, compared to 63% of traditional shooters). Perhaps the largest difference the other way is shotguns: only 27% of non-traditional shooters used them in 2016, compared to 51% of traditional shooters.

REASONS FOR NOT PARTICIPATING IN TARGET OR SPORT SHOOTING

The survey asked those who did not participate in target/sport shooting for their reasons for not doing so (79.0% of U.S. residents did not go target or sport shooting in 2016). While simple lack of interest is, by far, the top reason (59% of those who did not target or sport shoot), other important reasons include lacking a firearm (13%), lack of time because of family or work obligations (13%), and age/health (7%).



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INTRODUCTION AND METHODOLOGY

This report about sport shooting participation in 2016 is the latest in a series of studies conducted for the National Shooting Sports Foundation (NSSF) about this topic. Earlier studies were conducted in 2009, 2012, and 2014. These studies determined the regional and national participation rates in target shooting and sport shooting. As with the previous studies, this one entailed a telephone survey of U.S. residents ages 18 years old and older. Specific aspects of the research methodology are discussed below.

USE OF TELEPHONES FOR THE SURVEY

For the survey, telephones were selected as the preferred sampling medium because of the almost universal ownership of telephones, particularly with the coverage provided by dual-frame samples that include both cell phones and landlines. Additionally, telephone surveys, relative to mail or Internet surveys, allow for more scientific sampling and data collection, provide higher quality data, obtain higher response rates, are more timely, and are more cost-effective. Telephone surveys also have fewer negative effects on the environment than do mail surveys because of reduced use of paper and reduced energy consumption for delivering and returning the questionnaires.

QUESTIONNAIRE DESIGN

The NSSF and Responsive Management developed the survey questionnaire cooperatively, based in part on the previous surveys. As in those previous surveys on sport shooting participation, the survey used a "ruse" line of questioning at the beginning of the survey. This was done because the main objective of the survey was to determine national and regional participation rates in the shooting sports, and the survey was worded to avoid bias that would arise from the tendency for those who do *not* shoot to refuse to participate in a survey about shooting. Therefore, the survey starts by asking about some general activities, mixing shooting and hunting participation in with participation in other non-shooting activities. Responsive Management conducted pre-tests of the questionnaire to ensure proper wording, flow, and logic in the survey.

SURVEY SAMPLE

The methodology used a dual-frame sample, which consisted of a random sample of landline telephones and a random sample of cell phone numbers, called in their proper proportions, which ensures that all people in the pool of telephone users have an approximately equal chance of being called. The scientific sampling plan entailed obtaining a target number of interviews in each state, from both landlines and cell phones in their proper proportions, so that the number of respondents in each state in the sample would be proportional to the state's population and, by extension, within the United States population as a whole.

The sample was obtained from Survey Sampling International, a company that specializes in providing scientifically valid telephone survey samples. The overall sample with landlines and cell phones was representative of all Americans 18 years old and older.

TELEPHONE INTERVIEWING FACILITIES

A central polling location in Harrisonburg, Virginia, allowed for rigorous quality control over the interviews and data collection. Responsive Management maintains its own in-house telephone interviewing facilities. These facilities are staffed by interviewers with experience conducting computer-assisted telephone interviews on the subjects of outdoor recreation and natural resources.

Responsive Management has interviewers who have been trained according to the standards established by the Council of American Survey Research Organizations, thereby ensuring the integrity of the telephone survey data. Instruction methods included lecture and role-playing. The Survey Center Managers and Research Associates conducted project briefings with the interviewers prior to the administration of this survey, instructing them on study goals and objectives, handling of survey questions, qualifiers for participation, interviewer instructions within the survey instrument, reading of the survey instrument, skip patterns, and probing and clarifying techniques necessary for specific questions on the survey instrument.

For this survey, interviewers fluent in Spanish conducted interviews with respondents who had previously been called but could not take the survey in English. Those respondents were put on a callback list and were called by interviewers fluent in Spanish.

INTERVIEWING DATES AND TIMES

Survey calling times are Monday through Friday from 9:00 a.m. to 9:00 p.m., Saturday from noon to 5:00 p.m., and Sunday from 5:00 p.m. to 9:00 p.m., local time. A five-callback design was used to maintain the representativeness of the sample, to avoid bias toward people easy to reach by telephone, and to provide an equal opportunity for all to participate. When a respondent could not be reached on the first call, subsequent calls were placed on different days of the week and at different times of the day. The survey was conducted in January 2017. Responsive Management obtained 3,050 completed interviews overall.

TELEPHONE SURVEY DATA COLLECTION AND QUALITY CONTROL

The software used for data collection was Questionnaire Programming Language (QPL). The survey data were entered into the computer as each interview was being conducted, eliminating manual data entry after the completion of the survey and the concomitant data entry errors that may occur with manual data entry. The survey questionnaire was programmed so that QPL branched, coded, and substituted phrases in the survey based on previous responses to ensure the integrity and consistency of the data collection. (Note that QPL only directs which computer screen comes up; a live interviewer still conducts the survey and enters the responses.)

The Survey Center Managers and statisticians monitored the data collection, including monitoring of the actual telephone interviews without the interviewers' knowledge, to evaluate the performance of each interviewer and ensure the integrity of the data. The survey questionnaire itself contained error checkers and computation statements to ensure quality and consistent data. After the surveys were obtained by the interviewers, the Survey Center Managers and/or statisticians checked each completed survey to ensure clarity and completeness.

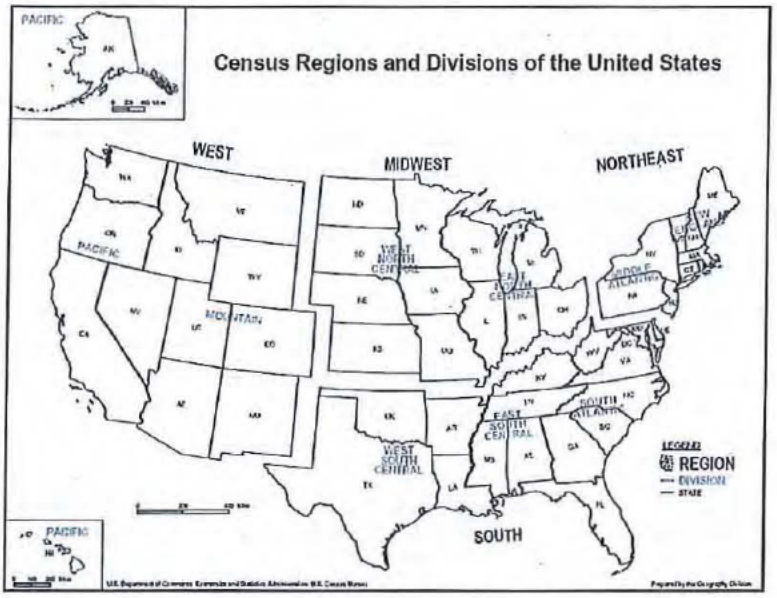
DATA ANALYSIS

The analysis of data was performed using IBM Statistical Package for the Social Sciences as well as proprietary software developed by Responsive Management. There were set goals for the numbers of interviews in each state. In the raw data, the demographic breakdown of the resulting sample was very close to the reported demographic breakdown of the population as a whole in each state, according to U.S. Census data. However, the results were slightly weighted by age and gender to be exactly proportional to the total population of each region (U.S. Census Bureau regions, which are those also used by the U.S. Fish and Wildlife Service) and of the United States as a whole.

In the analysis, each state was sampled proportionately to preserve proper distribution within each region and in the U.S. as a whole; the analysis was conducted on a regional basis and on the U.S. as a whole, but not at the state level. The number of completed interviews from each state is shown in the tabulation below:

State of Residence	Completed Interviews	State of Residence	Completed Interviews	State of Residence	Completed Interviews
Alabama	46	Louisiana	47	Ohio	112
Alaska	11	Maine	14	Oklahoma	36
Arizona	63	Maryland	56	Oregon	47
Arkansas	30	Massachusetts	67	Pennsylvania	127
California	359	Michigan	96	Rhode Island	10
Colorado	49	Minnesota	53	South Carolina	47
Connecticut	37	Mississippi	29	South Dakota	9
Delaware	8	Missouri	59	Tennessee	63
Florida	192	Montana	10	Texas	235
Georgia	93	Nebraska	18	Utah	27
Hawaii	15	Nevada	26	Vermont	7
Idaho	14	New Hampshire	14	Virginia	81
Illinois	127	New Jersey	78	Washington	66
Indiana	62	New Mexico	20	West Virginia	18
Iowa	30	New York	197	Wisconsin	56
Kansas	28	North Carolina	95	Wyoming	6
Kentucky	42	North Dakota	10	Washington D.C.	8
				TOTAL	3,050

As mentioned, the states were grouped into regions to aid in comparison and analysis. The four main U.S. Census Bureau regions were used, as shown on the map on the following page from the U.S. Census Bureau website.



