Snowmobiling in Minnesota:
Economic impact and consumer profile

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SUMMARY ECONOMIC RESULTS

Two surveys and secondary data were used to ascertain snowmobiling economic activity and impact. In cooperation with Minnesota United Snowmobiling Association (MnUSA) and the Department of Natural Resources (DNR), a mail survey of Minnesotan's with registered snowmobiles was implemented, as was a mail survey to snowmobile retailers and manufacturers.

Direct snowmobiling-related expenditures: $199.6 million,

Of total residential expenditures ($184.2 million)
$78.6 million spent in destination
$105.6 million spent at home and en route

Economic impact of expenditures:
Jobs: 2,718 jobs created
Gross State Product: $130.7 million

From resident expenditures:
Total employment: 2,464 jobs created
Gross State Product: $117.8 million

Non resident expenditures:
Total employment: 254 jobs created
Gross State Product: $13.0 million

Tax Revenue: $15.3 million

Retail activity:
Jobs: 1,142 jobs
Wages and salaries: $28.5 million;
Contribution to GSP: $61.3 million
Tax revenue: $6.1 million

Snowmobile manufacturing:
Jobs: 3,892 jobs
Wages and salaries: $143.5 million
Contribution to GSP: $309.0 million
Tax revenue: $30.3 million

Total state and local tax revenues:
Tourism: $15.3 million
Retailer sales: $6.1 million
Manufacturing: $30.3 million

EXECUTIVE SUMMARY

Snowmobiling has long been an important industry in Minnesota. The most recent attempt at measuring the industry's impact dates to 1996. In 1996, Minnesota snowmobile-related retail sales were estimated at $104 million while the economic impacts, as measured by nonresident tourism and manufacturing activity, contributed $300 million toward Minnesota's gross state product and 5,900 jobs. Given the clear importance of the snowmobiling industry to Minnesota, an updated examination of its economic contributions and participants was warranted.

This project assessed the economic impact of all snowmobiling activity in Minnesota and profiled registered snowmobilers. More specifically, the project focused on:

(1) economic impact of snowmobile trips and related tourism by Minnesota residents and nonresidents,
(2) economic impact of snowmobile manufacturing in the state,
(3) economic impact of consumer purchases of snowmobiles, accessories and apparel as measured by retail sales margins (gross sales less cost of goods sold),
(4) state government activity related to snowmobiling, and
(5) experiences, motivations and preferences of registered Minnesota snowmobilers.

METHODS

Two surveys and secondary data were used to ascertain economic activity and impact. In cooperation with Minnesota United Snowmobiling Association (MnUSA) and the Department of Natural Resources (DNR), a mail survey of Minnesotan's with registered snowmobiles was implemented, as was a mail survey to snowmobile retailers and manufacturers.

Questionnaires and samples: The consumer questionnaire consisted of eight pages focused on questions to determine snowmobiling experience, travel, expenditures, and perceptions of snowmobiling among a systematically selected sample of Minnesota snowmobiling households. Using a modified Dillman (2000) technique, a response rate of 43.8% was achieved (n=490). A non-response check indicated no significant differences between respondents and non-respondents on select variables of interest.

The manufacturing and retail questionnaire consisted of four pages focused on total sales, employment, wages and industry supply costs both in and out of Minnesota among a list supplied by MNUSA. Using a modified Dillman (2000) technique, a response rate of 21.4% (n= 98) was achieved. The response rate was challenged by survey timing and the list used for the survey.

Analysis: Data were collected, edited and analyzed using SPSS and REMI (Regional Economic Models, Inc – an economic simulation model of the Minnesota economy). In contrast to the 1996 study, this project assumed that all snowmobiling-related activity

would impact the state's economy irrespective of the source (resident or nonresident) was either new to the state or would occur in another state if not in Minnesota. In both cases, all activity represents economic impact contributions to Minnesota's gross state product. The estimates of snowmobiling activity were entered into REMI to determine the direct (the actual activity), indirect (industry suppliers) and induced (industry employee spending) impacts on the Minnesota economy.

To estimate tourism-related expenditures for Minnesota residents, the analysis used data from the consumer survey including number of trips, expenditures during these trips, annual repair and maintenance costs, and other non-travel related expenses. Nonresident tourism expenditures were estimated through an analysis of Travelscope data produced by the Travel Industry of America. All expenditure data were statistically extrapolated to the respective populations and entered into REMI.

The manufacturing and retailer questionnaire provided the production and sales data necessary to estimate the impacts of snowmobile activities. These data were augmented by company information available via public reports. After adjusting the retail sales data to represent only gross margins – the net contribution on the economy - the data were also statistically extrapolated and entered directly into REMI.

RESULTS

Expenditures

The direct expenditures of resident and nonresidents in Minnesota are the study's first area of economic impact analysis. Including nonresident expenditures, snowmobiling expenditures totaled $199.6 million, of which 92 percent comes from resident expenditures. Considering the middle estimation scenario of direct expenditure estimates, about 43% ($78.6 million) of the total residential expenditures ($184.2 million) are spent in the destination area within the state. The rest of the expenditures ($105.6 million) are spent at home and en route to the destination.

Economic Impact

When residents and nonresidents snowmobile throughout the state, significant direct (expenditures or economic activity), indirect (suppliers to industry) and induced (employee spending) impacts flow into the local areas visited. About 43% of resident expenditures are spent in the snowmobiling destination area.

In terms of total employment, resident and nonresident direct expenditures due to snowmobiling created 2,464 and 254 jobs respectively. The high percentage (close to 91%) of employment due to resident snowmobilers reflects the higher percentage (92%) of direct expenditures (i.e., economic activity) by residents relative to nonresidents.

Resident and nonresident spending resulted in Gross State Product (GSP) impacts of $117.8 million and $13.0 million, respectively, for a total of $130.7 million statewide. Similarly, the

much higher percentage of spending by residents reflects the relative magnitude of the resident and nonresident GSP contributions to the state economy.

Retailer Sales of Snowmobiles and Accessories

Retail sales of snowmobiles, parts and accessories also generated economic impact statewide. The estimated impacts of the retail activity in Minnesota are: 1,142 jobs; wages and salaries of $28.5 million; $61.3 million of value-added (contribution to GSP, or gross state product); and $6.1 million state and local tax revenues.

Snowmobiling Manufacturing

Using employment and sales data for snowmobile manufacturers in Minnesota, the economic impacts of snowmobile manufacturing in 2004 were estimated to be: 3,892 jobs, wages and salaries of $143.5 million; value-added of $309.0 million; and $30.3 million of state and local tax revenues.

Tax Related Activity

Total state and local tax revenues generated by the snowmobile industry, have three components: tourism sales, retailer sales and manufacturing. The estimated total state and local tax revenues were $51.8 million in 2004, broken down into: $15.3 million (tourism); $6.1 million (retailer sales); and $30.3 million (manufacturing).

State Government Activity Related to Snowmobiling

Two state government entities directly connect to Minnesota snowmobiling: the Department of Natural Resources and Explore Minnesota Tourism. There are approximately 20,000 miles of snowmobile trails in Minnesota. The vast majority of these miles are maintained by volunteers (18,000 miles) and, notably, the 2004 value of a volunteer hour is $17.55 (Independent Sector, 2005). The Department of Natural Resources generates revenue through registration fees and 1% of non-refunded gas tax, that is, the portion of tax paid on fuel purchased for snowmobiling. These funds go into the Snowmobile Trails and Enforcement Account, a portion of which is dispersed through the Grants-in-Aid program to partially reimburse some 300 local government sanctioned snowmobile clubs throughout the state for their out-of pocket costs of trail building and maintenance. The 2004 total resources available in the fund were $17,041,454. The amount in the Grants-in-Aid program was $5,285,280.

In addition, Explore Minnesota Tourism (EMT) provides a variety of programs to facilitate and promote snowmobiling. In 2003-04, EMT spent approximately $500,000 to promote winter tourism, including snowmobiling, in the upper Midwest and Canadian markets. For 2004-05, EMT's expenditures specifically related to snowmobiling will exceed $70,000.

Snowmobiler Profile

Demographics: Mirroring a national sample, the typical 2004 Minnesota snowmobiler was a white male in his mid-forties with some college or technical schooling. The typical rider is most often full-time employed with an income greater than $50,000 that supports a family with an average size of three.

Motivations for snowmobiling: The most important experience attribute among Minnesota snowmobilers was 'being with friends and family'. 'Seeing exhilarating scenery', 'getting away from it all', and 'feeling in control of the vehicle' tied as the second most important experience attributes. Four factors explained 59.8% of the variance regarding what is important to snowmobiling: skill/achievement, novel natural areas, familiarity, and exercise.

Typical snowmobiling experience: Snowmobilers participate in the activity about 18 times during the season, on average. Those who trailer their snowmobiles 100 miles or more for a day of snowmobiling, do so about seven times a season. Those who trailer their snowmobiles and stay at least one night away from home for purposes of snowmobiling also do so about seven times a season, staying an average of 3.6 days per trip.

Survey respondents reported more than half of their snowmobile experiences involve distances less than 80 miles, while most of the remainder range up to 160 miles. The average experience was 5.6 hours in duration.

Most respondents use two or more snowmobiles and groups typically consist of 4 or more adults. When children or teens participate, there are usually two or more in the group. Most often, groups include both family and friends, while about 25% of the time they include just friends, and another 17% just family.

Snowmobiling-related travel: Most often, snowmobiling takes place in the northern portion of the state. More than four of 10 respondents (44.0%) travel to the north central/west region and almost a third (31.3%) travel to the northeast region. When respondents anticipated snowmobiling in the 2004-2005 season, they estimated fewer trips, number of times snowmobiling, and lower trip expenditures than for the previous season.

Desired experience improvements and willingness to pay for improvements:
Snowmobilers cited a series of improvements that they would like to see in the Minnesota trail system. The most frequently cited improvements included trail signage and grooming.

More than half of respondents supported an increase in the state trail sticker to pay for the improvements. Further, respondents were willing to pay, on average, an additional $17.80 for trail improvements but the median value was less ($10.00).

DISCUSSION & IMPLICATIONS

Expenditures: Nonresidents and residents had more than twice the expenditures ($199.6 million) during the 2003 – 2004 season compared to $104.2 million in the 1996 snowmobile study.[1] Because resident expenditures accounted for about 92 percent of total expenditures ($184.2 million), the increase is partially explained by the increase in registered snowmobiles in Minnesota, from 233,443 in 1995 to 279,738 in 2003.

In fact, among nonresidents, estimated snowmobiling expenditures increased from just $12.8 (2004 dollars) in the 1996 study to $15.4 million in 2003. This increase occurred despite the number of nonresident snowmobilers falling from 76,000 to 59,000 between the two periods.

Economic impacts: Although the 1996 study did not estimate the economic impacts generated through resident spending, the doubling of expenditures suggest a similar economic impact increase. In contrast, despite increased nonresident expenditures, overall GSP contribution impacts declined from $19.8 million to $13 million suggesting productivity improvements in the industries affected and possible changes in expenditure patterns among nonresidents.

Manufacturers saw a marked decline in impacts due to lower manufacturing activity as reported by survey respondents and identified in public company reports. Retailer comparisons are not possible due to the different methodologies and definitions employed by the two studies.

It is important to note that any comparisons between the 1996 study and this study have limitations and should be done cautiously. In addition to the seasonal factors (e.g., tourism, retailer and manufacturing sales depend on winter conditions) that affect results, this study has a more inclusive economic impact definition that makes comparisons difficult, if not impossible, in some cases.

Consumer profile: The 2004 registered snowmobiler in Minnesota mirrors both national and state statistics in that they are a middle-aged non-Hispanic male with some college education. National data indicates that this 'boomer' also has specific desires for novelty (National Travel Monitor, 1998), family accommodations (Chon & Singh, 1995), as well as flexible opportunities: educational, cultural, or sport experiences (Cato & Knustler, 1988). Another potentially important consideration as this group matures is physical accessibility and participation rates (TIA, 2003).

Two of the four factors important to Minnesota snowmobilers were similar to May et al. findings (2001): achievement/stimulation and enjoy nature. Similarly, two of the four factors were comparable to McLaughlin and Pardice's (1980) findings where general nature experiences and physical exercise were important. Given that the only skill/achievement factor differed by self-reported skill level, programming and marketing should focus on the central importance of socialization and natural areas.

[1] The nonresident data was derived via analysis of Travelscope data produced by the Travel Industry of American (TIA) for calendar year 2003.

Attention to the physical exercise could be extremely beneficial to enhance participation and secure programming or planning dollars from state and federal governments. To enhance health benefits on public lands, baseline information on both realized health benefits and constraints to these benefits is needed. Additional research to determine both the perceived and real health benefits of snowmobiling is suggested.

While more than half of respondents suggested constraints related to the environment or their personal lives interfere with their snowmobiling experience, 7.4% indicated other riders as the source of interference. Although conflict has a negative connotation, it can be a positive as it indicates systemic inefficiencies and keeps the organization at a higher level of stimulation. Schneider (2004) found that "…individuals frequently cope without the need for management intervention. Still, these seemingly unmanaged responses rely heavily on well communicated established rules." Therefore, working to disseminate and educate about appropriate trail behavior seems in order.

Similar to research in New York (1998) and Cook County (2003), respondents indicated they were willing to pay for enhanced experiences in terms of trail grooming and signage. The average amount respondents in the survey were willing to pay to support this change was $17, but the median was $10. Considering a fee increase of $10 seems most prudent.

Future research:

Organizational and individual future research would be beneficial for MNUSA and those associated with providing snowmobiling experience opportunities. With regards to the organization, future research could clearly identify the perceived benefits of and constraints to club membership, as well as the performance of MNUSA on important factors to the members. For individuals, attention to the physical exercise could be extremely beneficial to enhance participation and secure programming or planning dollars from state and federal governments. Also, a limitation of this project is that we identified estimated snowmobiling behavior rather than actual behavior. Future projects could include a post-season check on actual behavior.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Snowmobiling is an important revenue generator for several national and regional economies. Of the approximately 2.7 million registered snowmobiles in the world, more than 86% are in North America. The snowmobiling industry generates $20 billion in the U.S. and $6 billion in Canada annually (International Snowmobile Manufacturers Association, 2004). In 2004 alone, 109,750 snowmobiles were sold in the U.S. and 48,556 in Canada. The snowmobile industry generated more than 85,000 fulltime jobs in North America in which 2,560 licensed snowmobile dealers exist.

Minnesota has direct involvement in snowmobiling from both a consumer and manufacturing perspective. First, there are more than 277,000 registered snowmobiles in the state of Minnesota, the second largest US market after Michigan. Second, two of the four major snowmobile manufacturers in the world are headquartered in Minnesota: Arctic Cat in Thief River Falls and Polaris Industries in Medina.

Estimates of Minnesota's snowmobiling economic activity and impact date to 1996. In 1996, snowmobiling generated an estimated $104 million in retail sales, $300 million toward Minnesota's gross state product and 5,900 jobs. Given the importance of the snowmobiling industry to Minnesota but dated economic information, an examination of its economic contributions and participants was warranted.

PURPOSE

This project assessed the economic activity and impact of snowmobiling in Minnesota and profiled registered snowmobilers. More specifically, the project focused on:

(1) economic impact of snowmobile trips and related tourism by Minnesota residents and nonresidents,
(2) economic impact of snowmobile manufacturing in the state,
(3) economic impact of consumer purchases of snowmobiles, accessories and apparel as measured by retail sales margins (gross sales less cost of goods sold),
(4) state government activity related to snowmobiling, and
(5) experiences, motivations and preferences of registered Minnesota snowmobilers.

The report is divided into two sections: 1) economic activity and impact, and 2) consumer profiles. Background information, methods, and results are provided in each section.

BACKGROUND: ECONOMIC ACTIVITY AND IMPACT

The economic activity and impact of snowmobiling has been estimated nationally, as well as in various states and provinces, including Minnesota. However, clarifying the difference between the terms economic activity and economic impact is a necessary precursor to discussions and comparisons of these studies.

Economic activity refers to any exchange of goods or services for money within a state. For the Minnesota snowmobiling industry, this economic activity in the past has been measured by retail sales and resident tourism expenditures. In contrast, *economic impact* generally refers to the generation of new income in a state and is generally represented by employment, wages, and value added, or gross state product (GSP). In the last assessment of Minnesota's snowmobile industry completed in 1996, economic impact was limited to "new monies" coming into the state as measured by estimates of snowmobile tourism expenditures by non-Minnesotans, the impact of retail sales to non-Minnesotans, and snowmobile manufacturing in Minnesota.

This study takes a more inclusive approach recognizing that any dollars spent on snowmobiling activities impact the state's economy irrespective of its resident/nonresident source, or would occur in another state if not in Minnesota. It is important to not only determine the expenditures related to the state's industry, but also the overall the overall economic impact of all industry activity.

A single assessment of Minnesota's snowmobiling industry was completed in 1996 (Tiller). The snowmobiling generated economic activity was estimated at $138 million. Annual retail sales of snowmobiles and related equipment accounted for 47% of the total, while resident tourism represented 27%. The remaining 26% was divided among insurance, the publishing industry, racing and membership fees. The economic impact was estimated at $304 million. This total was decomposed among three areas: economic impact of snowmobile and related manufacturing within Minnesota (92%), tourism by non-Minnesotans (5%) and retail sales of snowmobiles and related equipment to non-Minnesotans (3%).

More recent assessments have been conducted across the US and Canada (Table E1). Using a variety of methods and measures, economic impact ranges from $52.6 million in Utah to $610 million in New Hampshire. Stynes et al. (1998) argue for caution in interpreting these estimates since "snowmobiling spending figures, while impressive, do not provide accurate estimates of regional economic impact." Also, Stynes et al. warn about the use of multipliers that might overestimate economic impacts when they don't carefully "compute margins on snowmobile expenses". This study uses gross retail margins rather than the full retail sale to help minimize the overestimation of impacts.

This project updates and extends the 1996 efforts to measure total economic activity generated by the snowmobile community and the economic impact that the industry and sport have on Minnesota's economy. However, both economic activity and economic impact for Minnesota have been analyzed, the results focus on the snowmobile industry impacts through data collected from consumer, retail and manufacturing surveys.

Table E1. Overview of studies assessing the economic impact of snowmobiling.

Area Studied Year (Source)	**Estimated Total Economic Impact (Millions)**	**Estimated Total Spending: Economic Activity (Millions)**	**Estimated Jobs Supported**
Alberta, 2002 (Kubursi, Econometric Research Ltd.)	$231 (CAD)	~$238(CAD)	~4100
Maine 1997-98 (Reiling, Kotchen & Bennett)	$261	$176.3	~3100
Michigan 1998 (Stynes, Nelson & Lynch)	$261.7 ($168.4 sales; $93.3 income) (Combined 'trip related' & 'equipment related impacts)	$110.1 ($70.4 In-state; $39.7 Out-state)	~6455
New Hampshire 2003 (Okrant & Goss)	$1,200	$666	~8099
New York 1998 (Merwin Rural Services Institute, SUNY, Potsdam)	$476.2	$238.1	
Pennsylvania 2000 (ISMA)	$161		
Utah, 2001 (UT State Univ.)		$52.6	
Washington 2001 (ISMA)	$92.7		
Wisconsin 2001 (WI Dept. of Tourism)		$249.5	
Wyoming, 1995 (ISMA)	$189.5		

METHODS: ECONOMIC ACTIVITY AND IMPACT

Two surveys and secondary data assessed snowmobiling's economic activity and impact in Minnesota. In cooperation with Minnesota United Snowmobiling Association (MNUSA) and the Department of Natural Resources (DNR), two mail surveys were implemented: one to Minnesota households with registered snowmobiles and one to retailers and manufacturers. The methods for these mail surveys are presented in the following sections: sample, questionnaire, response rate, and analysis.

Consumer Sample

Registered snowmobile owners in Minnesota were the target sample. The DNR provided access to a list of unique households with registered snowmobiles (n=175,000). From this list, a systematic sample of 1202 was selected and sent a mail questionnaire.

Consumer Questionnaire

Based on a review of previous questionnaires both in and out of Minnesota, an eight-page mail questionnaire was drafted by UMN personnel and reviewed by Department of Employment and Economic Development (DEED) and MNUSA personnel. A pre-test among ten snowmobilers resulted in more consistent terminology when referring to snowmobiling experiences (rather than rides, outings, and trips).

Following Dillman (2000), potential respondents received an eight-page questionnaire and introductory letter in the mail; the letter explained the purpose of the questionnaire and ensured anonymity and confidentiality. Questionnaire sections focused on 1) general snowmobiling experience, 2) snowmobiling during the 2003-2004 season, 3) anticipated snowmobiling in the 2004-2005 season, 4) perceptions of snowmobiling, and 5) demographics. This section details the travel and expenditure sections for 2003-2004 and 2004-2005 seasons.

Travel for snowmobiling both in and out of Minnesota was of interest. Open-ended questions focused on the number of day and overnight trips for snowmobiling related travel, trip duration, group composition, and group size. Travel to each of the four Explore Minnesota Tourism regions was also of interest. A small map of the regions was provided to ease respondent burden. Similar to the open-ended questions for Minnesota travel, respondents were asked about the number of day and overnight trips outside of Minnesota related to snowmobiling, as well as the typical states visited for snowmobiling.

Expenditures for the entire snowmobiling experience (at home, en route, and at the destination area) were queried. Seven expenditure categories included: grocery and convenience store food and drink, tow vehicle expenses, snowmobile expenses, restaurant and bar meals and drinks, sporting goods, lodging, and all other items. Beyond

travel expenses, snowmobiling related expenses for equipment, repair, insurance and storage were also queried.

Consumer Response Rate

Following a modified Dillman (2000) technique that included an initial survey package (Appendix A), a scenic postcard reminder (Appendix B) one week later, and a replacement questionnaire package mailed two weeks after the postcard, an overall 43.3% response rate was obtained (Table E2). Fifteen non-respondents queried by telephone did not significantly differ on select demographic (age) and snowmobiling behavior items (number of times in a typical season, expected days in 2004-2005, skill).

Table E2. Response rate among Minnesota snowmobiler survey respondents, 2004.

	n	%
Initial mailing	1202	
Undeliverable	43	
Unusable	27	
Returned	490	
Response rate		43.3

Analysis

Data were entered, edited, and analyzed using SPSS and REMI Version 6.0 (Regional Economic Models, Inc. economic forecasting and simulation model of the Minnesota economy; see Appendix E for details). SPSS provided descriptive analysis and estimates of economic activity (expenditures) while the REMI modeling measured the economic and tax revenue impacts.

Expenditures

Resident tourism expenditures included two components: resident travel-related expenditures and resident nontravel-related expenditures (equipment, insurance, storage, etc.). The travel-related expenditures included expenses incurred by residents at home, en route and at the local area. About 98 percent of the sample (N = 490) included resident snowmobilers, i.e., those who snowmobiled in Minnesota. Because of the small sample size of those Minnesotans who snowmobiled outside of the state, no further analysis was done on this group. Table E3 summarizes the model used in calculating total direct expenditures for resident snowmobilers in Minnesota.

Table E3. Resident snowmobiler direct expenditures (travel related) (Million 2004$)

Typical Winter		Ave. expenses Per SMB Experience A	Ave. no. of SMB Days per year B	No. households W/ snowmobiles* C	% Households Participating D	Statewide Expenditures (Million $) E = A x B x C x D
Low	95% range	$84	11.4	175,000	0.78	$130.7
Middle	Mean	$99	11.4	175,000	0.78	$154.1
High	95% range	$115	11.4	175,000	0.78	$179.0
*Minnesota DNR estimate of households with snowmobiles. Source: Snowmobile 2003-2004 survey						

According to the above model, statewide residential snowmobile expenditures is the product of the following factors: average expenses per day, average number of snowmobile days per year, number of households with snowmobiles, and the percentage of participating households with snowmobiles (columns A,B,C and D in Table E3). Calculations were done under three scenarios: low, middle, and high. Low and high scenarios are obtained by estimating a 95 percent confidence interval using the mean (X), standard deviation (SD) and the sample size (N):

$$\text{Low: } X - 2*(SD)/\cdot N$$
$$\text{High: } X + 2*(SD)/\cdot N$$

Although the mean or average may be the important statistic, it is important to know how spread out or varied the expenditure data are. A measure of spread is the standard deviation. The above formulas provide a way of calculating the range or spread of observations from low to high.

The average expenditure per day was calculated by taking total household expenditures per household and dividing this by the variable DAY_SMB, i.e., the number of days snowmobiles were used for snowmobiling (not as support for other activities like fishing) during a typical snowmobiling experience.

Resident respondents reported a mean value of 11.4 days snowmobiling in Minnesota during a typical winter, slightly higher than the 14.5 mean value for the 2003-2004 seasons.[2] However, according to the State Climatologist Office the 2003-2004 season had below-average snow depth probably limiting snowmobiling activity. As a result, the direct expenditures using the mean value of 11.4 days for a typical winter season was used as the baseline estimate.

The Minnesota DNR provided the estimate of 175,000 households with snowmobiles. The participation rate (0.78) of households with snowmobiles was interpolated from zero snowmobiling days reported by some respondents during the 2003-2004 season. This is consistent with the results of the nonresponse survey.

The above model was also applied to resident snowmobiling activity expenditures. These are expenditures incurred by residents on equipment, repair and maintenance, insurance, off-season

[2] The mean for all snowmobile travel, regardless of destination (including non-Minnesota sites) was 11.6 days as cited elsewhere in the report.

storage and other expenses. Using a trimmed distribution to reduce sample skewness, the low, middle and high estimates of the total nontravel expenditures were estimated (Table E4).[3]

Table E4. Resident and nonresident direct expenditures – Three scenarios (Million 2004$)

	Low	Middle	High	%Total (Middle)
Residents (Travel)*				
Home/En route	64.0	75.5	87.7	37.8
Local Area	66.7	76.6	91.3	39.4
Residents (Nontravel)**	28.8	30.1	31.4	15.1
Nonresidents	12.6	15.4	18.2	7.7
Total	172.1	199.6	228.6	100.0

*Travel related snowmobile expenses at home and en route to destination.
**Annual expenses related to snowmobile equipment, insurance, off-season storage, etc.
Sources: Analysis & Evaluation Office, DEED, Use of REMI to analyze snowmobile survey results

According to TravelScope, there were 59,000 nonresident person-trips to Minnesota in 2003 involving winter sports. Extrapolation into person-trips was done using a weighing scheme developed by TravelScope. Low, middle and high estimates of the direct expenditures are obtained using the same procedure used earlier (Table E4). Table E5 summarizes resident and nonresident economic activity (direct expenditures); it also includes comparison between the current study and the 1996 snowmobile study. Detailed data on residential and nonresidential economic activity are found in Table E5.

[3] A trimmed mean is used to eliminate the effects of extremely high or low responses that are present in the sample. It is calculated by discarding a certain percentage of the lowest and the highest scores and then computing the mean of the remaining scores. A trimmed mean is less susceptible to the effects of extreme scores than is the arithmetic mean and therefore less susceptible to sampling fluctuation than the mean for extremely skewed distributions. The trimmed mean is a move efficient, unbiased estimate of the population than the sample mean.

Table E5. Summary of total resident and nonresident economic activity comparison between 2003 Study (Middle Scenario) and 1996 Study (Million 2004$).

			2003 Study		1996 Study	
	Residents	% Total	Nonresidents	% Total	Nonresidents	% Total
Home/ En route	75.5	41.0	N.A.	N.A.	N.A.	N.A.
Local area	78.6	42.7	15.4	100.0	12.8	100.0
Nontravel Expenses	30.1	16.3	N.A.	N.A.	N.A.	N.A.
Total	184.2	100.0	15.4	100.0	12.8	100.0

Note: N.A. = no data available
Sources: Analysis & Evaluation, DEED, Use of REMI to analyze 2003-2004 snowmobile Survey results; 1996 Snowmobile study

About 43 percent of the total residential expenditures (middle scenario) are spent in the destination areas. Because Travelscope data provides limited expenditure data (e.g., a focus on expenditures at the destination), it is assumed all (100%) of nonresident expenditures were spent in the destination area.

Economic impact

The REMI model was used to estimate the statewide economic impacts of snowmobile expenditures by residents and nonresidents. The model translates the visitor expenditures into additional consumer demand among Minnesota's industry sectors. Satisfying increased consumer demand means greater production activity in the state, hiring new workers and generating additional incomes. The model quantifies this new level of Minnesota production activity in terms of total employment, Gross State Product (valued added) , gross receipts/sales, wages and salaries, tax revenues and other economic indicators.

Snowmobile expenditures were entered into REMI using either industry demand or industry sales policy variables. Industry demand is the amount of goods and services demanded by consumers, government and other final users in a local region fulfilled either by in-state production or imports from outside the state. Increasing industry sales increases the amount of production in a local region without increasing imports from outside the state.

In the case of resident snowmobilers, all expenditures spent at home and/or en route to the Minnesota destination, were entered into the model as industry demand. This means that demand was fulfilled by both in-state production and imports. For expenditures in the local area, the industry sales variables were used, meaning that demand is satisfied only through in-state production. It is assumed that the local area has enough resources and capacity to not displace other economic activities during the snowmobiling season.

For the resident snowmobiler non-travel expenses, all expenditures were entered as industry demand policy variables. Finally, for the nonresident snowmobilers, industry demand was used

for all industry variables except lodging where the industry sales policy variable was used. In this case, it is assumed that all lodging sales are made without displacement effects.

All expenditures were entered in real dollars (1996 dollars) into the REMI model. The Minneapolis-St. Paul consumer price index was used to convert from 1996 dollars to 2004 dollars and vice-versa.

Manufacturer and Retailer Sample

MNUSA provided the University with a list of retailers, manufacturers, and suppliers in the Minnesota snowmobile industry (n=490). The entire list was sent a mail questionnaire.

Retailer Questionnaire

Based on a review of previous surveys in Minnesota, a four-page mail questionnaire was drafted by UMN personnel and then reviewed by DEED and MNUSA. Potential respondents received the four-page questionnaire and introductory letter in the mail; the letter explained the purpose of the questionnaire and ensured anonymity and confidentiality. Questionnaire sections focused on 1) snowmobile retail operations, 2) manufacturing-related operations, and 3) other snowmobiling operations.

The section on snowmobile retail operations determined the dollar amount of annual retail sales, percentage of sales outside Minnesota, number of employees in retail, average annual hours of work, and average hourly wage. Similarly, the other snowmobile operations section determined the dollar amount of other operations, number of employees in these other operations, average annual hours of work, and average hourly wage. The manufacturing section focused on the dollar amount of annual manufacturing costs and value of supplier industry both inside and outside Minnesota.

Retailer Response Rate

Following a modified Dillman (2000) technique that included an initial survey package (Appendix C), a scenic postcard reminder (Appendix D) one week later, and a replacement questionnaire package mailed two weeks after the postcard, an overall 21.4 percent response rate was obtained (Table E6). Response rates were hampered by the timing of the questionnaire (mid-November) as well as a list that included ATV suppliers, in addition to snowmobile suppliers.

The mix of retailers and manufacturers is about 76% (retail) and 24% (manufacturing), respectively. Of the 98 firms that responded to the survey, 21 were identified as manufacturers and 71 were identified as retailers. The identification was based on the number of firms that reported non-zero counts of manufacturing and retail workers. There were a number of firms that did both manufacturing and retail.