SAMPLING ERROR

Throughout this report, findings of the telephone survey are reported at a 95% confidence interval. For the entire sample, the sampling error is at most plus or minus 1.77 percentage points. This means that if the survey were conducted 100 times on different samples that were selected in the same way, the findings of 95 out of the 100 surveys would fall within plus or minus 1.77 percentage points of each other. Sampling error was calculated using the formula described below, with a sample size of 3,050 and a population size of 245,576,910 United States residents 18 years old and older.

Sampling Error Equation

$$B = \left(\sqrt{\frac{\frac{N_p(.25)}{N_s} - .25}{N_p - 1}} \right) (1.96)$$

Where: B = maximum sampling error (as decimal)
N_p = population size (i.e., total number who could be surveyed)
N_S = sample size (i.e., total number of respondents surveyed)

Derived from formula: p. 206 in Dillman, D. A. 2000. *Mail and Internet Surveys*. John Wiley & Sons, NY.

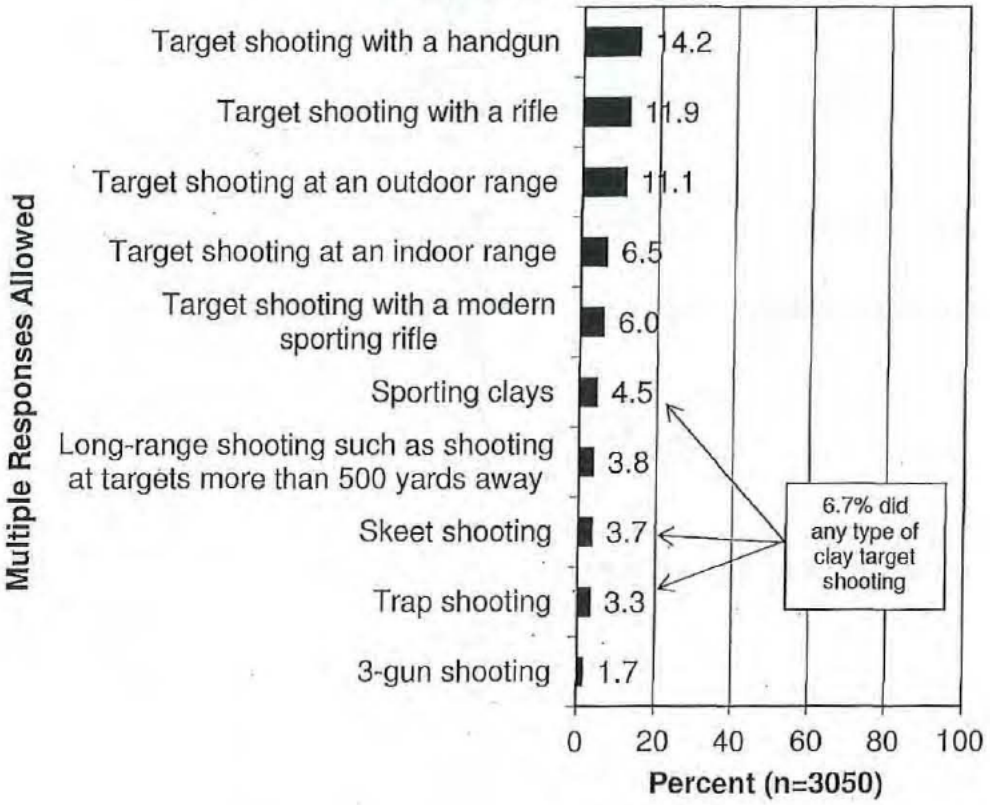
Note: This is a simplified version of the formula that calculates the maximum sampling error using a 50:50 split (the most conservative calculation because a 50:50 split would give maximum variation).

SURVEY RESULTS

PARTICIPATION IN TARGET AND SPORT SHOOTING

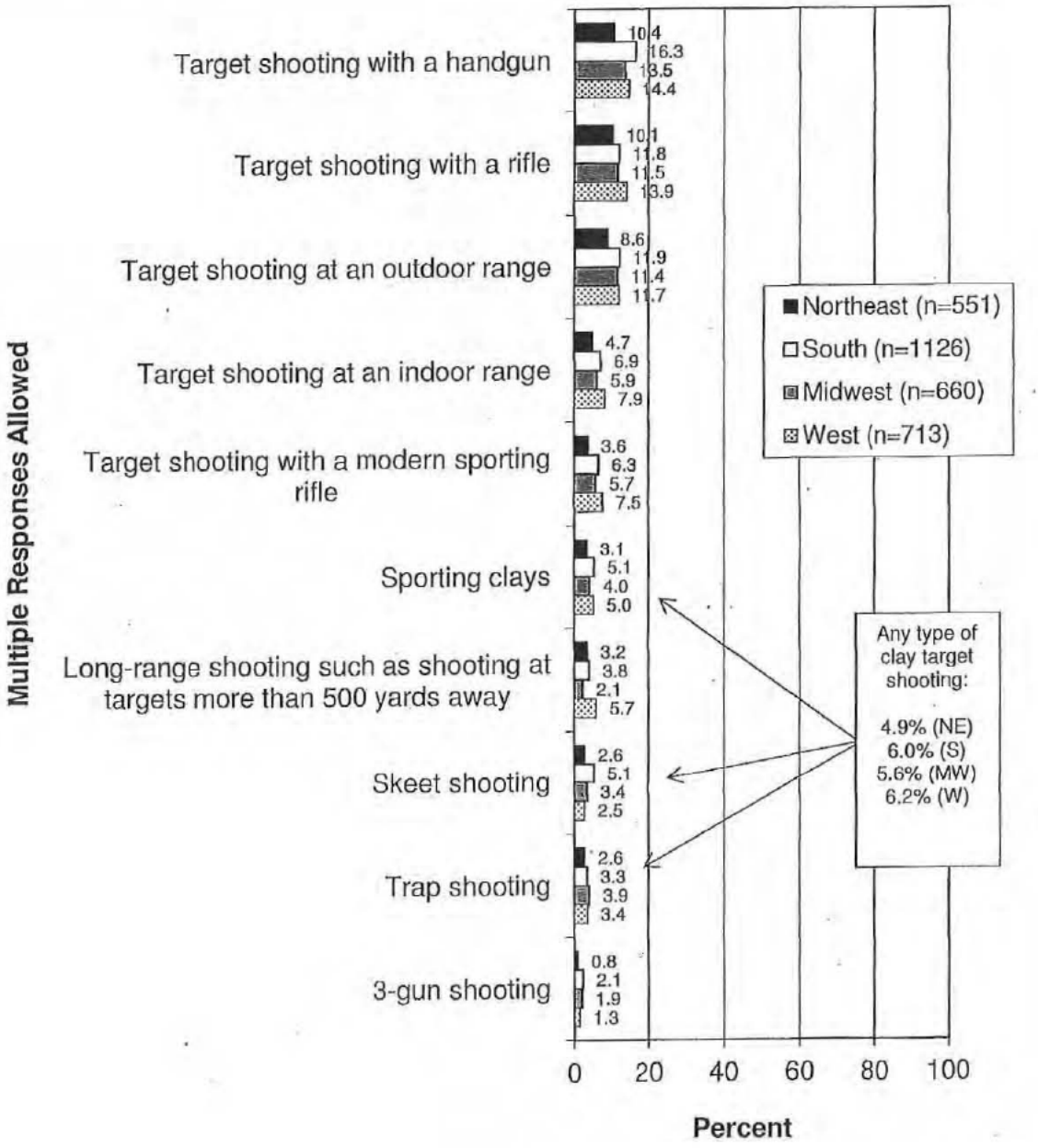
The 2016 rate of target/sport shooting participation was 21.0% of the U.S. adult population, which means an estimated 49.4 million adults participated in any type of target or sport shooting last year. As shown in the graph that follows, the most popular types were target shooting with a handgun (14.2% participated), target shooting with a rifle (11.9%), and target shooting at an outdoor range (11.1%). Note that respondents could have done more than one shooting activity. The actual numbers of participants are tabulated following the regional graphs.

Percentage of adult U.S. residents participating in the following sport shooting activities in 2016.



The graph below compares the regions on this question, followed by an individual graph for each region with the activities ranked from highest to lowest participation in each region.

Percentage of adult U.S. residents participating in the following sport shooting activities in 2016.