Table E6. Response rate among Minnesota snowmobile manufacturing and retail survey respondents, 2004.

	n	%
Initial mailing	495	
Undeliverable	36	
Returned	98	
Response rate		21.4

Analysis

Of the 98 survey respondents, 21 were identified as manufacturers. For any known major businesses that did not respond, data on employment and revenues were obtained from Annual Reports, 10-K SEC filings, and other business databases including Dun and Bradstreet, Reference USA and others. The number of Minnesota snowmobile production workers was obtained by applying the percentage of snowmobile-related sales to the reported Minnesota employment figures. The snowmobile-related jobs were entered as industry employment into the NAICS sector *Other Transportation Equipment Manufacturing* in the REMI model.

Using the median (of part-time and full-time manufacturing jobs) of 7 jobs per firm and projecting this to the estimated population of 202, the total manufacturing jobs is 1,414. It is further assumed that 40 percent of these jobs manufacture snowmobile-related parts and accessories, resulting in 566 production jobs. The share is based on business records and is a reasonable assumption since the workers are producing parts and accessories for other types of recreational vehicles, in addition to snowmobiles, during the year.

Snowmobile and related manufacturing in Minnesota generated the following impacts (see Table E11): total employment of 3,892 jobs, $143.5 million in wages and salaries; and $309 million in value-added.

With regards to retail sales, the skewed distribution of the survey data was trimmed slightly to give a mean retail sales of $521,800 per firm. When this is projected to the estimated total population of 343 retailers, the total snowmobile retail sales of snowmobiles is $178.9 million.

The economic impact of snowmobile retail sales is attributed to the gross margin (i.e., gross sales of snowmobiles minus cost of snowmobiles). Hence, 29 percent of the retail sales of $51.9 million is the value of the retail sales that is entered into REMI as industry sales (2004 $ expressed in 1996 $) in the *Retail Trade* NAICS sector. These estimated direct, indirect and induced impacts (see Table E10) in 2004 are: total employment of 1,142 jobs; $28.5 million in wages and salaries; $61.29 million in value-added; and $6.1 million in state and local tax revenues.

RESULTS: EXPENDITURES (ECONOMIC ACTIVITY)

Resident and Nonresident Tourism

The economic activity of snowmobiling in Minnesota is represented by the direct expenditures of residents and nonresidents. Considering the middle scenario of direct expenditure estimates, about 43 percent ($78.6 million) of the total residential expenditures ($184.2 million) are spent in the local areas within the state. The rest of the expenditures ($105.6 million) are spent at home and en route to the destination. Including nonresident expenditures, the total snowmobiling expenditure is $199.6 million, of which 92 percent comes from residential expenditures. Table E7 below shows direct expenditures by residents and nonresidents for three scenarios.

Table E7. Resident and nonresident direct expenditures – Three scenarios (Million 2004$).

	Low	Middle	High	%Total (Middle)
Residents (Travel)*				
Home/En route	64.0	75.5	87.7	37.8
Local Area	66.7	76.6	91.3	39.4
Residents (Nontravel)**	28.8	30.1	31.4	15.1
Nonresidents	12.6	15.4	18.2	7.7
Total	172.1	199.6	228.6	100.0

*Travel related snowmobile expenses at home and en route to destination.
**Annual expenses related to snowmobile equipment, insurance, off-season storage, etc.
Sources: Analysis & Evaluation Office, DEED, Use of REMI to analyze 2003-2004 Snowmobile survey resu

RESULTS: ECONOMIC IMPACT

When residents and nonresidents snowmobile throughout the state, significant direct (economic activity), indirect (suppliers to industry) and induced (employee spending) impacts flow into the local areas visited. Table E8 summarizes the economic impact of resident and nonresident direct expenditures for the middle scenario.

Table E8. Total resident and nonresident economic impacts – Middle scenario (Million 2004$).

Impacts	Resident travel	Resident Nontravel	Nonresident Travel	Total
Total Employment	2315	149	254	2718
GSP (Contribution To State Economy (Nominal million $)	106.8	11.0	13.0	130.7
Gross receipts/ sales (Nominal million $)	211.3	21.0	23.1	255.4
Wages & salaries (Nominal million $)	52.2	5.1	5.7	62.9

State tax revenues (Nominal million $)	9.4	0.8	1.1	11.3
Local tax revenues (Nominal million $)	3.4	0.3	.0.4	4.0

Sources: Analysis & Evaluation Office, DEED, Use of REMI to analyze snowmobile 2003-2004survey result
REMI Model Version 6.0

In terms of total employment, resident and nonresident direct expenditures due to snowmobiling created 2,464 and 254 jobs respectively. The high percentage (close to 91 percent) of employment due to resident snowmobilers reflects the higher percentage (92 percent) of direct expenditures (i.e., economic activity) by residents relative to nonresidents.

Resident and nonresident spending resulted in Gross State Product (GSP) impacts of $117.8 million and $13.0 million, respectively, for a total of $130.8 million statewide. Similarly, the much higher percentage of spending by residents reflects the relative magnitude of the resident and nonresident GSP contributions to the state economy. Detailed economic impact data for all three scenarios are found in Appendix F. Table E9 summarizes total direct expenditures and economic impact for residents and nonresidents.

Table E9. Total direct expenditures and economic impact: Residents and nonresidents middle scenario (Million 2004$) 2004 Study vs. 1996 Study.

	Total Direct Expenditures (Economic Activity)		GSP	Employment	GSP	Employment
	2004 study	1996 study	2004 study		1996 study	
Residents	184.2	91.4	117.8	2464	N.A.	N.A.
Nonresidents	15.4	12.8	13.0	254	19.8	450
Total	199.6	104.2	130.7	2718	19.8	450

Note: N.A. = no data available
Sources: Analysis & Evaluation, DEED, Use of REMI to analyze snowmobile 2003-2004 survey results; 1996 Snowmobile study

Other resident and nonresident impacts (middle scenario) not included in Table E9 include: $255.4 million in gross receipts/sales, 62.9 million in wages and salaries, and $15.3 million in state and local tax revenues. Detailed data on resident and nonresident economic impact for the low, middle, and high scenarios are found in Appendix F.

Sales of Snowmobiles and Accessories

The economic impact of snowmobile retail sales in Minnesota is derived from the sales of snowmobiles by the retailers who responded to the survey. The estimated sales, from the 343 retailers, is $178.9 million. Instead of the entire sales figure, the retail sales margin (estimated at 29 percent of total sales; Source: U.S. Bureau of the Census,

http://www.census.gov/svsd/retlann/view/table7.txt) of $51.9 million was entered into the REMI model.

The gross margin (29 percent) is an average of the gross margins of *Motor vehicle and parts dealers* and *Automotive parts, accessories, and tire stores* obtained from the Annual Retail Trade Survey (March 18, 2005). This figure was used because of the mix of snowmobiles, parts and accessories included in the retail sales.

Table E10. Economic impact estimates of snowmobile retail sales in Minnesota.

Total employment	1,142
Total Wages & Salaries (Million 04$)	$28.47
GRP (Value-Added) (Million 04$)	$61.29
State/ local tax revenues (Million 04$)	$6.11
Source: Snowmobile 2003-2004 Survey, REMI Version 6.0	

Snowmobiling Manufacturing

The total job impact of snowmobile and related manufacturing in Minnesota is 3,892 jobs; wages and salaries ($143.5 million), value-added ($309.0 million) and state and local tax revenues ($30.3 million). Note that the impacts are related only to snowmobile and related manufacturing. The impacts of ATV and other types of recreational vehicles manufacturing in Minnesota are not included.

Table E11. Economic impact estimates of snowmobile and related manufacturing in Minnesota

	Total
Total employment	3,892
Total Wages & Salaries (Million 04$)	$143.5
GRP (Value-Added) (Million 04$)	$309.0
State/ local tax revenues (Million 04$)	$30.3
Sources: Snowmobile Survey 2003-2004; Dun and Bradstreet; Reference USA; REMI Version 6.0	

Tax Revenues Generated by the Snowmobile Industry

Each of the three components of the snowmobile industry∝ tourism, retailer sales, and manufacturing∝ generated tax revenues at the state and local levels. The estimated total state and local tax revenues were $51.8 million in 2004, broken down into: $15.3 million (tourism); $6.1 million (retail sales); and $30.3 million (manufacturing).

Table E12. Estimated State and Local Tax Revenues by the Snowmobile Industry

(Million 2004 $)

	Tourism	Retail Sales	Manufacturing	Total
Personal Inc	$2.67	$1.17	$5.72	$9.56
Corporate in	$0.60	$0.23	$0.92	$1.75
State sales	$3.40	$0.96	$6.61	$10.96
State Other	$4.65	$2.04	$9.57	$16.26
Local	$4.02	$1.72	$7.50	$13.23
Total State a Local Taxes	$15.33	$6.11	$30.32	$51.76

Sources: Snowmobile 2003-2004 Survey; Dun and Bradstreet; Reference USA; REMI Version 6.0.
Note: Sums may not add due to rounding.

RESULTS: STATE GOVERNMENT ACTIVITY RELATED TO SNOWMOBILING

Two state government entities provide services and opportunities to snowmobilers: the Department of Natural Resources (DNR) and Explore Minnesota Tourism (EMT).

The (DNR), through the Trails and Waterways Unit, coordinates both the state trail system and administers the Grants-in-Aid program (GIA). The GIA program, authorized in the 1970s, provides partial reimbursement for actual expenses incurred by trail organizations sponsored by a local unit of government. Specifically, the grant reimburses 90% of grooming and trail liability insurance expenses and 65% of other expenses. The three program priorities are: 1) maintaining existing trails, 2) connecting trails and linkages, and 3) addition of new loops and unconnected trail systems. The overall snowmobile-related fund in 2004 was $17 million and the Grants-in-Aid program budget was $5.29 million. Also important to note are that the vast majority of trail miles are maintained by volunteers (18,000 miles) and that the value of a volunteer hour is estimated at $17.55 (Independent Sector, 2005).

In addition, EMT provides multi-faceted programs and opportunities to encourage and promote snowmobiling within the state. EMT employs broadcast, print and electronic marketing vehicles, lends promotional assistance, and is involved in fulfillment and special event marketing efforts. In 2003-04, EMT spent approximately $500,000 to promote winter tourism, including snowmobiling, in the upper Midwest and Canadian Markets. For 2004-05, EMT's expenditures specifically related to snowmobiling will exceed $70,000, and include the following:

- Distribution of 23,000 Minnesota Snowmobiling Destinations guides as the primary information piece in the 10 Travel Information Centers, and 20 local information centers affiliated with EMT, several seasonal consumer sports shows, and in response to individual inquiries taken by EMT travel counselors in response to consumer advertising of the guide.
- Direct mail pieces sent to 275,000 in Nov. 2004.
- Six weeks television advertising schedule in the Twin Cities, Des Moines, Eau Claire/La Crosse, Fargo, Grand Forks, and Sioux Falls January 10 - February 20.

- Transtop bus shelter advertising in St. Paul, Minneapolis, and along light rail.
- Key word advertising on Google search engine December 15 – February 20.

Until 1998, another state government agency, the Iron Range Resources and Rehabilitation Board (IRRRB), actively assisted local snowmobile clubs with trail related programs in the counties of Cook, Lake, St. Louis, Itasca, Aiken, and Crow Wing. As reported in the DTED study of 1996, the IRRRB allocated approximately $450,000 annually for these programs. Due to budget constraints, the IRRRB no longer funds these programs.

DISCUSSION: EXPENDITURES (ECONOMIC ACTIVITY) & ECONOMIC IMPACT

Expenditures: Nonresidents and residents had more than twice the expenditures ($199.6 million) during the 2003 – 2004 season compared to $104.2 million in the 1996 snowmobile study.[4] Because resident expenditures accounted for about 92 percent of total expenditures ($184.2 million), the increase is partially explained by the increase in registered snowmobiles in Minnesota, from 233,443 in 1995 to 279,738 in 2003.

In fact, among nonresidents, estimated snowmobiling expenditures increased from just $12.8 (2004 dollars) in the 1996 study to $15.4 million in 2003. This increase occurred despite the number of nonresident snowmobilers falling from 76,000 to 59,000 during the 2003 – 2004 season. Manufacturers saw a marked decline in impacts due to lower manufacturing activity as reported by survey respondents and identified in public company reports. Retailer comparisons are not possible due to the different methodologies and definitions employed by the two studies.

Economic impacts: Although the 1996 study did not estimate the economic impacts generated through resident spending, the doubling of expenditures suggest a similar economic impact increase. In contrast, despite increased nonresident expenditures, overall GSP contribution impacts declined from $19.8 million to $13 million suggesting productivity improvements in the industries affected and possible changes in expenditure patterns among nonresidents.

Manufacturers saw a marked decline in impacts due to lower manufacturing activity as reported by survey respondents and identified in public company reports. Retailer comparisons are not possible due to the different methodologies and definitions employed by the two studies.

It is important to note that any comparisons between the 1996 study and this study have limitations and should be done cautiously. In addition to the seasonal factors (e.g., tourism, retailer and manufacturing sales depend on winter conditions) that affect results, this study has a more inclusive economic impact definition that makes comparisons difficult, if not impossible, in some cases.

[4] The nonresident data was derived via analysis of Travelscope data produced by the Travel Industry of American (TIA) for calendar year 2003.

BACKGROUND: SNOWMOBILER PROFILE

Both national and state data provide insight into the demographic profile of the US snowmobiler, as well as motivations and travel behavior. Overall, results indicate that the average snowmobiler is a white male in the mid-40s who is employed full time, married, and has an income around $70,000.

National data (Klim, 2004) indicates that the typical U.S. snowmobiler is a married 41-year old man who rides 990 miles per year and spends $4,000 on snowmobile-related expenses. His household earns an annual income of $70,000 and 0.8 children still live at home. According to the ISMA, only 20% of snowmobilers use their vehicle for work, ice fishing or transportation. Similarly, 1996 data on Minnesota snowmobilers indicates that the average MN rider is about 41 years of age, a full-time worker (88.3%) and married (70.8%). Slightly above the national average, the 1996 Minnesota snowmobiling household had a total income of $75,000.

Beyond demographics, May et al. (2001) examined reasons for snowmobiling. Among Wyoming snowmobilers, factor analysis of the Recreation Experience Preference (REP) scales revealed five motivational factors: achievement/stimulation, escape personal/social pressure, enjoy nature/learning, be with family and friends, and escape physical pressure. Viewing the scenery and being with friends were among the most important motivations. Cluster analysis on these motivation factors resulted in five homogeneous groups: "The nature lovers who need to be alone", "Those who want to experience it all", "Those who want to be alone but not get too excited", "Nature lovers who don't want to get too excited" and "Nature lovers who wants to be with family and friends." Nature related reasons were important across all clusters. Vilter, Blahn and Potter (1996) found winter ATVers and snowmobilers had many similarities: both are likely to be male, the age of forty, to have completed high school but not a bachelor's degree, to have a total household income of less than $60,000, to live in the northern or metro areas of the state. Members of both groups also shared the same motivations: to get away from it all, feel in control of the vehicle, and be with family and friends.

Support for improving the snowmobiling experience through increases in permit fees has been explored in at least two states: New York and Minnesota. In New York, one-half of the survey respondents supported on increase of $11 in registration fees to improve trails (Merwin Rural Services Institute, 1998). In Cook County Minnesota, 28% of respondents indicated they would be willing to pay $10 to improve trails for snowmobiles (Kreag & McTavish, 2003).

Consistent national and state data describe the snowmobiler, but limited travel and motivational data exist. In terms of travel, national data indicates snowmobilers spend on average of 7.2 nights in motels per year on their snowmobiling trips (Klim, 2004). In a related vein, 1996 Minnesota snowmobilers' travelled on 4.8 overnight trips with an average of 6.3 persons. The consumer questionnaire for this project focused on extending the knowledge of the snowmobiling market.

METHOD: CONSUMER PROFILE

A mail survey of Minnesotan's with registered snowmobiles was implemented. The methods for these mail surveys are presented in the following sections: sample, questionnaire, response rate, and analysis.

Consumer Sample

Registered snowmobile owners in Minnesota were the target sample. The DNR provided access to a list of unique households with registered snowmobiles (n=175,000). From this list, a systematic sample of 1202 was selected and sent a mail questionnaire.

Consumer Questionnaire

Based on a review of previous surveys both in and out of Minnesota, an eight-page mail questionnaire was drafted by UMN faculty and then reviewed by DEED and MNUSA personnel. A pre-test among ten snowmobilers resulted in more consistent terminology when referring to snowmobiling experiences.

Following Dillman (2000), potential respondents received an eight-page questionnaire and introductory letter in the mail; the letter explained the purpose of the questionnaire and ensured anonymity and confidentiality. Questionnaire sections focused on 1) general snowmobiling experience, 2) snowmobiling during the 2003-2004 season, 3) snowmobiling in the 2004-2005 season, 4) perceptions of snowmobiling, and 5) demographics.

General snowmobiling experience was assessed through open-ended questions about the year first snowmobiled, number of registered snowmobiles, typical experiences, and self assessed skill level. Details on the travel and expenditures in the 2003-2004 season were assessed by tracking the number of times snowmobiling, miles went, gallons of fuel used, days and/or nights spent, the group composition of these experiences as well as expenditures at home, en route, and at the destination. Seven expenditure categories included: grocery and convenience store food and drink, tow vehicle expenses, snowmobile expenses, restaurant and bar meals and drinks, sporting goods, lodging, and all other items. Beyond travel expenses, snowmobiling related expenses for equipment, repair, insurance and storage were also queried. Similar questions were provided for respondents to estimate their 2004-2005 snowmobiling experiences.

For those who did not snowmobile during the 2003-2004 season, a list of potential reasons was provided that consisted of: 1) did not snowmobile anywhere (with an additional query of why they did not), 2) traveled outside Minnesota to snowmobile, and 3) participated in other recreational activities.

Travel for snowmobiling both in and out of Minnesota was of interest. Open-ended questions focused on the number of day and overnight trips for snowmobiling related

travel, trip duration, group composition and group size. Travel to each of the four Explore Minnesota Tourism regions was also of interest. A small map was provided on the questionnaire to ease respondent burden. Similar to the open-ended questions for Minnesota travel, respondents were asked about the number of day and overnight trips outside of Minnesota related to snowmobiling, as well as the typical states visited.

Visitor perceptions of snowmobiling were determined through three questions: 1) important attributes of an experience, 2) desired trail improvements and willingness to pay for such improvements, and 3) conflict experiences. The important attributes were replicated from previous snowmobiling research and consisted of a list of attributes rated on a scale of one to five, where 1 equaled very important and 5 equaled very unimportant. Demographics were assessed through age, education, and income.

Consumer Response Rate

Following a modified Dillman (2000) technique that included an initial survey package (Appendix A), a scenic postcard reminder (Appendix B) one week later, and a replacement questionnaire package mailed two weeks after the postcard (Appendix C), an overall 43.3 percent response rate was obtained (Table C1). Fifteen non-respondents queried by telephone did not significantly differ on select demographic (age) and snowmobiling behavior items (number of times in a typical season, expected days in 2004-2005, skill).

Table C1. Response rate among Minnesota snowmobiler survey respondents, 2004.

	n	%
Initial mailing	1202	
Undeliverable	43	
Unusable	27	
Returned	490	
Response rate		43.3

Analysis

Data were entered, cleaned, and analyzed using SPSS. Descriptive analysis provided means, standard deviations and frequencies to describe the sample and variables of interest. To identify benefit factors, principal components factor analysis was employed utilizing standard criteria of eigen values greater than one, factor loadings 0.40 or greater, and meaningful structure. Seven items failed to load or cross-loaded and were eliminated from further analysis. Cronbach alpha's assessed scale reliability as necessary. Analysis of variance determined significant differences in experience factors by respondents' self-assessed skill level.

CONSUMER PROFILE RESULTS

Respondents' Profiles

Minnesota snowmobiler respondents were mature, Anglo, and employed full-time. Respondents ranged in age from fifteen to 89, with a mean age of 45.1 (Table C2). Survey respondents were primarily male (84.2%), non-Hispanic (98.3%), educated (24.0% tech school, 19.2% some college, and 24.8% college degree), held full-time employment (82.2%) and reported an annual income greater than $50,000 (73.9%), that supported an average of 2.9 people. Average household composition included 2.2 adults 18 years and older, 1.5 children between twelve and seventeen, and 1.7 children aged eleven or younger.

Table C2. Sociodemographic characteristics of survey respondents, 2004.

	Frequency (n)	%
Gender (n=482)		
Male	406	84.2
Female	76	15.8
Total	482	100.0
Age of respondents (M=45.1, SD=11.9, n=478)		
15-19	6	1.3
20-29	41	8.6
30-39	92	19.2
40-49	189	39.5
50-59	92	19.2
60-69	46	9.6
70-79	10	2.1
80-89	2	0.4
Total	478	100.0
Ethnicity (n=322)		
Not Hispanic or Latino	319	99.1
Hispanic or Latino	3	0.9
Total	322	99.1
Race (n =476)		
White	468	98.3
American Indian or Alaska Native	7	1.5
Asian	1	0.2
Native Hawaiian or other Pacific Islander	0	0.0
African American	0	0.0
Other	0	0.0
Total	476	100.0
Education level (n =479)		
Eighth grade	3	.6
High school/GED	118	24.6
Tech school	115	24.0
Some college	92	19.2
College degree	119	24.8

Advanced degree	32	6.7
Total	479	100.0
Employment status (n=481)		
Full time	396	82.2
Retired	46	9.6
Part time	24	5.0
Other	15	3.1
Total	481	100.0
Income (n=444)		
$5,000-9,999	2	0.5
$10,000-14,999	1	0.2
$15,000-24,999	12	2.7
$25,000-34,999	35	7.9
$35,000-49,999	66	14.9
$50,000-74,999	139	31.3
$75,000-99,999	92	20.7
$100,000-124,999	42	9.5
$125,000-149,999	12	2.7
$150,000-174,999	25	5.6
$175,000-more	18	4.1
Total	444	100.0
Number of persons supported by this income (M[1]=2.9, SD=1.4, n=462)		
Household Composition		
Adults 18 or older (M=2.2, SD=0.9, n=463)		
Children 12-17 (M=1.5, SD=0.7, n=141)		
Children 11 or younger (M=1.7, SD=0.8, n=120)		

[1]Where M = mean and S.D = standard deviation

Snowmobilers' Experience Use Profiles

The majority of Minnesota snowmobilers identify themselves as advanced riders (54.3 %). One of five (21%) respondents belong to snowmobiling clubs (Table C3, Figure C1). Almost three quarters (71.9 %) of respondents began riding before 1985. On average, respondents owned two (M=2.0) registered snowmobiles and two (M=1.5) ATV's.

Table C3. Snowmobiling experience among survey respondents, 2004.

	Frequency (n)	%
Year started snowmobiling (M=1980, SD=12.0, n = 462)		
1962-1964	11	2.4
1965-1969	92	19.9
1970-1974	108	23.4
1975-1979	48	10.4
1980-1984	39	8.4
1985-1989	34	7.4

1990-1994	39	8.4
1995-1999	61	13.2
2000-2004	30	6.5
Total	462	100.0
Number of owned registered snowmobiles (M=2.0, SD=1.2, n = 478)		
Number of owned ATVs (M=1.5, SD=0.7, n = 247)		
Belong to a snowmobiling club (n=482)		
Yes	101	21.0
No	381	79.0
Total	482	100.0

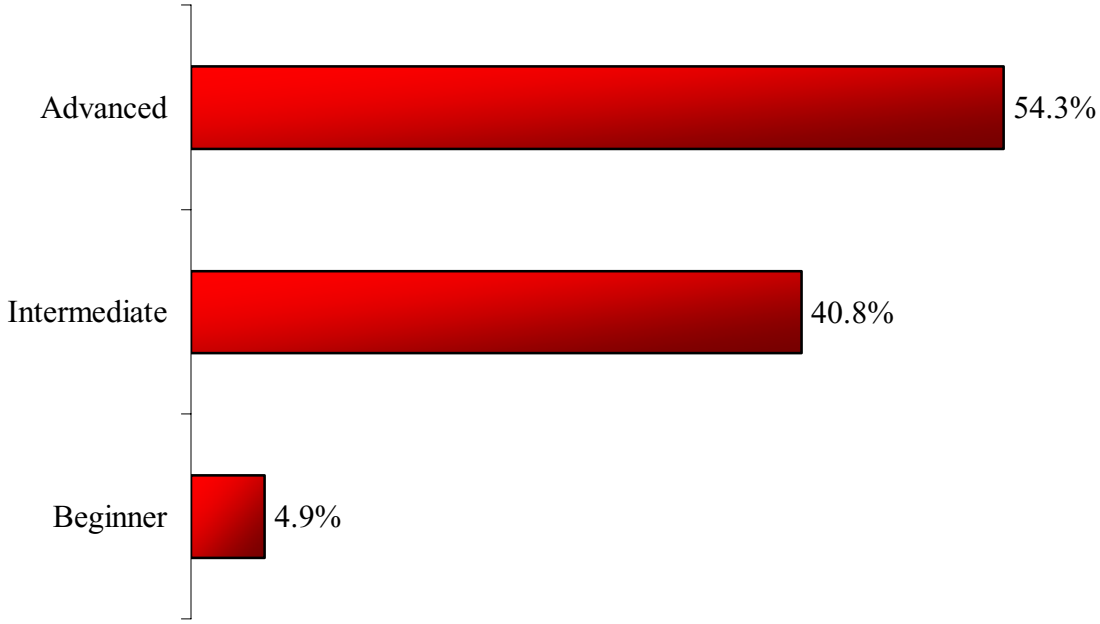


Figure C1. Self-assessed skill level among snowmobiler survey respondents, 2004 (n=462).

Typical Snowmobiling Experience

In a typical snowmobiling season, respondents ride an average of 17.9 times, nearly all in Minnesota (Table C4).[5] Almost two thirds (62.7 %) of respondents indicated they snowmobiled 100 miles or more from their permanent residence an average of 7.1 times. Further, over half (55.5 %) of respondents typically included an overnight stay to snowmobile, with an average of 7.4 overnight trips. Among the respondents who indicated an overnight stay, a majority stayed in hotels, motels, and cabin rentals (56.1%; Figure C2).

[5] This compares to a median of 12.0 days indicating a skewed distribution…..

Table C4. Snowmobiling frequency in a typical winter among survey respondents, 2004.

Number of times snowmobiling (n=467: M= 17.9; SD = 19.7)		
	Frequency (n)	%
1-5	92	19.7
6-10	139	29.8
11-15	66	14.1
16-20	75	16.1
21-25	24	5.1
26-30	22	4.7
31-35	1	0.2
36-40	11	2.4
> 40	37	7.9
Total	467	100.0
Number of times snowmobiling in Minnesota (n=386)		
	Frequency (n)	%
1-5	96	24.9
6-10	111	28.8
11-15	61	15.8
16-20	53	13.7
21-25	17	4.4
26-30	16	4.1
31-35	1	0.3
36-40	6	1.6
> 40	25	6.5
Total	386	100.0
Number of times going snowmobiling 100 miles or more away from the permanent home (n=307; M = 7.1; SD 10.7)		
	Frequency (n)	%
1-3	136	44.3
4-6	83	27.0
7-9	14	4.6
10-12	41	13.4
> 13	33	10.7
Total	307	100.0
Number of times in an overnight snowmobiling experience (n=272; M = 7.4, SD = 21.8)		
	Frequency (n)	%
1-3	145	53.3
4-6	61	22.4
7-9	21	7.7
10-12	23	8.5
> 13	22	8.1
Total	272	100.0

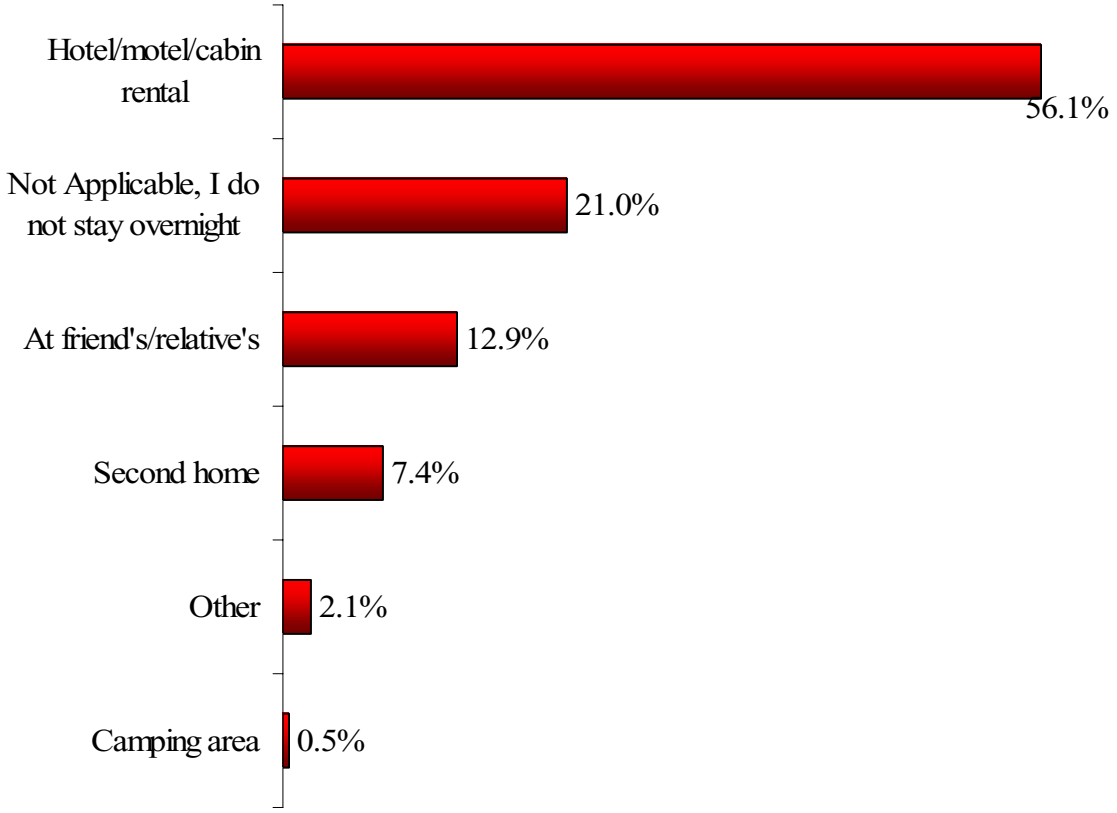


Figure C2. Types of accommodations when staying overnight in a typical snowmobiling experience among survey respondents, 2004 (n=433).

In a typical snowmobile experience, respondents rode an average of 126.3 miles and spend 5.6 hours riding (Table C5). Respondents ride an average of 3.6 days on a typical snowmobile experience, although over three quarters (79.3%) ride three days or less. Among those who stay overnight, respondents typically stay an average of 1.7 nights. Overall, respondents use their snowmobiles an average 11.6 days, not in support of fishing.

Table C5. Snowmobile experience attributes in a typical winter among survey respondents, 2004.