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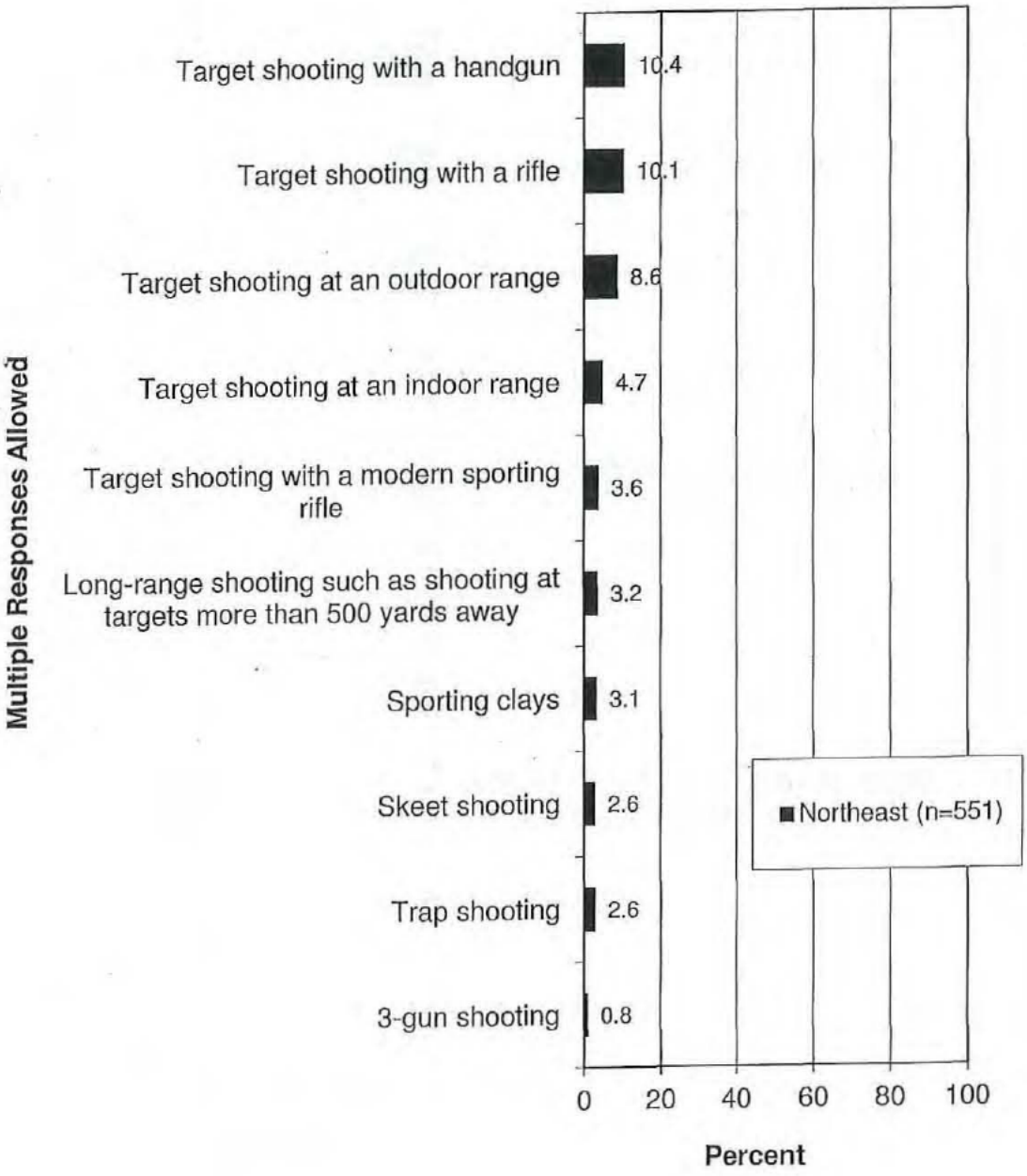

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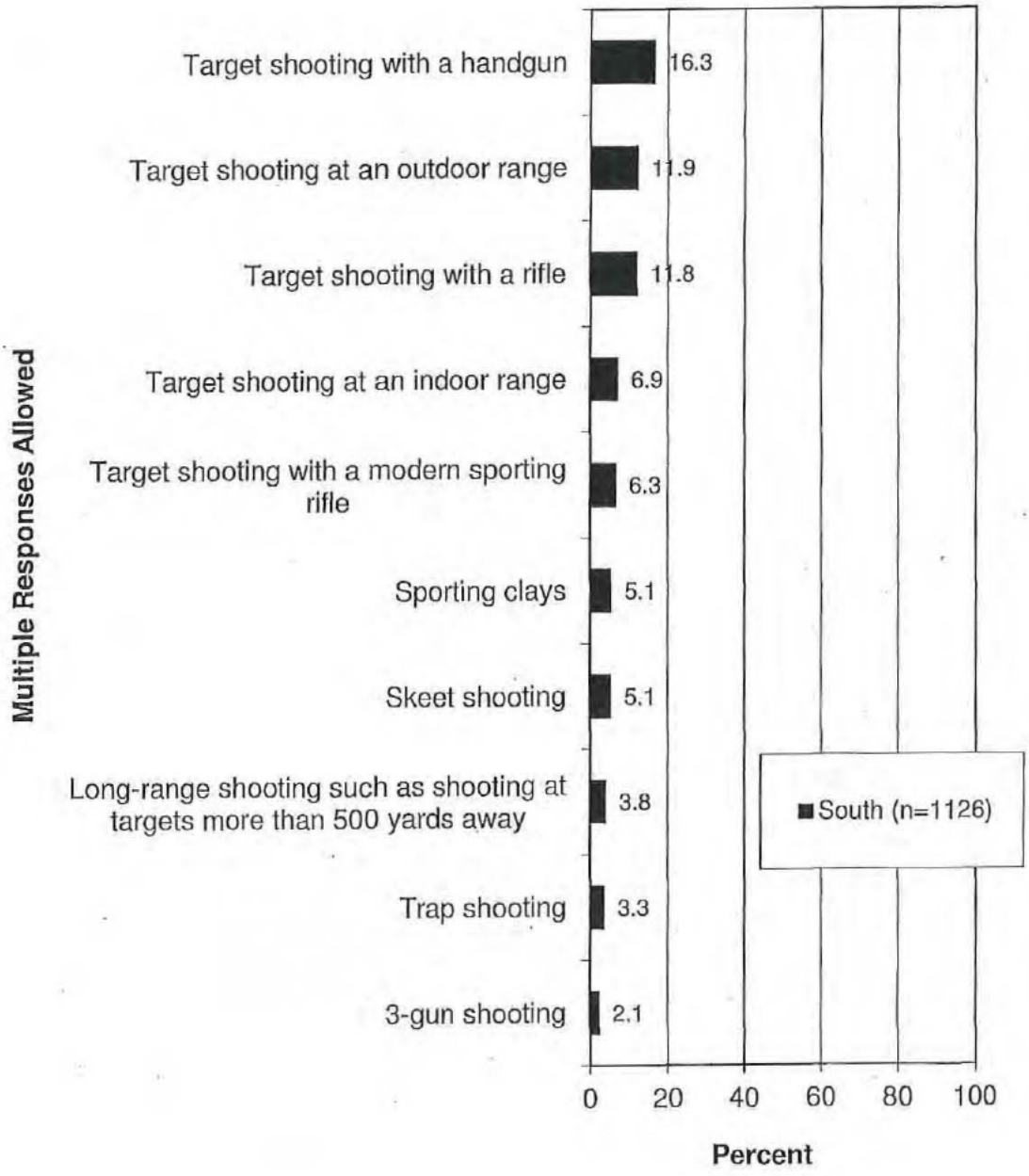

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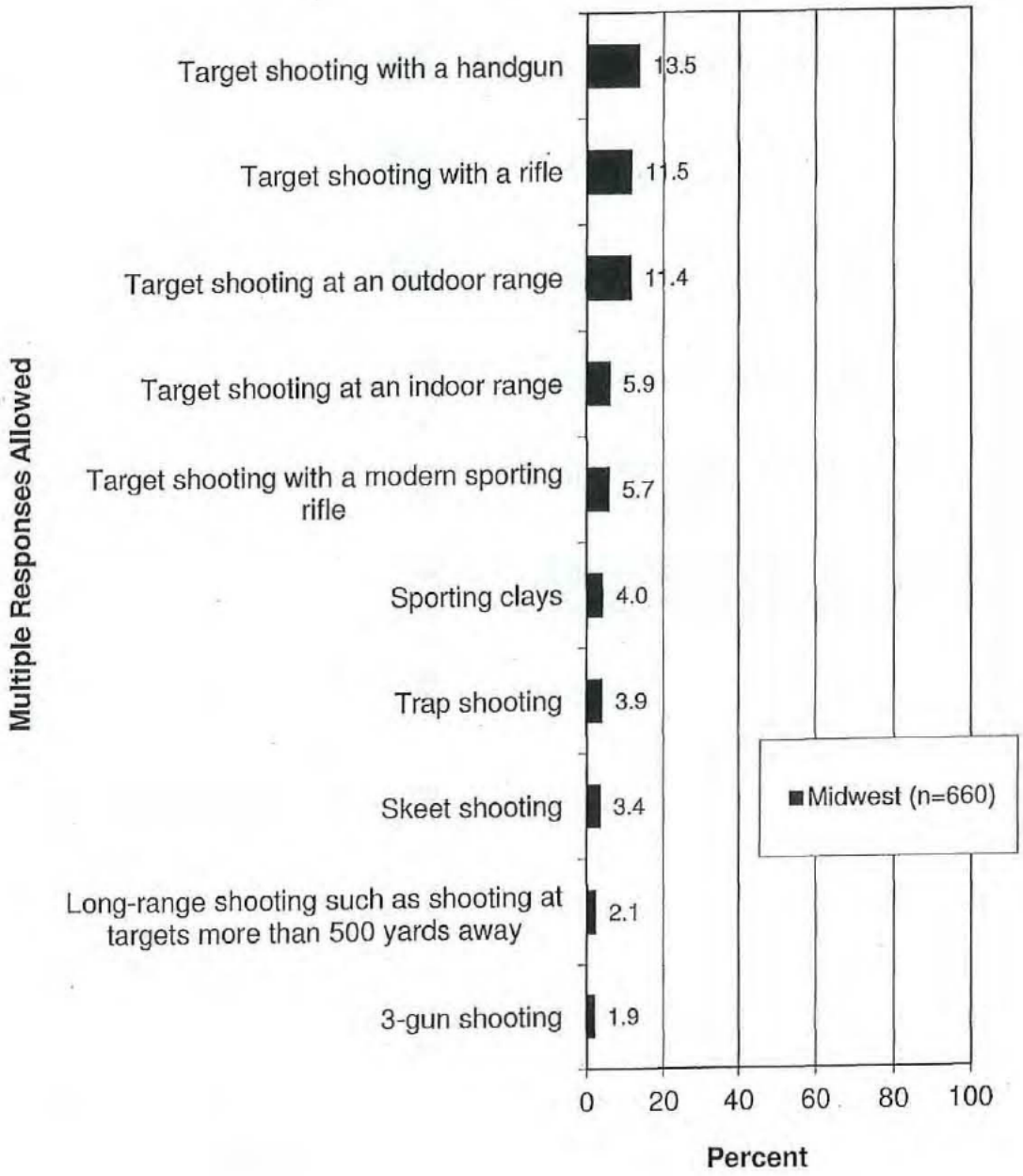