Number of miles (n=485; M = 126.3, SD = 247.8)		
	Frequency (n)	%
1-19	53	10.9
20-39	59	12.2
40-59	97	20.0
60-79	68	14.0
80-99	30	6.2
100-119	89	18.4
120-139	18	3.7
140-159	23	4.7
160-179	4	0.8
180-199	0	0.0
>200	44	9.1
Total	485	100.0

Number of hours (n=483; M = 5.6, SD = 7.0)		
	Frequency (n)	%
0-2	97	20.1
3-5	202	41.8
6-8	145	30.0
9 and more	39	8.1
Total	483	100.0
Number of days (n=421; M = 3.6, SD 5.8)		
	Frequency (n)	%
0-3	334	79.3
4-7	39	9.3
>7	48	11.4
Total	421	100.0
Number of nights (n=38; M= 1.7; SD = 1.7)		
Number of snowmobiling days (not as support for fishing) (n=475; M = 11.6, SD = 13.4)		

The typical snowmobiling group is composed mostly of adult friends and family (48.8%), or only friends (24.8%; Figure C3). Very few (1.8%) respondents snowmobile with organized groups. Typically, a snowmobiler group shares an average of two (M=2.2; Table C6) snowmobiles. Further, average groups are comprised of four (M=4.4) adults. Almost a quarter (21.4%) of respondents indicated their snowmobile party included children (under the age of twelve), of which approximately two (M=2.3) were included. Similarly, over a quarter (31.4%) included teens (twelve or older) in their snowmobile party, and typically consisted of two (M=2.2).

Table C6. Type of snowmobiling groups among survey respondents, 2004.

	M	SD
Number of people in group		
- Children (0-11) (n=105)	2.3	1.6
- Teens (12-17) (n=154)	2.2	1.4
- Adults (18+) (n=424)	4.4	2.8
Number of snowmobiles used (n=472)	2.2	1.7

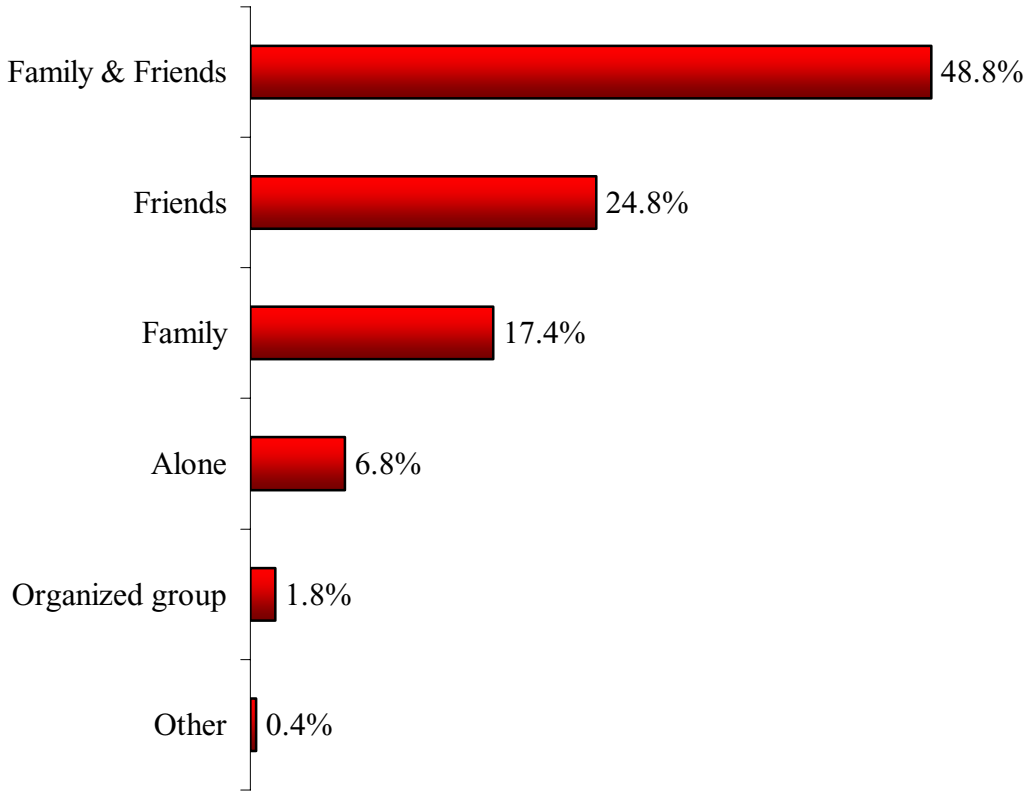


Figure C3. Typical makeup of snowmobiling group among survey respondents, 2004.

Snowmobiling Related Travel

Northern Minnesota is the most frequently used area among snowmobilers who travel within the state (Table C7). More than 4 of 10 respondents (44.0%) travel to the north central/west region and almost a third (31.3%) travel to the northeast region. Most respondents ride in Minnesota. The few who declared they did not typically snowmobile in Minnesota (1.2%), most frequently travel to Wisconsin (71.4 %).

Table C7. Snowmobiling destinations among survey respondents, 2004.

	Frequency (n)	%
Typical area of snowmobiling in Minnesota (n=486)		
North Central/West	214	44.0
Northeast	152	31.3
South	70	14.4
Twin Cities	43	8.8
Do not ride in MN	6	1.2
Do not know	1	0.2
Total	486	100.0
Typical area of snowmobiling outside Minnesota (n=7)		
Wisconsin	5	71.4
Michigan	1	14.3
Montana	1	14.3
Total	7	100.0

When traveling, survey respondents indicated that they spend most in the local destination area where they snowmobile ($338.54; Table C8). These destination expenditures are primarily for lodging, then restaurant and bar meals and drinks. Of the expenditures at home for snowmobiling ($179.17), most are snowmobile related expenses such as fuel ($95.71), followed by tow expenses ($78.85) and groceries ($58.61). En route expenditures ($175.91) are attributed to tow expenses ($80.34) then snowmobile expenses ($66.88). Non-travel related snowmobiler expenses centered on equipment purchase for about one-half of respondents, but included insurance for the majority.

Table C8. Typical expenditures in a snowmobiling experience among Minnesota survey respondents, 2004.

Typical travel expenditures in a snowmobiling experience									
	AT HOME			EN ROUTE			DESTINATION AREA		
	n	M	SD	n	M	SD	n	M	SD
Grocery and convenience store food and drink	221	58.61	71.04	214	30.66	38.00	232	52.33	61.67
Tow vehicle expenses (gasoline, repairs, etc.)	186	79.85	92.06	190	80.34	88.26	147	57.36	53.17
Snowmobile expenses (gasoline, repairs, etc.)	282	95.71	143.44	110	66.88	119.64	279	82.97	111.02
Restaurant and bar meals and drinks	NA			201	59.14	76.65	315	105.16	135.45
Sporting goods	51	53.02	51.50	32	32.34	36.87	67	41.73	58.55
Lodging (motel, camping, rental cabin, etc.)	NA						162	223.15	230.80
All other items (film, souvenirs, etc.)	76	31.58	61.90	50	46.30	69.65	108	51.06	67.78
TOTAL	331	179.17	229.01	298	175.91	250.55	354	338.54	406.19

People covered by these expenditures		
	Frequency (n)	%
Your household only	398	88.4
Your household + Others (M=3.6, SD=2.4)	52	11.6
Total	450	100.0

Other typical Minnesota snowmobiling related expenses for your household			
	Frequency (n)	M	SD
Purchase of equipment not done during a MN trip	199	2,586.41	1,000.00
SMB repair/maintenance not done during a MN trip	286	217.94	244.86
SMB insurance	305	226.15	202.82
Off-season storage costs	54	144.63	210.46
Other expenses not done during a MN trip	30	525.77	1,495.75

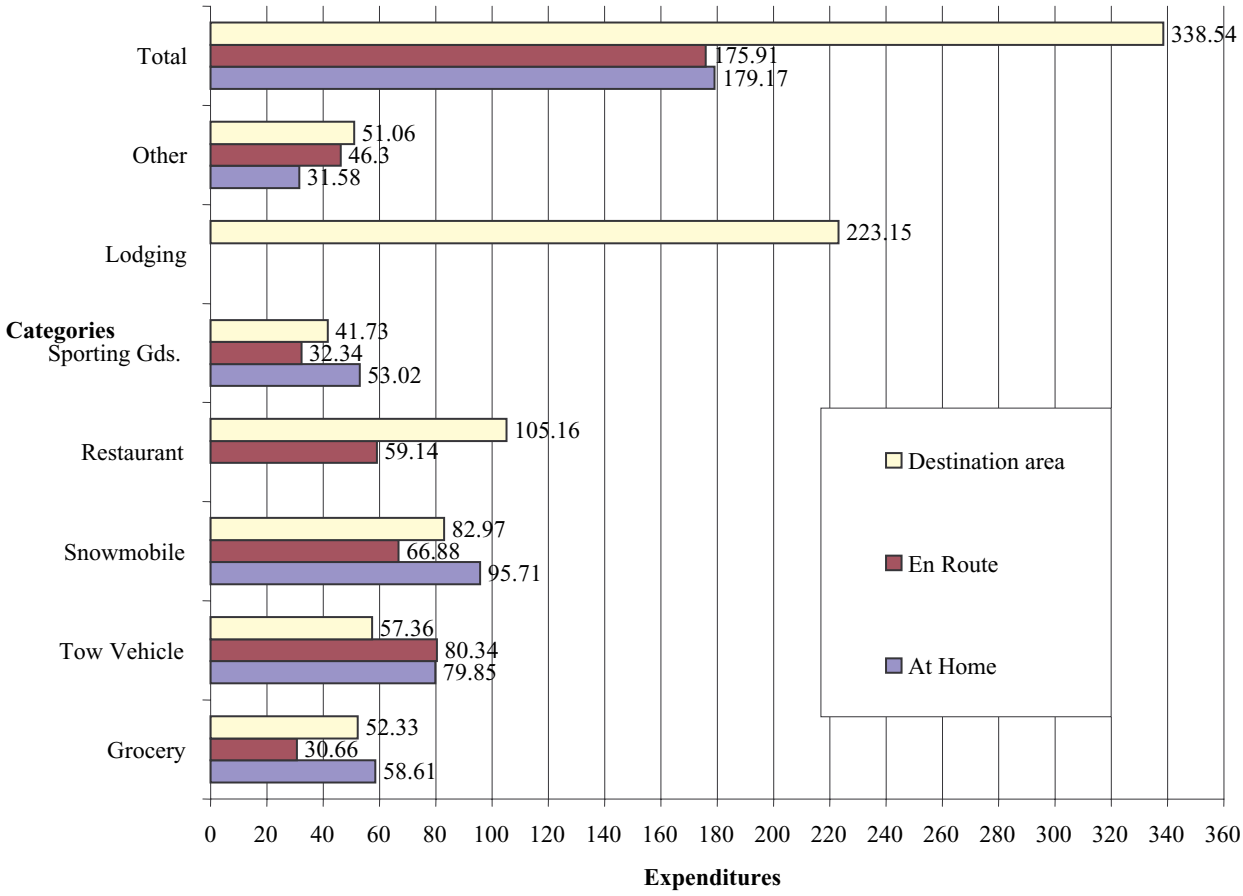


Figure C4: Typical expenditures in a snowmobiling experience among Minnesota survey respondents.

Snowmobiling in 2003-2004 Season

A majority of respondents indicated snowmobiling during the 2003-2004 season. Among them, an average of two (M=1.9; Table C9) adults participated. Of those who indicated snowmobiling with children, approximately two (M=1.5) children between the ages of twelve and seventeen and approximately two (M=1.6) children eleven or younger participated.

Table C9. 2003-2004 season snowmobiling within the household among survey respondents, 2004.

Age groupings & number of each	Number who snowmobiled					Number who snowmobiled in MN				
	n	Freq.	%	M	SD	n	Freq.	%	M	SD
Adults (18+)	444			1.9	0.9	438			1.9	1.0
1		151	34.0				147	33.6		
2		229	51.6				231	52.7		
3		39	8.8				36	8.2		
4		17	3.8				14	3.2		
5		7	1.6				8	1.8		
6		1	0.2							
8							1	0.2		
10							1	0.2		
Total		444	100				438	100		
Children (12-17)	130			1.5	0.8	123			1.5	0.8
1		82	63.1				75	61.0		
2		40	30.8				40	32.5		
3		5	3.8				5	4.1		
4		2	1.5				2	1.6		
5		1	0.8				1	0.8		
Total		130	100				123	100		
Children (11 or less)	85			1.6	.07	88			1.6	0.7
1		42	49.4				44	50.0		
2		35	41.2				35	39.8		
3		7	8.2				8	9.1		
4		1	1.2				1	1.1		
Total		85	100				88	100		

Among those who snowmobiled in the 2003-2004 season, an average of two (M=2.0) snowmobiles were used, with rides averaging 748.4 miles (Table C10). However, almost a third (30.5 %) of respondents indicated riding more than a thousand miles over the course of the season. The average fuel use during the 2003-2004 season was 80.2 gallons.

Table C10. 2003-2004 season snowmobiling miles and machine details among survey respondents, 2004.

Number of snowmobiles used (n=412; M= 2.0, SD = 1.1)			
		Frequency	%
0		6	1.5
1		138	33.5
2		171	41.5
3		53	12.9
4		30	7.3
5		11	2.7
6		2	0.5
7		1	0.2
Total		412	100
Number of miles (n=397; M= 748.4, SD=786)			
		Frequency (n)	%
< 200		90	22.7
200-399		73	18.4
400-599		66	16.6
600-799		30	7.6
800-999		17	4.3
1000-1199		38	9.6
1200-1399		13	3.3
1400-1599		19	4.8
> 1599		51	12.8
Total		397	100.0
Number of gallons of fuel (n=334; M=80.2, SD= 96.0)			
		Frequency (n)	%
0- 20		98	29.3
21-40		63	18.9
41-60		50	15.0
61-80		24	7.2
81-100		26	7.8
101-120		7	2.1
>120		66	19.8
Total		334	100.0

During winter 2003-2004, survey respondents spent more days snowmobiling than in a typical winter. On average, respondents indicated snowmobiling fifteen days (M=14.7; Table C11). Of those days, an average of three (M=3.3) included overnight stays. Further, an average of two (M=1.9) of the days included travel greater than 100 miles, but not an overnight stay.

Table C11. 2003-2004 days snowmobiling among survey respondents, 2004.

Number of days (n=394; M = 14.7, SD = 15.3)		
	Frequency (n)	%
0	7	1.8
1-7	139	35.3
8-14	94	23.9
15-21	87	22.1
22-28	17	4.3
>29	50	12.7
Total	394	100.0
Number of overnight out of the total number of snowmobiling days (n=401; M = 3.3, SD = 4.9)		
	Frequency (n)	%
0	168	41.9
1-3	108	26.2
4-6	59	14.7
7+	66	17.2
Total	401	100.0
Number of days involving traveling 100 or more one way to snowmobile, but didn't include overnight stays, out of the total number of snowmobiling days (n=337; M = 1.9, SD = 4.4)		
	Frequency (n)	%
0	193	57.3
1-3	88	26.1
4-6	30	9.0
7+	26	7.0
Total	337	100.0

The few who did not snowmobile in the 2003-2004 season cited various reasons. Respondents most frequently chose some sort of constraint to participation (Table C12). From the pre-selected constraint list, respondents most frequently chose 'other reasons' (61.0 %). Among those who specified 'other reasons', they most frequently cited no snow, health issues, out of work, or no snowmobiles. Another primary participation constraint among respondents was too busy (29.3 %). When other recreational activities were cited as reasons for not participating, ATV (25.0 %) riding was the primary activity cited. Other specified recreational activities that replaced snowmobiling included ice fishing, hunting, snowboarding, or movies. Among those who did not snowmobile in Minnesota during the 2003-2004 season, several respondents traveled to other areas instead, with Wisconsin the most frequently visited snowmobile destination (54.5 %).

Table C12. 2003-2004 season explanations for no Minnesota snowmobiling among survey respondents, 2004.

	Frequency (n)	%
Reasons for not snowmobiling (n=41)		
Other reasons	25	61.0
Too busy	12	29.3
Too busy and other reasons	2	4.9
Too busy and no one to go with	1	2.4
Too expensive and no one to go with	1	2.4
Total	41	100.0
Take part of other recreational activities (n=20)		
Other	6	30.0
ATV	5	25.0
ATV and ice skating	2	10.0
Ice Skating	2	10.0
Skiing	1	5.0
ATV and skiing	1	5.0
ATV and 'other'	1	5.0
Skiing and 'other'	1	5.0
ATV, ice skating, skiing	1	5.0
Total	20	100.0
Places outside Minnesota for snowmobiling (n=33)		
Wisconsin	18	54.5
Michigan	4	12.1
Idaho	4	12.1
Montana	3	9.1
Canada	3	9.1
Wyoming	1	3.0
Total	33	100.0

Estimations for 2004-2005 Season

Of those who estimated their snowmobiling in the next season, respondents indicated they will snowmobile 6.9 days in the 2004-2005 season (Table 13). Almost three quarters (74%) of the respondents indicated they intended to snowmobile for a week or less, and of those, almost half (49%) intended to snowmobile three days or less. Among those who specified an intended overnight stay to snowmobile, the average number of nights was 4.2. Among those who intend to snowmobile in Minnesota, the average number of days was 6.0. However, over half (60.2 %) intended to snowmobile three days or fewer. Among those who intended to include an overnight stay in Minnesota, the average was 2.9 nights. Overall, respondents intended to snowmobile an average of 8.9 days, not in support of fishing.

Table C13. 2004-2005 expected snowmobiling frequency among survey respondents, 2004.

Number of days (n =204; M = 6.9, SD = 9.0)		
	Frequency (n)	%
0	16	7.8
1-3	84	41.2
4-6	48	23.6
7-9	11	5.4
10+	45	22.2
Total	204	100.2
Number of experiences that will be in Minnesota (n=191; M = 6.0, SD = 9.6)		
	Frequency (n)	%
0	32	16.8
1-3	83	43.1
4-6	32	16.8
7-9	8	4.2
10+	36	18.7
Total	191	100.0
Number of nights in Minnesota (n=19; M = 2.9, SD =2.1)		
Number of snowmobiling days (not as support for fishing; n=373; M = 8.9, SD = 14.1.)		
	Frequency (n)	%
0	21	5.6
1-3	168	45
4-6	62	16.6
7-9	10	2.6
10+	112	29.9
Total	373	100.0

In the 2004-2005 season, the next snowmobiling experience is forecasted to include an average of two household members (M=2.4; Table C14). Further, over two thirds (69.3%) of the respondents predict that no more than two household members will be involved. On average, respondents intend to use two (M=1.9) Minnesota registered snowmobiles. Few respondents (14.5%) intend to use more than two registered snowmobiles.

Table C14. Composition of next snowmobiling group among survey respondents, 2004.

			M	SD
Number of people from individual households who will be involved (n=462; M = 2.4, SD = 1.5)			2.4	1.5
	Frequency (n)	%		
1	125	27.1		
2	195	42.2		
3	53	11.5		
4	56	12.1		
> 4	33	7.1		
Total	462	100.0		
Number of MN registered snowmobiles used (n=456; M = 1.9, SD = 1.2)			1.9	1.2
	Frequency (n)	%		
1	186	40.8		
2	204	44.7		
> 2	66	14.5		
Total	456	100.0		

Northern Minnesota was the most frequently anticipated snowmobiling destination in 2004 among respondents (Table C15). A majority of respondents indicated they will either snowmobile in the north central/west region (38.0%) or the northeast region (33.5%) of Minnesota. Among those who do not intend to snowmobile in Minnesota, Wisconsin was specified as the primary (53.5%) destination, followed by Montana (41.9%).

Respondents, on average, intend to travel 162.8 miles from their permanent residence to reach their snowmobile destination (Table C16). More than one quarter (25.9%) of respondents intend to travel 50 miles or less.

Table C15. 2004-2005 expected snowmobiling destinations among survey respondents, 2004.

	Frequency (n)	%
North Central/West	176	38.0
Northeast	155	33.5
South	50	10.8
Not in Minnesota	34	7.3
Wisconsin	23	53.5
Montana	18	41.9
Wyoming	1	2.3
Michigan	1	2.3
Total	43	100.0
Twin Cities	25	5.4
Don't know	23	5.0
Total	463	100.0

Table C16. Distance to travel from permanent home for next snowmobiling experience among survey respondents, 2004.

Number of miles that this region will be from the permanent home (n=328; M = 162.8, SD = 195.8)		
	Frequency (n)	%
1-50	85	25.9
51-100	71	21.6
101-150	56	17.1
151-200	56	17.1
>200	60	18.3
Total	328	100.0

When traveling, survey respondents anticipate spending most in the destination area where they snowmobile ($355.33; Table C17). These local expenditures will be primarily for lodging, then restaurant and bar meals and drinks. Of the anticipated expenditures at home for snowmobiling ($153.44), they are divided rather equally among fuel, tow expenses and groceries. En route expenditures ($190.34) are attributed to tow expenses, then snowmobile expenses, followed closely by restaurant and bar meals and drinks. Non-travel related snowmobiler expenses will center on equipment purchase for only about one-quarter of respondents, whereas almost half anticipate repairs and insurance costs.

Table C17. Expected expenditures in next snowmobiling experience among survey respondents, 2004.

Expected travel expenditures in next snowmobiling experience									
	AT HOME			**EN ROUTE**			**DESTINATION AREA**		
	n	M	SD	n	M	SD	n	M	SD
Grocery and convenience store food and drink	162	65.91	82.60	151	40.63	55.76	161	57.39	69.97
Tow vehicle expenses (gasoline, repairs, etc.)	139	64.77	73.58	141	84.69	92.83	108	56.20	50.62
Snowmobile expenses (gasoline, repairs, etc.)	190	77.11	103.20	80	78.38	136.27	211	90.68	107.74
Restaurant and bar meals and drinks				145	62.81	68.38	235	110.43	125.54
Sporting goods	29	35.93	46.35	16	25.94	29.96	37	39.59	53.05
Lodging (motel, camping, rental cabin, etc.)				28	189.46	164.32	104	230.63	225.77
All other items (film, souvenirs, etc.)	45	28.89	42.78	31	44.68	56.71	80	54.00	76.46
TOTAL	236	153.44	189.20	211	190.34	264.45	257	355.33	426.73

Other expected Minnesota snowmobiling related expenses for your household			
	Frequency (n)	M	SD

Purchase of equipment	104	2,392.20	3,132.43
Repair/maintenance not done during a MN snowmobiling trip	247	193.96	197.75
SMB insurance	282	222.92	183.93
Off-season storage costs	39	94.82	96.90
Other expenses	24	198.29	247.41

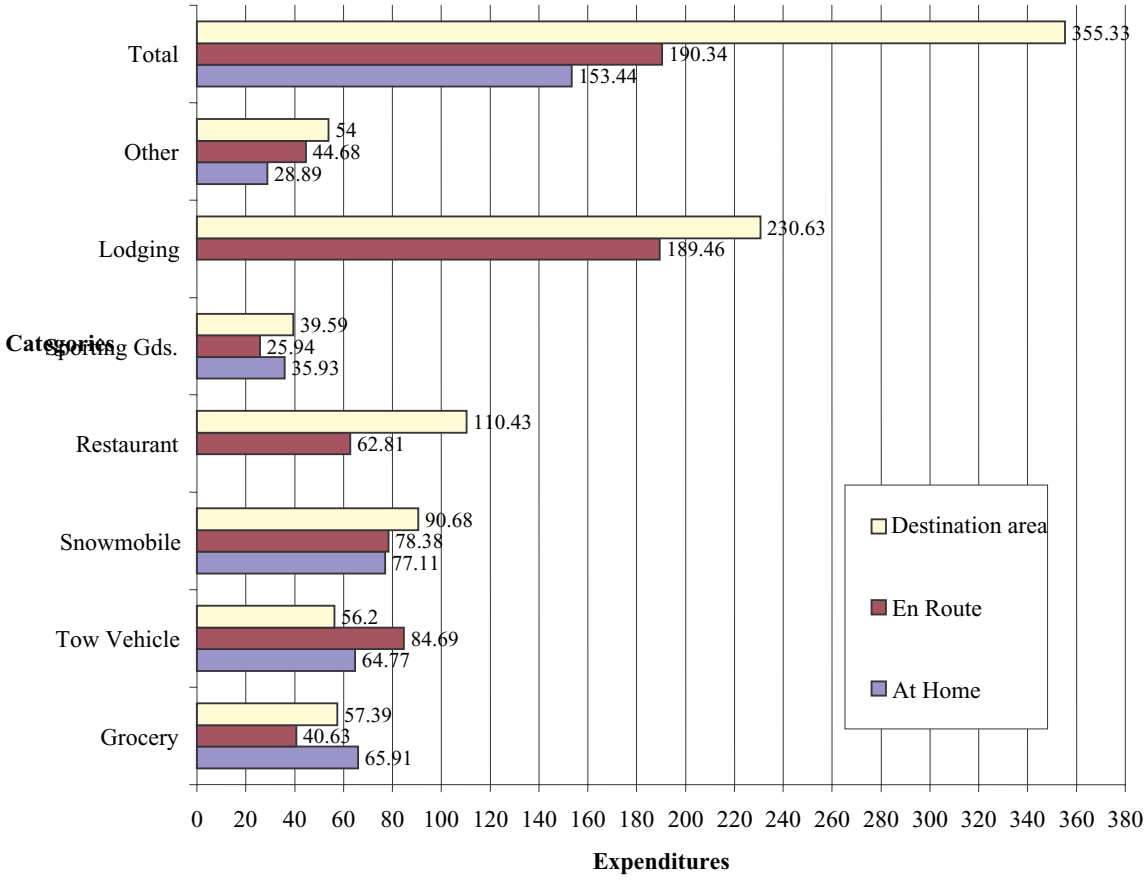


Figure C5. Expected expenditures in next snowmobiling experience among survey respondents, 2004.

Perceptions of Snowmobiling

The most important experience attribute among Minnesota snowmobilers was 'being with friends and family' (M=1.5; Table C18). 'Seeing exhilarating scenery', 'getting away from it all', and 'feeling in control of the vehicle' tied as the second most important experience attributes (each M=1.8). The least important attributes were 'doing technical rides' (M=3.5), 'showing others you can do it' (M=3.5), and 'the opportunity to get lost' (M=3.8). None of the experience attributes queried were considered unimportant, as illustrated by their average rating score.

Table C18. Important experience attributes among Minnesota snowmobiling mail survey respondents, 2004.

	M[1]	S.D.
Being with friends/family (n= 473)	1.5	0.8
Getting away from it all (n= 470)	1.8	0.9
Feeling in control of the vehicle (n= 471)	1.8	0.9
Seeing exhilarating scenery (n= 471)	1.8	0.9
Being in a natural area (n= 470)	1.9	0.9
Knowing where you are on trail (n= 468)	2.1	1.0
Seeing wildlife (n= 472)	2.1	1.0
Having exciting experiences (n= 468)	2.2	1.0
Seeing new areas (n= 468)	2.2	0.9
Riding to destinations (n= 469)	2.4	1.0
Viewing unfamiliar landscapes (n= 463)	2.4	1.0
Being aware of trail difficulty before you start (n= 469)	2.5	1.1
Feeling secluded (n= 469)	2.5	1.1
Feeling self-reliant (n= 469)	2.5	1.0
Riding challenging trails (n= 468)	2.6	1.1
Having a thrilling ride (n= 468)	2.7	1.2
Getting exercise (n= 470)	2.8	1.1
Knowing how long the ride will take (n= 469)	2.8	1.1
Riding in a familiar area (n= 468)	2.9	1.1
Studying nature (n= 466)	2.9	1.1
Feeling power (n= 468)	3.0	1.2
Getting a good workout (n= 469)	3.0	1.1
Meeting other people (n= 469)	3.0	1.1
Testing yourself (n= 464)	3.2	1.1
Riding off established trails (n= 468)	3.3	1.1
Doing technically difficult rides (n= 469)	3.5	1.1
Showing others you can do it (n= 466)	3.5	1.1
Having the opportunity to get lost (n= 468)	3.8	1.0

[1]Rated on a scale from 1 to 5, where 1=very important and 5=very unimportant

Four factors that explained 59.8% of the variance emerged as important to snowmobiling: skill/achievement, novel natural areas, familiarity, and exercise (Table C19). The skill/achievement factor consisted of seven items, which explained 24.5% of the variance (ζ = .87): riding challenging trails, doing technically difficult rides, having exciting experiences, feeling power, testing self, having a thrilling ride, and showing others you can do it. The novel nature areas factor included four items and explained 14% of the variance (ζ=.71): being in a natural area, feeling secluded, viewing unfamiliar landscapes, and seeing new areas. The familiarity factor included four items and explained 10.9% of the variance (ζ=.55): riding in a familiar area, meeting other people, knowing where you are on trails, and knowing how long the ride will take. The exercise factor consisted of just two items but explained 9.4% of the variance (ζ = .77): getting exercise and getting a good workout.

In terms of average score, experiencing nature in novel areas was most important, followed by familiarity. When examining the importance of the factors among respondents in self reported skill levels, those who rated themselves 'expert' indicated significantly higher importance to skill/achievement than the 'intermediate' group ($F=19.02$, $p < .05$).

Table C19. Factor loadings for important experience items among snowmobiling survey respondents, 2004.

	Factors			
Items	Skill/ Achievement	Novel natural areas	Familiarity	Exercise
Testing myself	.85			
Feeling power	.84			
Having a thrilling ride	.80			
Doing technically difficult rides	.76			
Riding challenging trails	.66			
Having exciting experiences	.58			
Showing others you can	.58			
Feeling secluded		.77		
Being in a natural area		.75		
Seeing new areas		.68		
Viewing unfamiliar landscapes		.66		
Knowing how long the ride will be			.68	
Knowing where you are			.67	
Riding in a familiar area			.63	
Meeting other people			.55	
Getting exercise				.89
Getting a good workout				.75
Eigen value	4.16	2.38	1.85	1.60
Alpha (ζ)	.87	.71	10.9	9.4
Variance explained (%)	24.5	14	10.9	9.4
M	2.9	2.2	2.7	2.9

Trail Improvements and Willingness to Pay for Improvements

Snowmobilers cited a series of improvements that they would like to see in the Minnesota trail system (Figure C6). The most frequently cited improvements included trail signage and grooming. Over a quarter (27.4%) of respondents indicated more or/and improved trail signage. Similarly, over a quarter (25.8%) desired more or/and improved grooming. Further, several respondents wished to see more or/and wider trails (16.1%). Among those who cited other improvements (16.1%), they included better facilities such as parking and rest areas, less paved trails, and more snow. Very few (5.7%) respondents specified fewer limitations on the trails.