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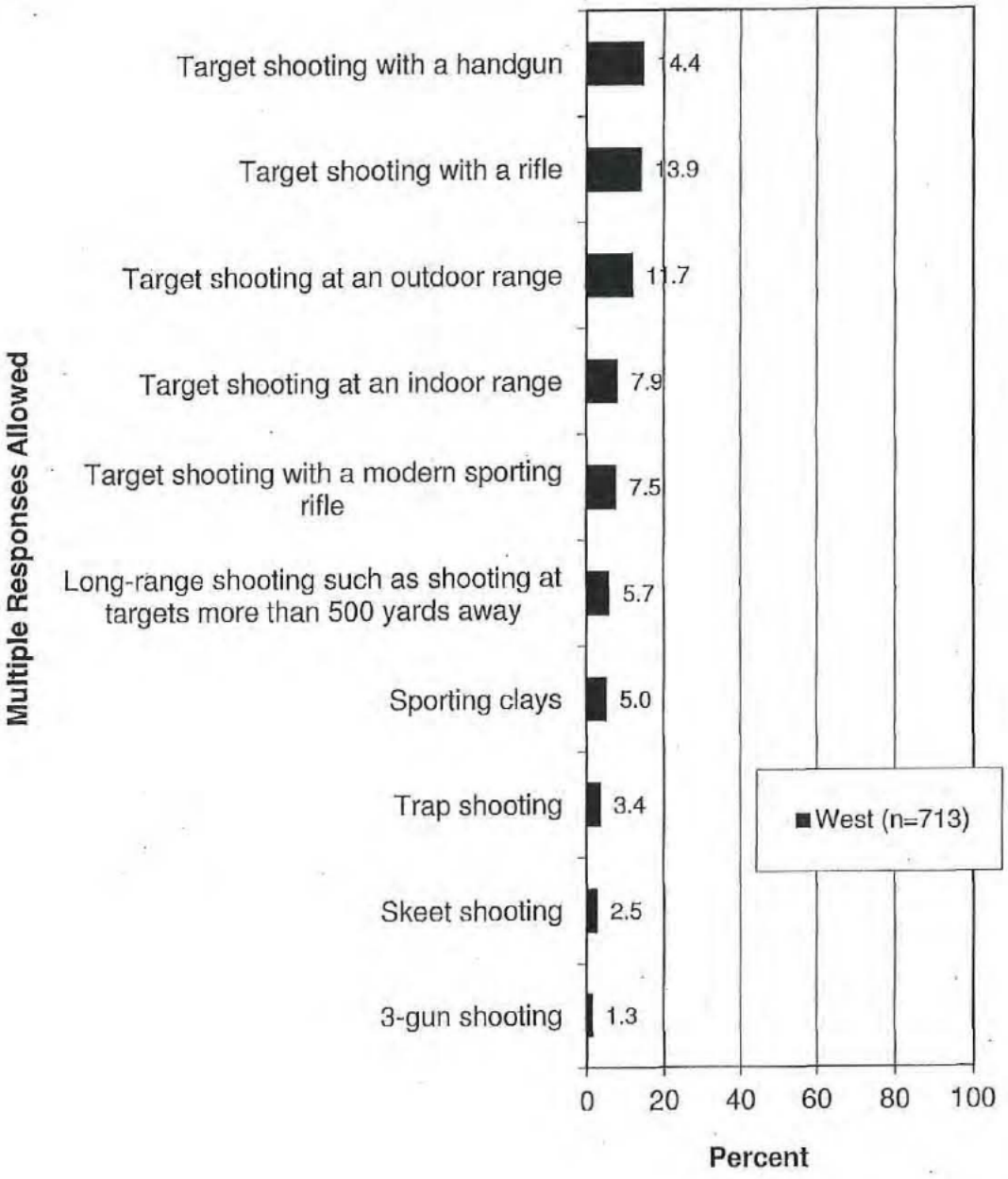


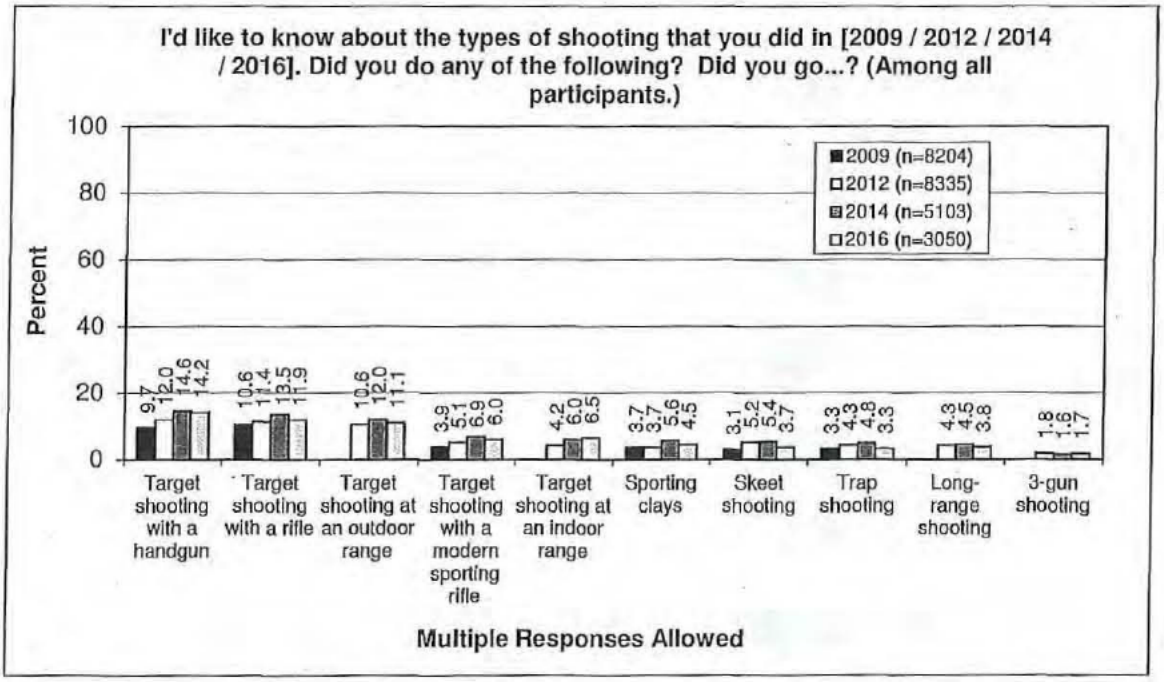
The tabulation below shows estimates of numbers of participants nationally and by region.