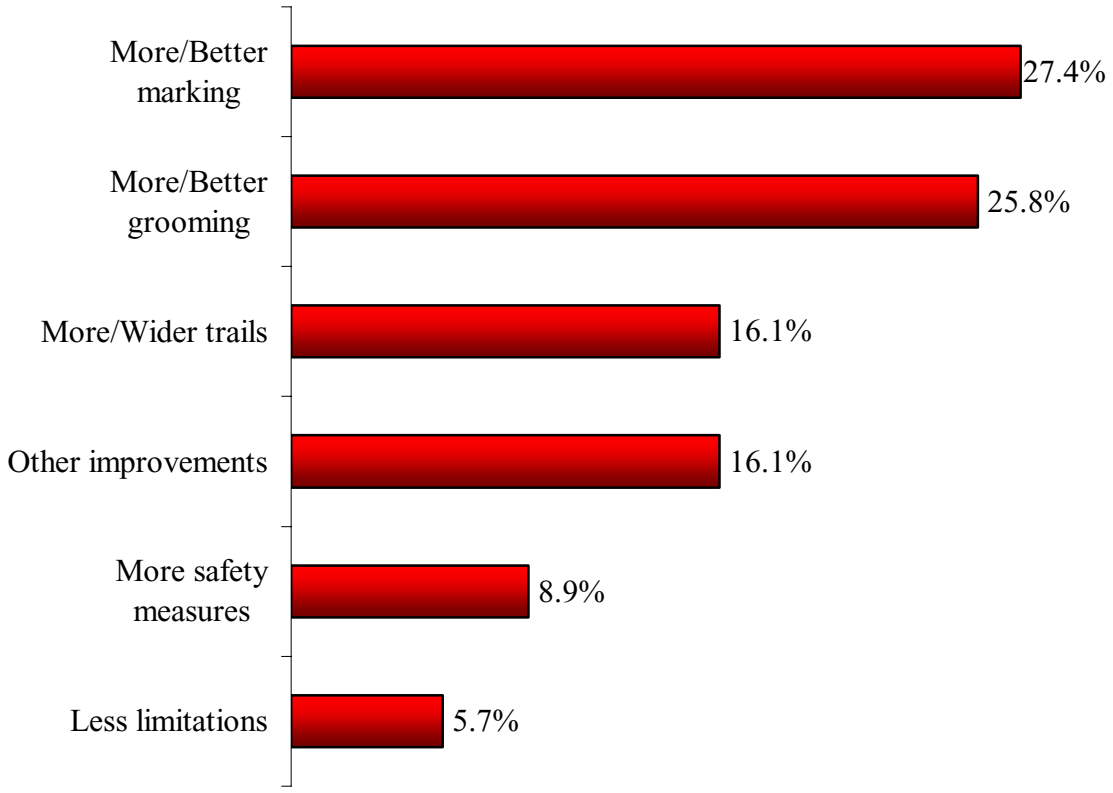


Figure C6. Cited improvements to the trail system among survey respondents, 2004 (n=372).

More than half of respondents supported an increase in the state trail sticker to pay for the improvements (57.1%; Figure C7). Further, respondents were willing to pay, on average, an additional $17.80 for trail improvements (Table C20). However, the median value respondents were willing to pay was less ($10.00). The range was evenly distributed among four categories: $5.00 or less, $6.00 to $10.00, $11.00 to $20.00, and $21 or more (Table C20).

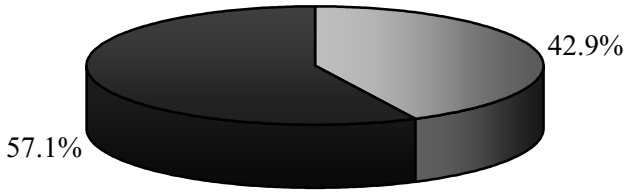


Figure C7. Willingness to support an increase in the cost of the state trail sticker to pay for this improvement (n = 438).

Table C20. Amount willing to pay for the improvement of the Minnesota snowmobile trail system among survey respondents, 2004.

Additional dollars willing to be paid for the state snowmobiling trail sticker (n=175; M = 17.80; Mdn = 10.0, SD = 18.9)		
	Frequency (n)	%
0.1-5	50	28.6
6-10	48	27.4
11-20	39	22.3
21-30	19	10.9
>30	19	10.9
Total	175	100.0

When asked to specify if anything interfered with their snowmobile experience, over two thirds (69.4%) of respondents identified something. Of those, almost a half (44.4%) cited the lack of snow in Minnesota (Figure C8). Further, almost one quarter (19.1%) suggested that constraints such as work, family, or other hobbies interfered with their snowmobiling. Slightly fewer (15.3%) respondents cited DNR/State involvement or lack of involvement, such as poor maintained trails or too much regulation. Further, less than a tenth (7.4%) cited recklessness of other drivers interfered with their snowmobiling experience.

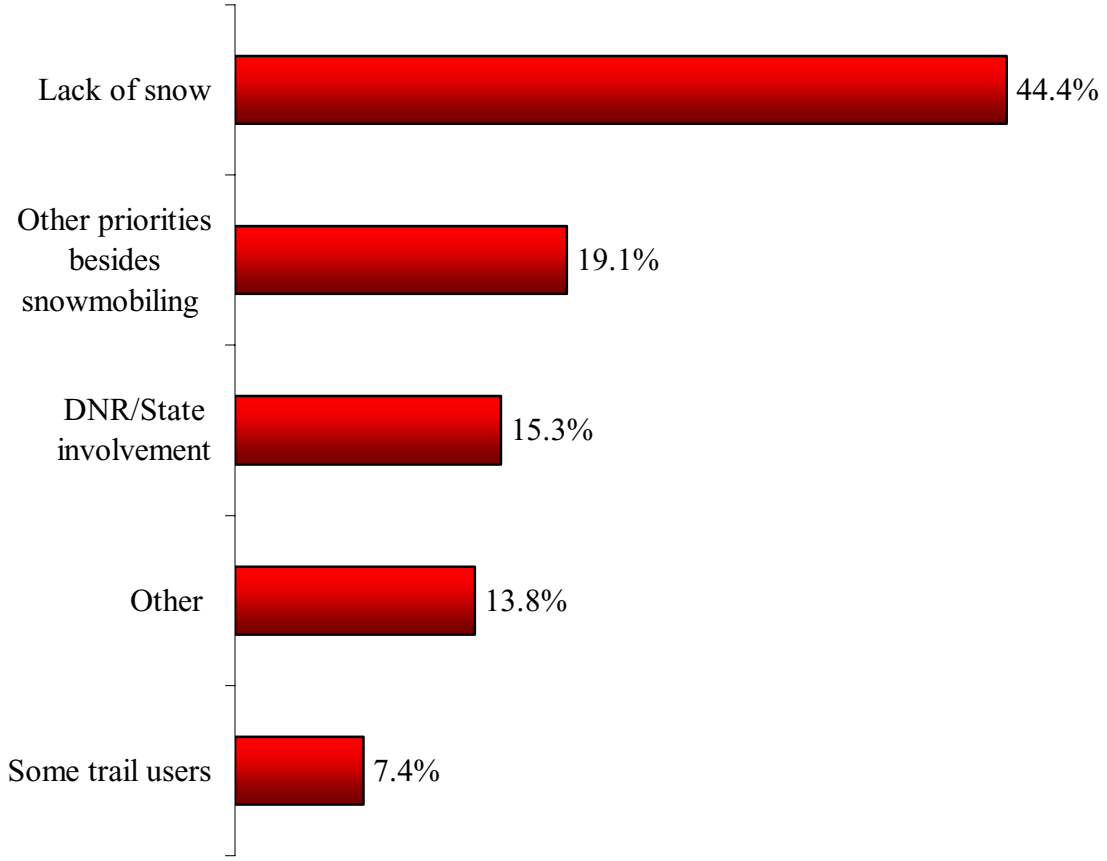


Figure C8. Interferences with snowmobiling experience among survey respondents, 2004 (n=340).

Comparison of 2004 to 1996 Sample

The ratio of males to females is approximately the same as in the 1996 study (Figure C9), but the average snowmobiler is a bit older and started snowmobiling a bit later (Table C21 & Figure C10). The 2004 respondent indicated a greater education level than the 1996 respondent (Figure C11).

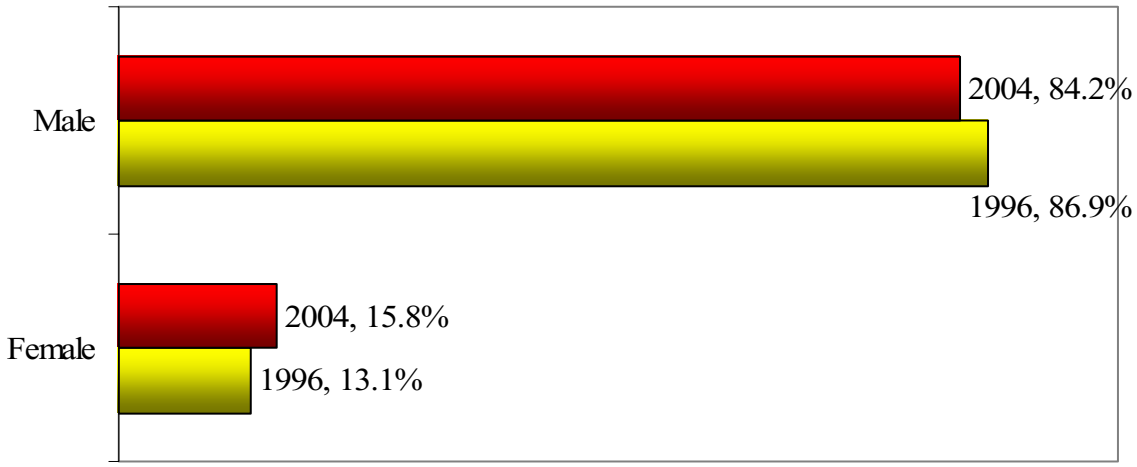


Figure C9. Gender comparisons between snowmobiler survey respondents 2004 and 1996.

Table C21. Demographic comparison of 1996 and 2004 sample.

	1996			2004		
	n	M	SD	n	M	SD
Age	229	40.9	12.9	478	45.1	11.9
Year began snowmobiling	217	1978	10.2	462	1980	12.0

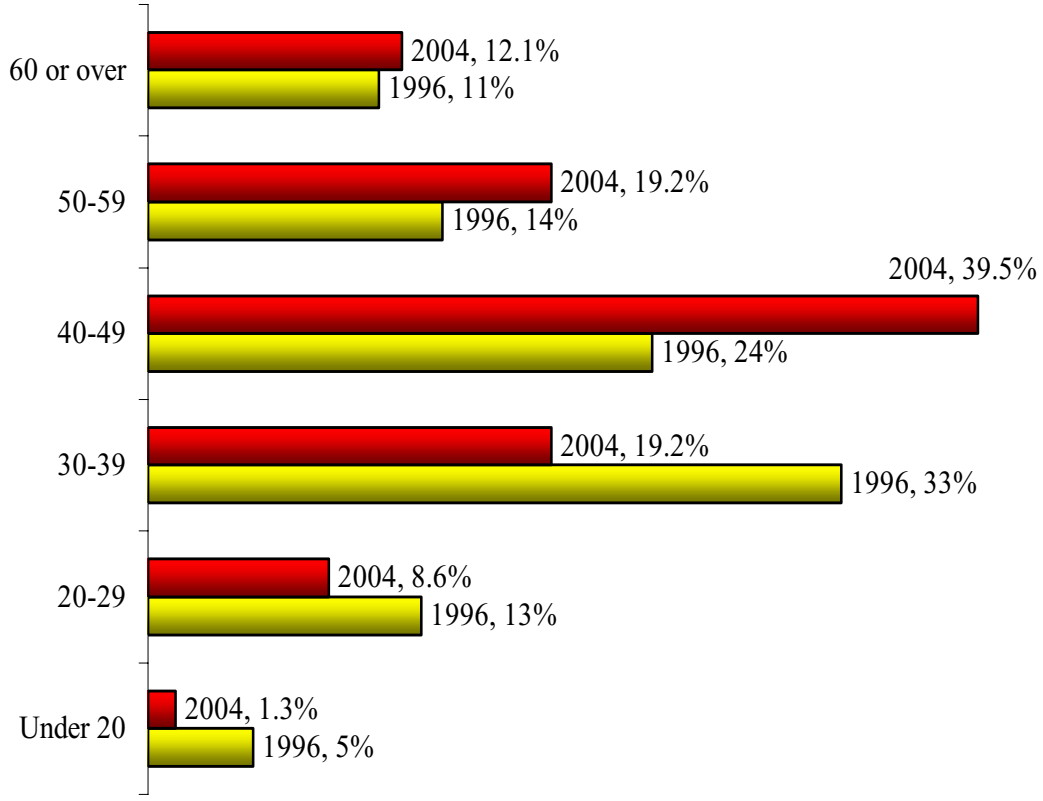


Figure C10. Age comparisons between snowmobiler survey respondents 2004 and 1996.

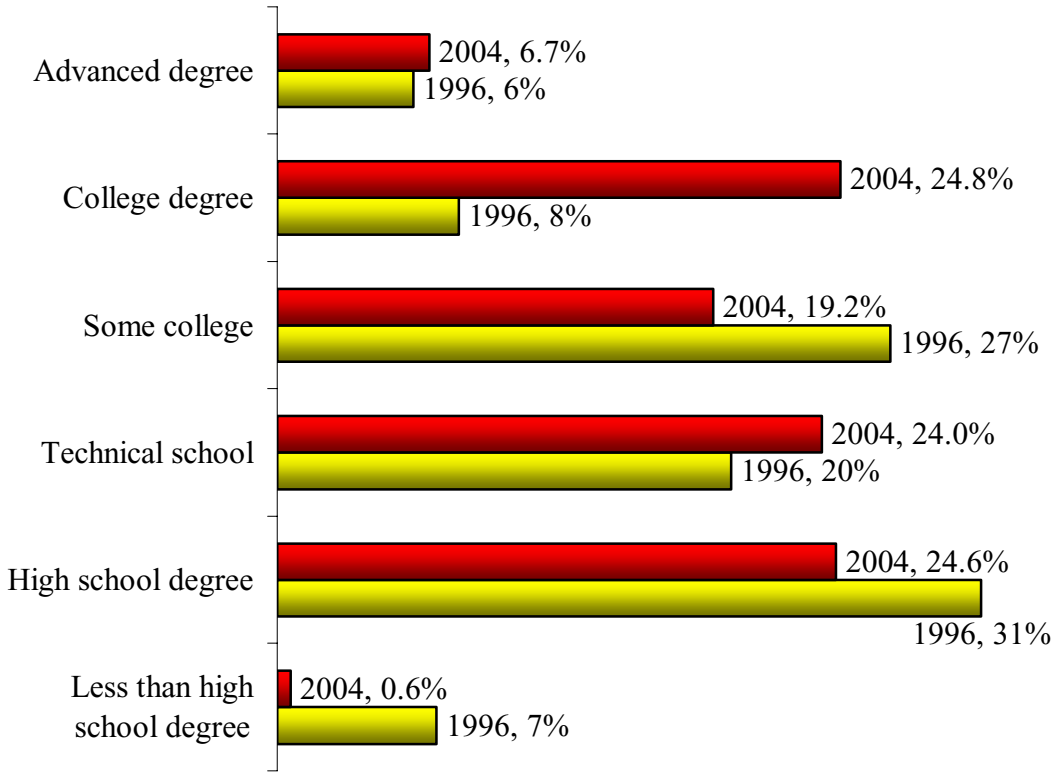


Figure C11. Education level comparisons of snowmobiler survey respondents 2004 to 1996.

A larger proportion of snowmobilers (54.3%) declared that they were expert riders in 2004 than in 1996 (46.5%; Figure C12). However, a slightly larger number indicated they were beginners in 2004 (4.9%) than in 1996 (2.6%).

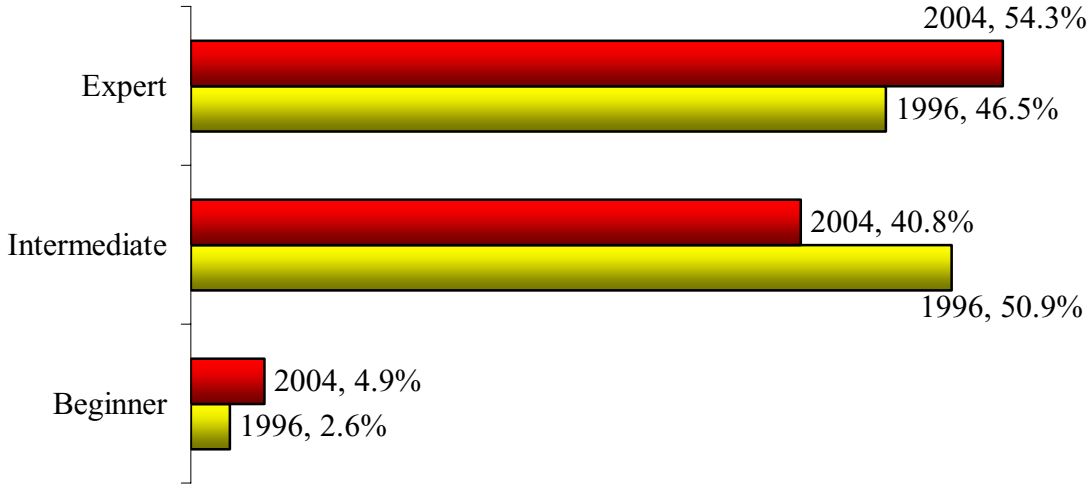


Figure C12. Self-rated skill level comparisons of snowmobiler survey respondents 2004 to 1996.