Activity	Estimated Total Participants (ages 18 years and older)	95% Confidence Interval	
		Lower Limit	Upper Limit
National			
Any target shooting or sport shooting	**49,361,637**	**45,967,765**	**52,755,509**
Target shooting with a handgun	33,276,976	30,371,902	36,182,051
Target shooting with a rifle	27,949,753	25,252,346	30,647,161
Target shooting at an outdoor range	26,148,339	23,527,956	28,768,721
Target shooting at an indoor range	15,306,421	13,250,097	17,362,745
Target shooting with a modern sporting rifle	13,986,528	12,014,954	15,958,101
Sporting clays	10,545,394	8,820,148	12,270,639
Long-range shooting	8,881,155	7,292,018	10,470,293
Skeet shooting	8,626,450	7,059,382	10,193,517
Trap shooting	7,855,875	6,357,887	9,353,862
3-gun shooting	3,902,990	2,837,956	4,968,023
Any clays (sporting clays, skeet, trap)	15,792,273	13,705,884	17,878,663
Northeast Region			
Any target shooting or sport shooting	**7,210,248**	**5,861,859**	**8,558,638**
Target shooting with a handgun	4,456,524	3,356,401	5,556,648
Target shooting with a rifle	4,343,607	3,255,919	5,431,294
Target shooting at an outdoor range	3,690,573	2,679,541	4,701,605
Target shooting at an indoor range	2,027,832	1,262,705	2,792,960
Target shooting with a modern sporting rifle	1,531,467	862,527	2,200,408
Sporting clays	1,353,992	723,660	1,984,324
Long-range shooting	1,394,692	755,269	2,034,115
Skeet shooting	1,127,304	550,589	1,704,018
Trap shooting	1,119,532	544,756	1,694,309
3-gun shooting	339,670	20,136	659,204
Any clays (sporting clays, skeet, trap)	2,283,201	1,473,860	3,092,542
South Region			
Any target shooting or sport shooting	**19,436,287**	**17,338,139**	**21,534,435**
Target shooting with a handgun	14,118,969	12,261,437	15,976,501
Target shooting with a rifle	10,244,097	8,620,211	11,867,983
Target shooting at an outdoor range	10,298,927	8,671,285	11,926,569
Target shooting at an indoor range	5,951,157	4,679,202	7,223,113
Target shooting with a modern sporting rifle	5,497,596	4,271,646	6,723,547
Sporting clays	4,438,878	3,330,128	5,547,628
Long-range shooting	3,293,119	2,331,503	4,254,736
Skeet shooting	4,434,856	3,326,582	5,543,131
Trap shooting	2,891,160	1,987,973	3,794,346
3-gun shooting	1,862,673	1,133,289	2,592,057
Any clays (sporting clays, skeet, trap)	6,608,792	5,273,864	7,943,720

Activity	Estimated Total Participants (ages 18 years and older)	95% Confidence Interval	
		Lower Limit	Upper Limit
Midwest Region			
Any target shooting or sport shooting	**10,699,538**	**9,098,500**	**12,300,576**
Target shooting with a handgun	6,849,867	5,508,752	8,190,983
Target shooting with a rifle	5,817,914	4,567,515	7,068,313
Target shooting at an outdoor range	5,786,612	4,539,147	7,034,076
Target shooting at an indoor range	2,992,097	2,067,647	3,916,546
Target shooting with a modern sporting rifle	2,878,014	1,970,278	3,785,750
Sporting clays	2,038,978	1,268,273	2,809,683
Long-range shooting	1,087,728	519,350	1,656,107
Skeet shooting	1,712,255	1,003,630	2,420,880
Trap shooting	1,997,759	1,234,561	2,760,957
3-gun shooting	967,634	430,903	1,504,366
Any clays (sporting clays, skeet, trap)	3,272,201	2,308,284	4,236,117
West Region			
Any target shooting or sport shooting	**11,945,875**	**10,302,680**	**13,589,071**
Target shooting with a handgun	7,778,037	6,387,993	9,168,080
Target shooting with a rifle	7,500,199	6,131,113	8,869,285
Target shooting at an outdoor range	6,335,117	5,061,192	7,609,042
Target shooting at an indoor range	4,290,049	3,219,473	5,360,625
Target shooting with a modern sporting rifle	4,031,199	2,990,726	5,071,673
Sporting clays	2,681,716	1,821,703	3,541,730
Long-range shooting	3,058,909	2,143,784	3,974,035
Skeet shooting	1,333,971	719,502	1,948,440
Trap shooting	1,846,869	1,127,387	2,566,352
3-gun shooting	725,220	269,544	1,180,896
Any clays (sporting clays, skeet, trap)	3,600,641	2,613,075	4,588,207

TRENDS IN PARTICIPATION IN TARGET AND SPORT SHOOTING

The current survey is similar to surveys conducted regarding Americans' target and sport shooting activities in 2009, 2012, and 2014, to which the current survey's results are compared. The 2016 adult participation rate in target/sport shooting was 21.0%, which was an increase over the 15.1% rate among adult Americans in 2009 and the 17.4% rate in 2012, but it was slightly less than the 21.9% rate in 2014. Both items with an increase are too small to be considered marked increases: shooting at an indoor range went from 6.0% in 2014 to 6.5% in 2016 (not statistically significant), and 3-gun shooting went from 1.6% to 1.7%—essentially the same. Otherwise, in 2016 relative to 2014, there are slightly lower percentages of Americans participating in most shooting activities. The tabulation compares estimated numbers of participants; the estimated number of target/sport shooters in 2016 decreased 3.6% over the 2014 number overall.



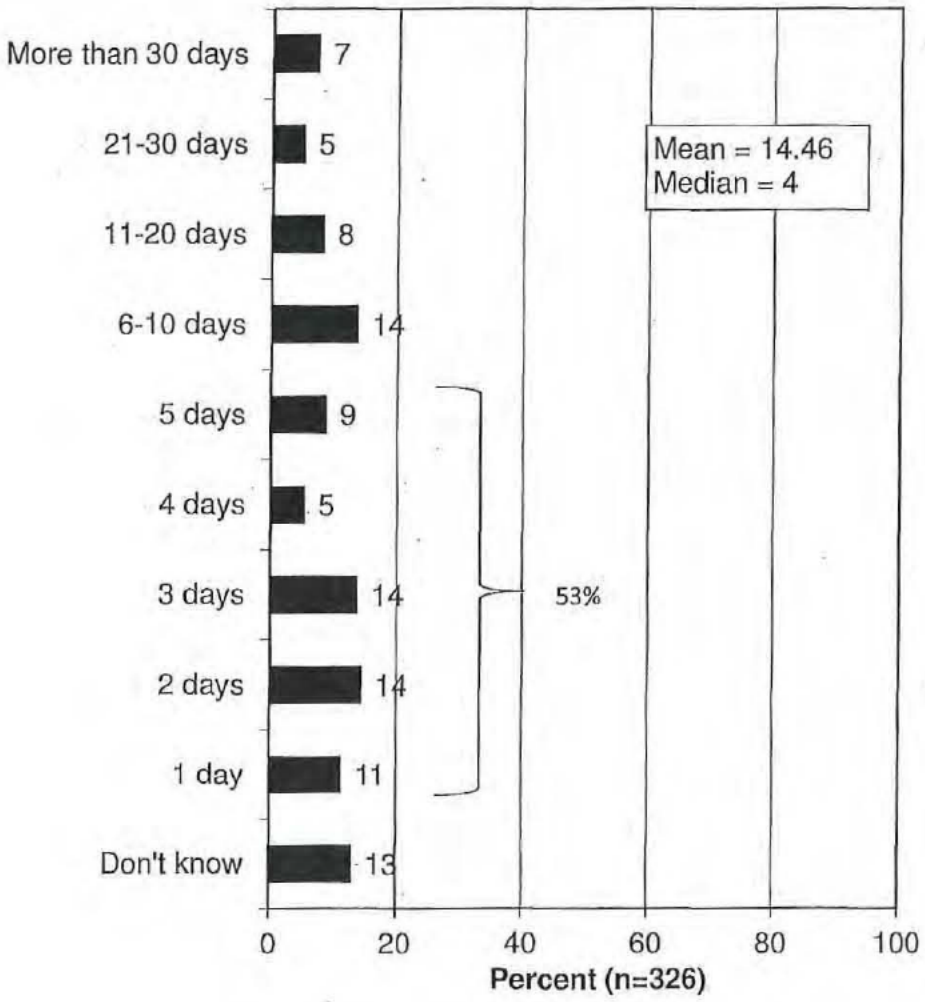
Activity	Estimated Total Participants*				% Change Compared to 2014
	in 2009	in 2012	in 2014	in 2016	
National					
Any target shooting or sport shooting	34,382,566	40,779,651	51,226,765	49,361,637	-3.6
Target shooting with a handgun	22,169,700	28,209,283	34,221,107	33,276,976	-2.8
Target shooting with a rifle	24,045,795	26,822,425	31,764,116	27,949,753	-12.0
Skeet shooting	6,979,680	12,090,346	12,596,361	8,626,450	-31.5
Target shooting with a modern sporting rifle	8,868,085	11,976,702	16,267,924	13,986,528	-14.0
Trap shooting	7,582,479	10,116,684	11,227,278	7,855,875	-30.0
Sporting clays	8,399,989	8,789,340	13,033,633	10,545,394	-19.1
Long-range shooting	na	9,972,991	10,434,630	8,881,155	-14.9
3-gun shooting	na	4,127,049	3,837,132	3,902,990	+1.7

*Ages 18 years old and older

DAYS OF PARTICIPATION IN TARGET AND SPORT SHOOTING

The survey asked about the days of participation. For each type of target or sport shooting, a graph shows the number of days of participation among those who participated. Regional graphs are also included for each activity. Following the graphs is a tabulation showing the mean and median number of days spent participating in the activities.

How many days did you target shoot with a traditional rifle, in other words a rifle with bolt or lever action, in 2016? (Asked of those who went target shooting with a traditional rifle in 2016.)



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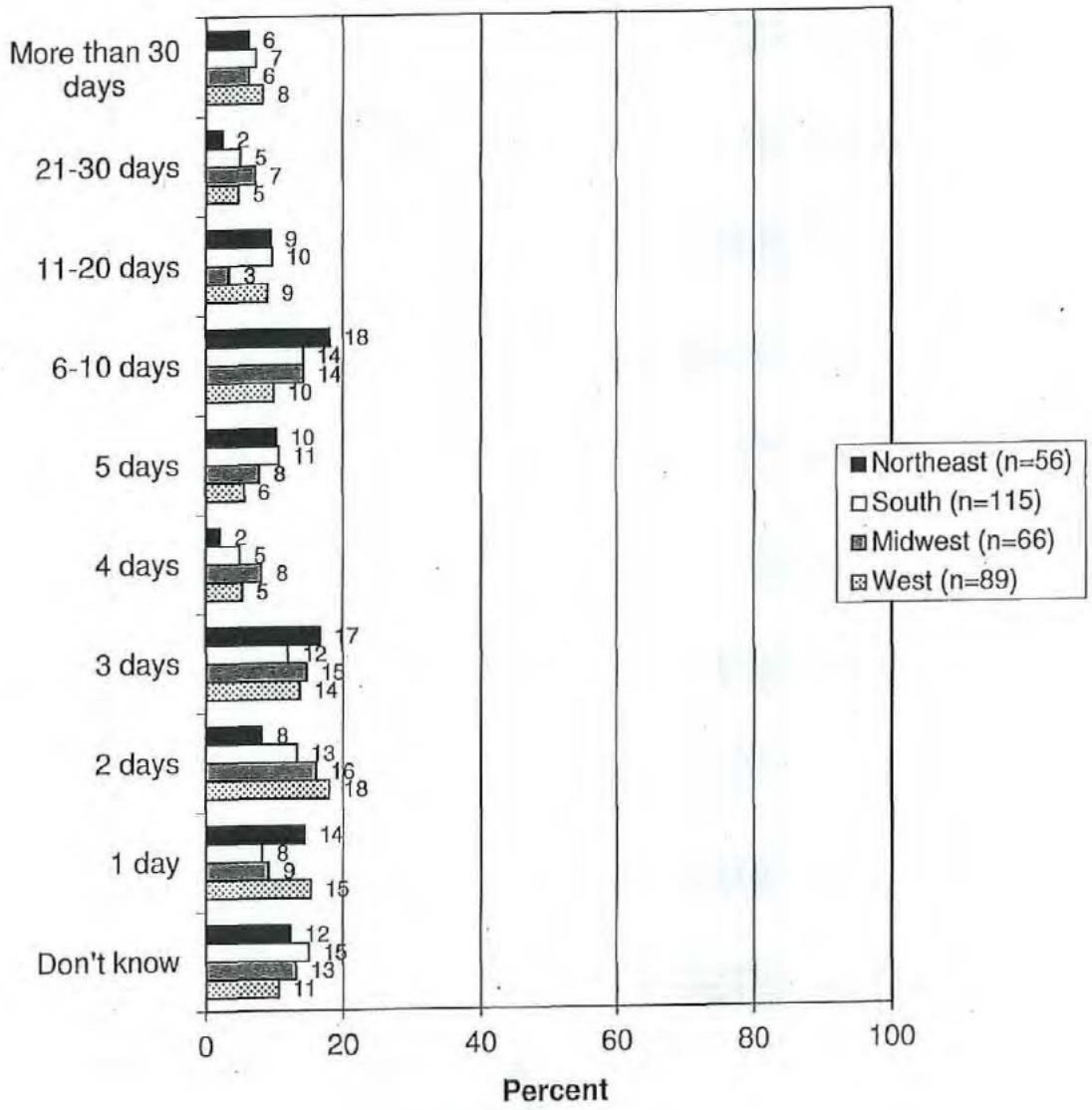
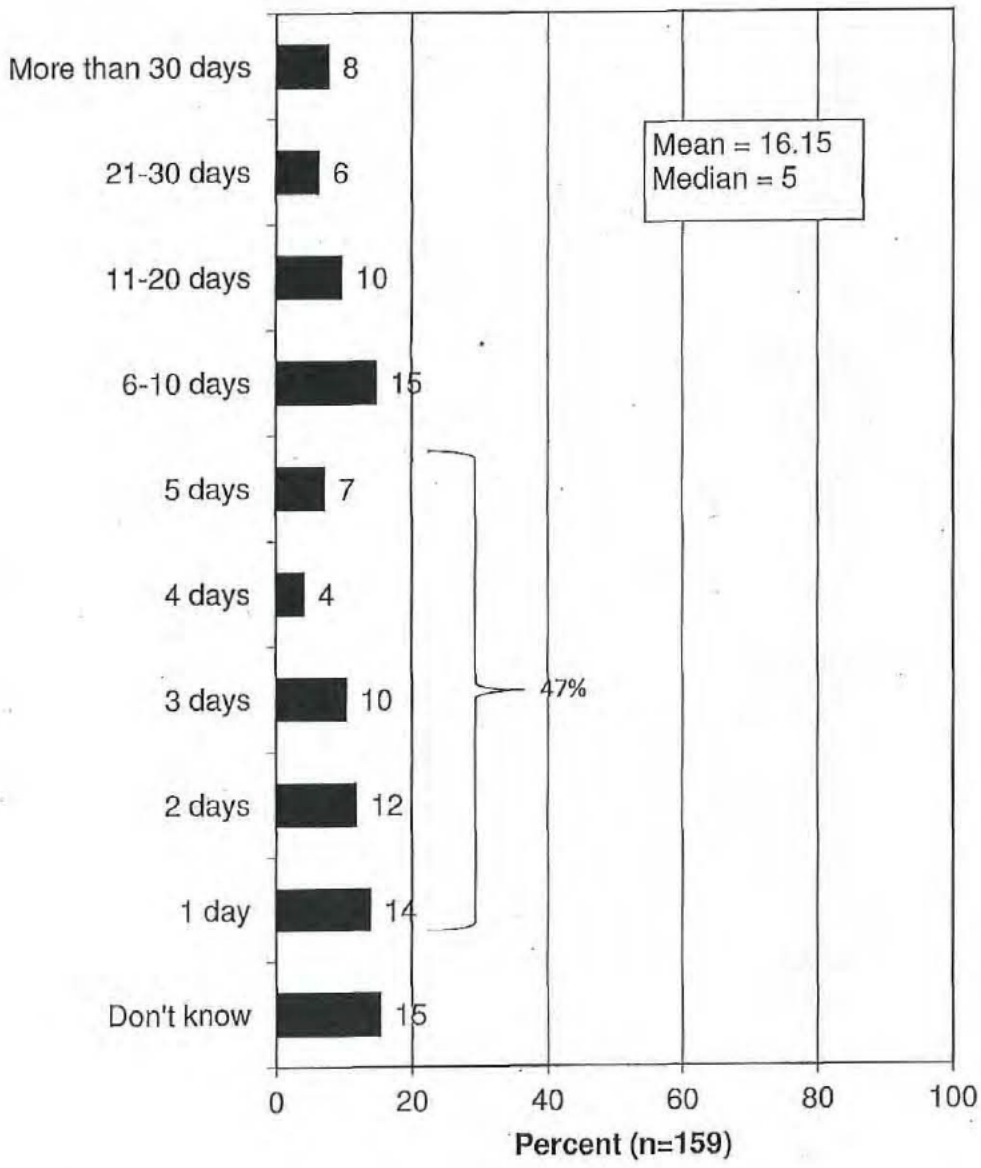
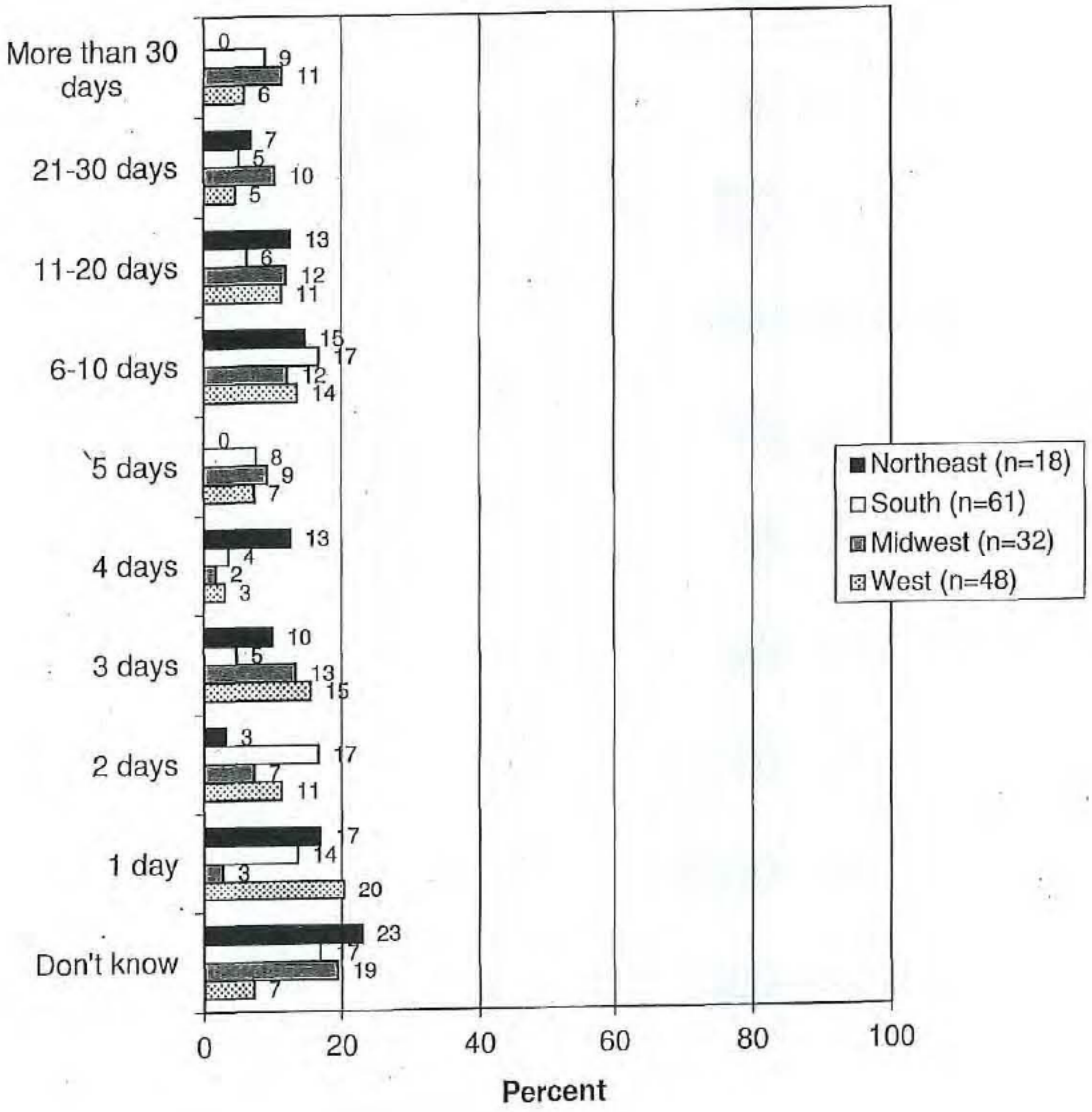


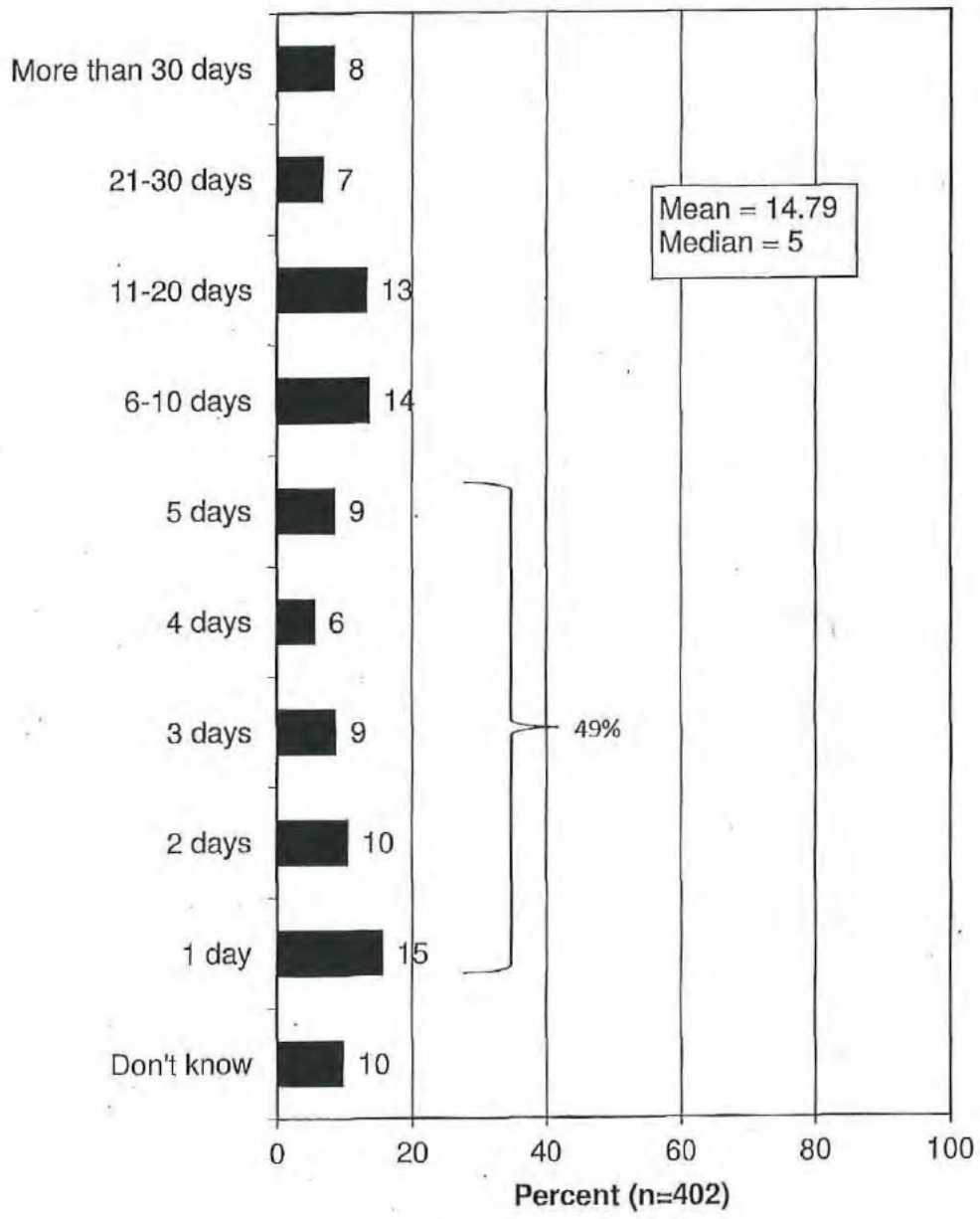
How many days did you target shoot with a modern sporting rifle in 2016? (Asked of those who went target shooting with a modern sporting rifle in 2016.)



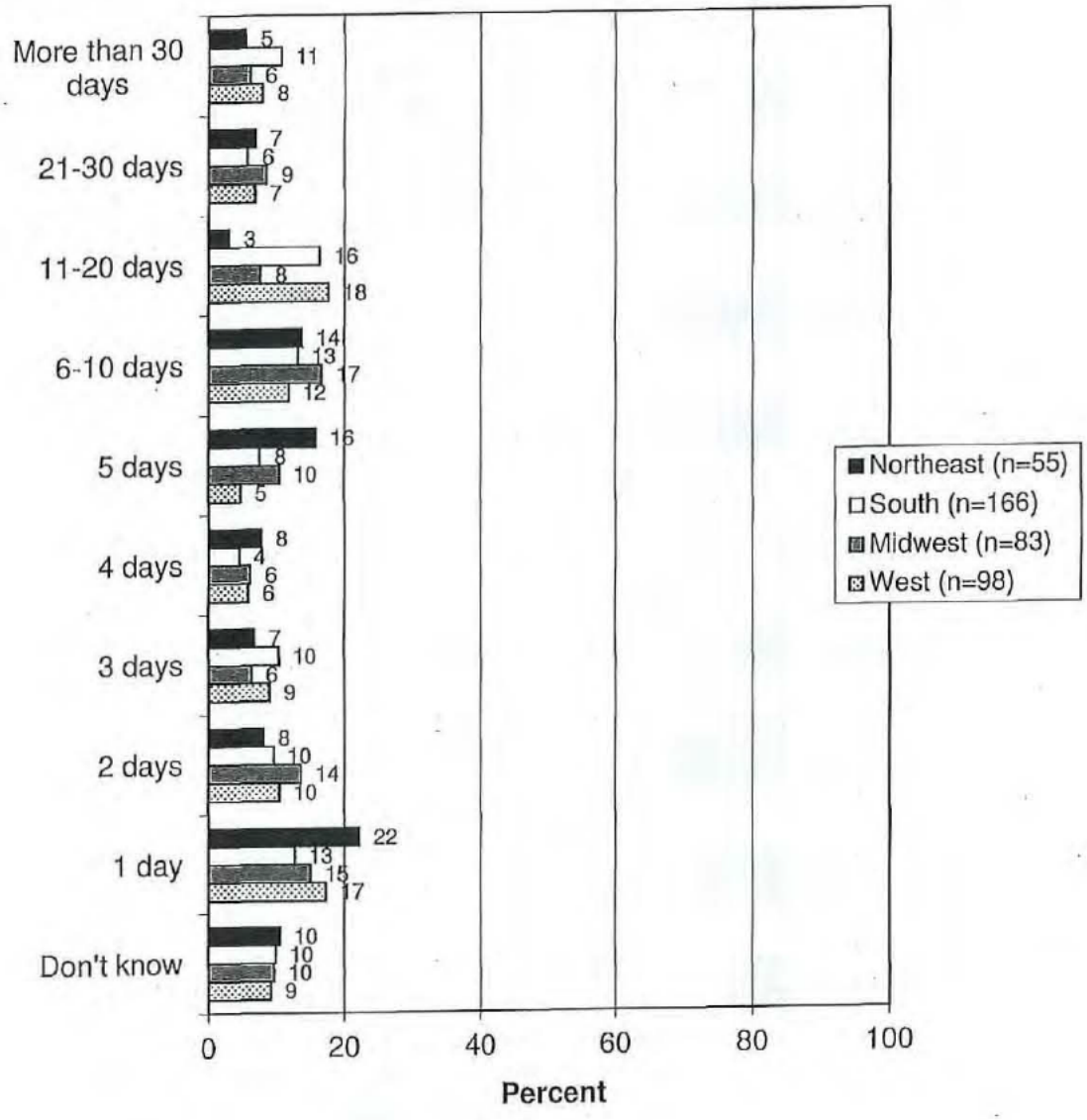
How many days did you target shoot with a modern sporting rifle in 2016? (Asked of those who went target shooting with a modern sporting rifle in 2016.)



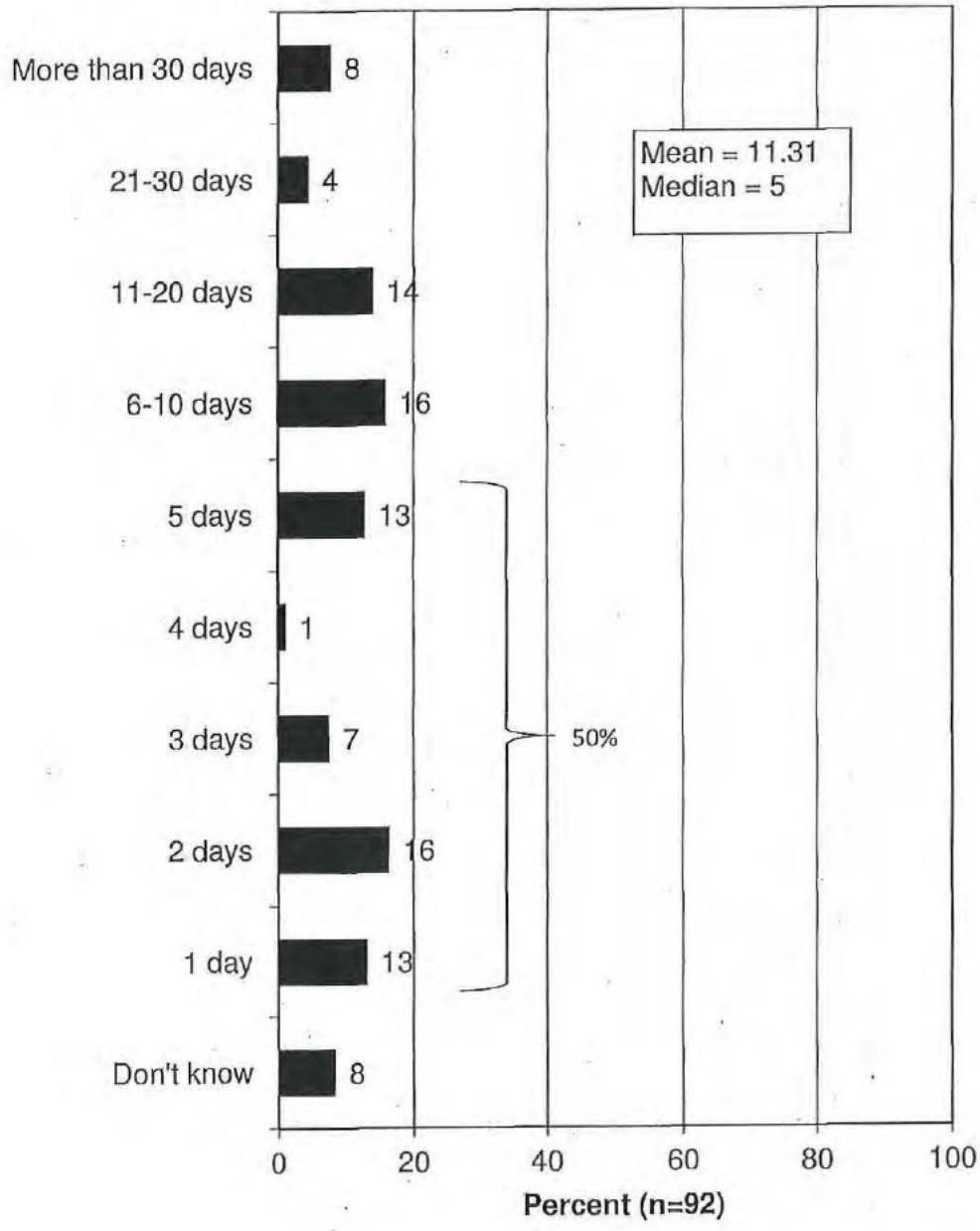
How many days did you target shoot with a handgun in 2016? (Asked of those who went target shooting with a handgun in 2016.)



How many days did you target shoot with a handgun in 2016? (Asked of those who went target shooting with a handgun in 2016.)



How many days did you trap shoot in 2016? (Asked of those who went trap shooting in 2016.)



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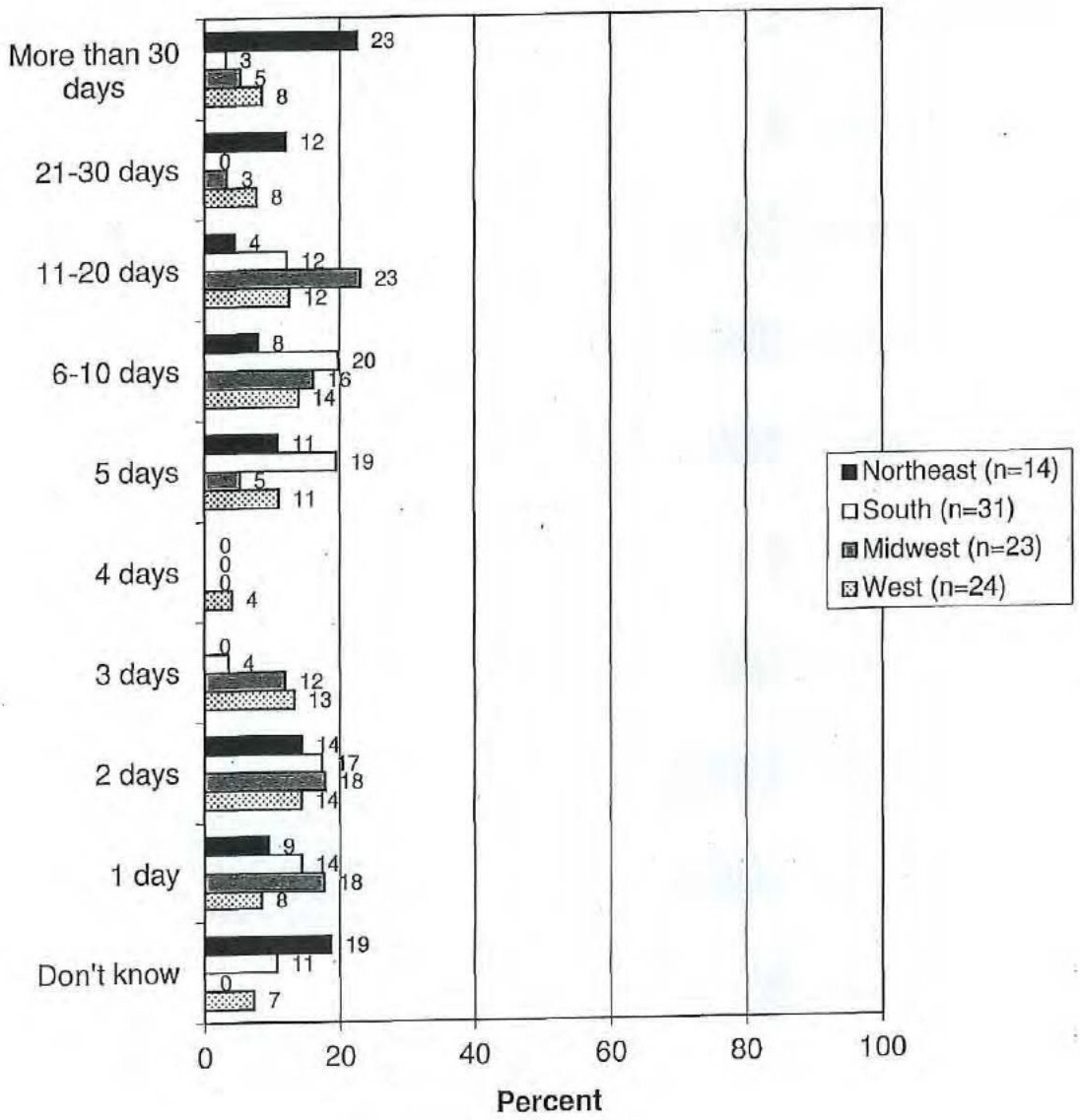

How many days did you skeet shoot in 2016? (Asked of those who went skeet shooting in 2016.)