In 1996, snowmobilers rode more frequently, longer, and further in a typical winter than in 2004 (Table C22). Also, in 2004 more overnight trips were reported than in 1996 (7.4 times versus 3.1 times, respectively), but fewer vehicle use overall.

Snowmobiling experiences still occur primarily in north central and northeast Minnesota. Similar to 1996 findings (Limbeck, 1997), being with family and friends is a primary motivation for snowmobiling, as is being in a natural setting (Figure C13). Membership in snowmobiling clubs declined about 8% since 1996 (Figure C12).

Table C22. Snowmobiling experience comparison of 1996 and 2004.

	1996			2004		
	n	M	SD	n	M	SD
Times go snowmobiling in typical winter	223	20.8	18.8	467	17.9	19.7
Times go on overnight trips in typical winter	226	3.1	4.3	272	7.4	21.8
Miles for a typical snowmobile ride	228	142.2	316.7	485	126.3	247.8
Hours for a typical snowmobiling ride	225	5.0	2.5	483	5.6	7.0
Number of vehicles in a typical group	222	4.9	3.1	472	2.2	1.7
Number of adults in a typical group	204	4.5	2.9	424	4.4	2.8

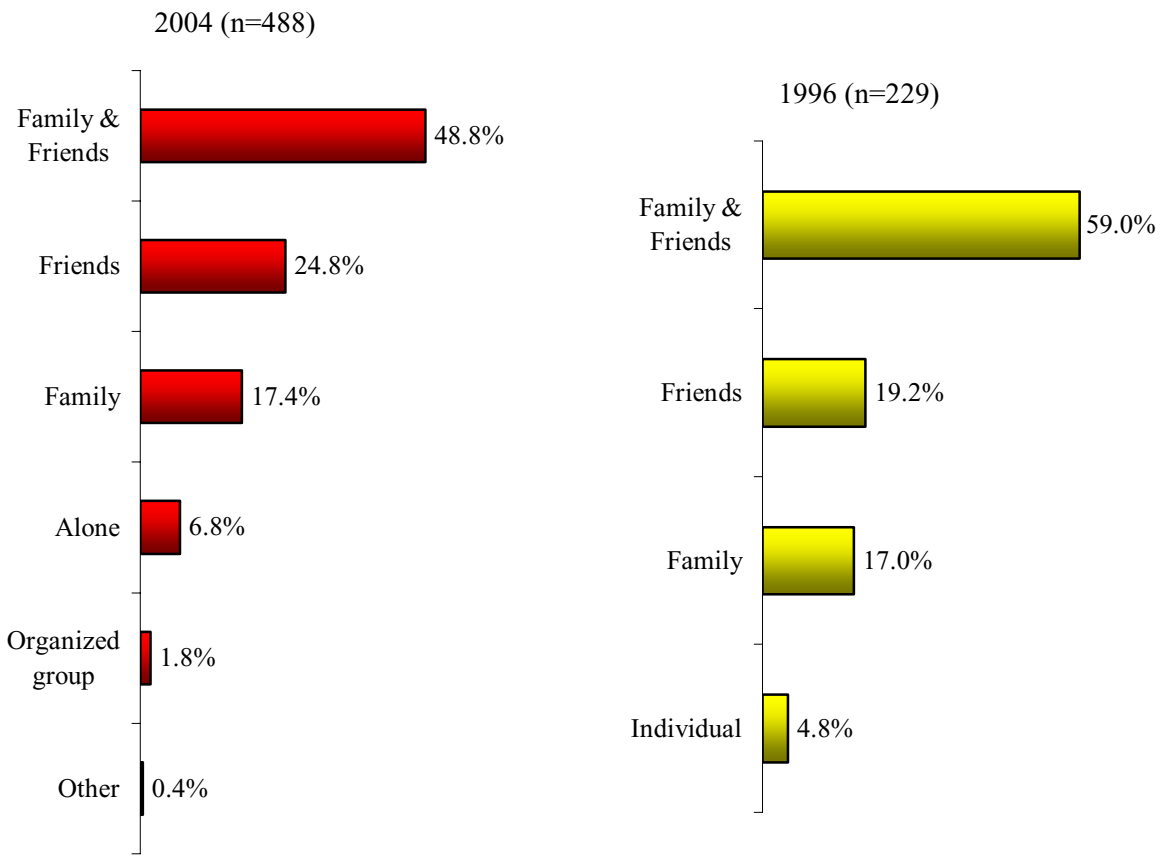
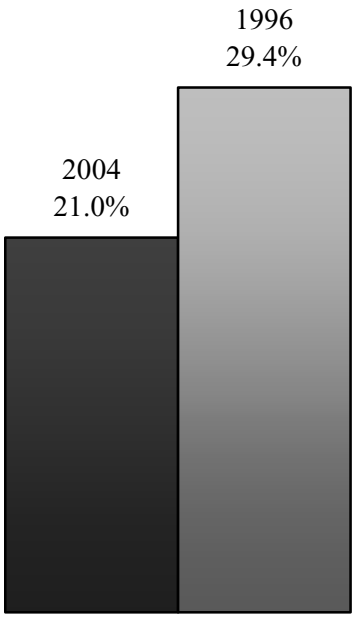


Figure C13. Typical group comparisons of snowmobiler survey respondents 2004 to 1996.



C14. Snowmobiling club membership comparison of survey respondents 2004 to 1996.

DISCUSSION: CONSUMER PROFILE

The 2004 registered snowmobiler in Minnesota mirrors both national and state statistics in that they are a middle-aged non-Hispanic male with some college education. However, the Minnesota snowmobiler is more frequently white, college educated, and male than the average Minnesotan (U.S. Census, 2000). National data indicates that this 'boomer' also has specific desires for novelty (National Travel Monitor, 1998), family accommodations (Chon & Singh, 1995), as well as flexible opportunities: educational, cultural, or sport experiences (Cato & Knustler, 1988). Another potentially important consideration as this group matures is physical accessibility and participation rates (TIA, 2003).

The number of snowmobiles used in 2004 was half the number used per experience in 1996. Although reasons for this remain empirically uncertain, speculation about a maturing market that self-identifies as an advanced rider leads to conclusions about smaller groups and couples.

Two of the four factors important to Minnesota snowmobilers were similar to May et al. findings (2001): achievement/stimulation and enjoy nature. Similarly, two of the four factors were comparable to McLaughlin and Pardice's (1980) findings where general nature experiences and physical exercise were important. In contrast, Wyoming results included factors of being with family and friends and escaping physical pressure. Given

that the only skill/achievement factor differed by self-reported skill level, programming and marketing should focus on the central importance of socialization and natural areas.

These factors important to the Minnesota snowmobilers are critical for MNUSA and its efforts to increase and retain members. Despite an increase in the number of registered snowmobiles from 1996, club membership has decreased. Certainly organizations across the U.S. have been afflicted by the decrease in social capital (Putnam, 2000). However, opportunity to market to and provide for the important factors in Minnesota snowmobiling remains paramount. Future research could clearly identify the perceived benefits of and constraints to club membership, as well as the performance of MNUSA on important factors to the members.

Attention to the physical exercise could be extremely beneficial to enhance participation and secure programming or planning dollars from state and federal governments. Physical inactivity is a root cause of a variety of negative health conditions, including coronary heart disease, colon cancer, high blood pressure, and adult onset diabetes. About 75 percent of the U.S. population does not get enough physical activity to meet recommended guidelines, defined as 30 minutes of moderate physical activity every day, and 25 percent of the population is completely inactive during leisure time (Ewing, Schmid, Killingsworth, & Raudenbush, 2003). The percent of U.S. residents who are obese or overweight is at an all time high (65%) and, in 2000, poor diet and physical inactivity accounted for 400,000 actual deaths in the U.S (U.S. Department of Health & Human Services, 2004). A partnership among public land agencies, recreation organizations, and health professionals, among other organizations, meets the multi-pronged approach suggested by HHS to reach all individuals with physical activity opportunities and messages (U.S. Department of Health & Human Services, 2004) as well as other calls for collaboration on these issues (Goodman & Miller, 2003). To enhance health benefits on public lands, baseline information on both realized health benefits and constraints to these benefits is needed. Additional research to determine both the perceived and real health benefits of snowmobiling is suggested.

Related to experiences, 69.4% of respondents indicated something interfered with their experience. While more than half of respondents suggested constraints related to the environment or their personal lives, 7.4% indicated other riders as the source of interference. Although conflict has a negative connotation, it can be a positive as it indicates systemic inefficiencies and keeps the organization at a higher level of stimulation. Visitor conflict is pervasive and its magnitude is fairly constant in recreation management. For more than 20 years, outdoor recreation conflict has been identified as one of manager's most common and difficult problems (Hammitt, 1988). Studies indicate anywhere from five to 40 percent of visitors encounter some interference during their experience. Fortunately, the potential for conflict resolution among recreationists is high compared to conflicts between other groups (Floyd, Germain, & ter Horst, 1996). Schneider (2004) found that "…individuals frequently cope without the need for management intervention. Still, these seemingly unmanaged responses rely heavily on well communicated established rules." Therefore, working to disseminate and educate about appropriate trail behavior seems in order.

Similar to research in New York (1998) and Cook County (2003), respondents indicated they were willing to pay for enhanced experiences in terms of trail grooming and signage. These issues remain important to Minnesota snowmobilers as the 1996 results indicated that grooming and signage were important when selecting a trail. The average amount respondents in the survey were willing to pay was $17, but the median was $10. Considering a fee increase of $10 seems most prudent.

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APPENDIX A:

Minnesota Snowmobiler Questionnaire

Dear Minnesota Snowmobiler,

We recently sent you a questionnaire to explore your interests and preferences related to snowmobiling. If you have already completed the questionnaire—thank you! If not, please do so. We have selected a small number of people to share their views and therefore, every questionnaire is important.

As a reminder, this project is in cooperation with the Minnesota United Snowmobiler Association and Department of Natural Resources and conducted through the University of Minnesota. The enclosed survey should take just 15 minutes to complete and will enhance the management of, and your experiences at, various snowmobiling areas across Minnesota.

All the information you provide is completely voluntary, confidential, and anonymous. Once our mailing procedures are complete, your name will be removed. If you have any questions or concerns about the survey, please feel free to phone me at 612.624.2250 or email me at ingridss@umn.edu.

Sincerely,

Ingrid E. Schneider, Ph.D.
Project leader

First, a few questions about your snowmobiling experience in general.

1. What year did you begin snowmobiling? 19____ OR 200____ ___CAN'T REMEMBER

2. How many snowmobiles do you have registered in MN? _____ SNOWMOBILES

3. How many times do you go snowmobiling in a typical winter? _____ TIMES
   Of these, how many are in Minnesota ___ IN MINNESOTA
   Of these, how many are overnight? ___ OVERNIGHT
   How many are 100 miles or more from your permanent home? ____ 100+

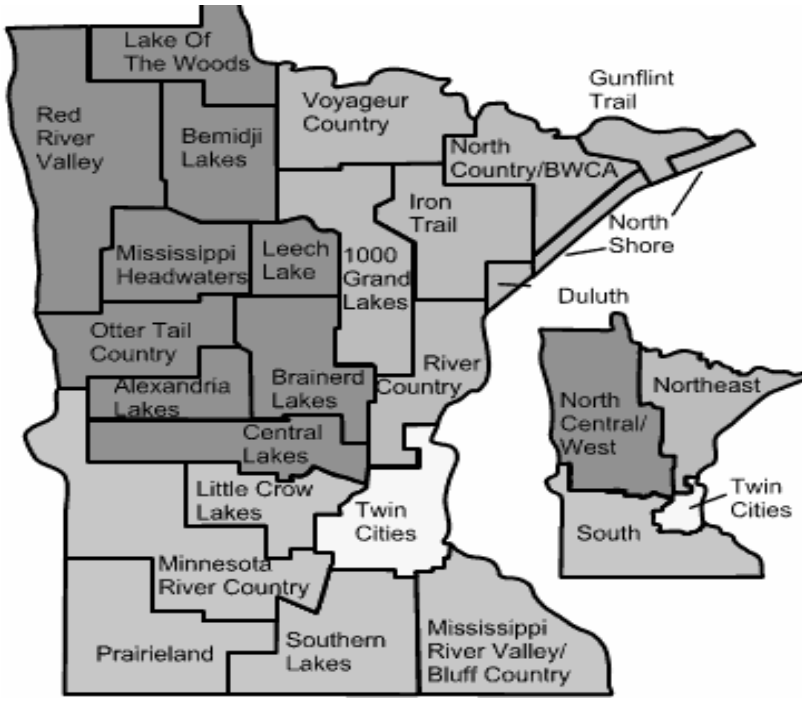
4. When on an overnight snowmobiling experience, what type of accommodations do you most frequently choose? (· one)

   ___ HOTEL/MOTEL/CABIN RENTAL
   ___ CAMPING AREA
   ___ MY SECOND HOME
   ___ AT FRIEND'S/RELATIVE'S
   ___ OTHER
   ___NOT APPLICABLE, I DO NOT STAY OVERNIGHT

5. How would you rate your skill level as a snowmobiler? (· one)
   ___ BEGINNER ___ INTERMEDIATE ___ ADVANCED

6. Which area do you most often snowmobile in Minnesota? (· one)

   ___ NORTHEAST
   ___ NORTH CENTRAL/WEST
   ___ SOUTH
   ___ TWIN CITIES
   ___ DO NOT KNOW
   ___ DO NOT RIDE IN MN
   IF NOT, WHERE DO YOU RIDE MOST OFTEN?
   _____



7. How many <u>miles</u> is a <u>typical</u> snowmobiling experience for you? _____ MILES

8. How many <u>hours</u> is a <u>typical</u> snowmobiling experience for you? _____HOURS

9. How many <u>days or nights</u> is your typical snowmobiling experience?
___DAYS OR ___NIGHTS

10. What is the typical makeup of your snowmobiling group? (· one)

____ I AM ALONE	___ FAMILY	___ORGANIZED GROUP
___ FRIENDS	___ FAMILY & FRIENDS	___OTHER

11. Including yourself, approximately how many individuals are in your typical snowmobiling group:

CHILDREN (0 -11) _____ # TEENS (12-17) _____ # ADULTS (18+) _____

12. How <u>many of your snowmobiles</u> are used during your typical experience? _____

13. How many days are the snowmobiles used for snowmobiling (not as support for fishing) during your typical snowmobiling experience? _____ DAYS

14. How much money does your household spend on the entire experience? Please complete the table below for spending at home <u>prior to departure,</u> <u>traveling</u> to and from the snowmobiling area, and in the local area <u>where you rode</u>. If you spend nothing on an item, please leave it blank.

	AT HOME	EN ROUTE	LOCAL AREA

Grocery and convenience store food and drink	$ .00	$ .00	$ .00
Tow vehicle expenses (gasoline, repairs, etc.)	$ .00	$ .00	$ .00
Snowmobile expenses (gasoline, repairs, etc.)	$ .00	$ .00	$ .00
Restaurant and bar meals and drinks	**NA**	$ .00	$ .00
Sporting goods (bait, fishing tackle, etc.)	$ .00	$ .00	$ .00
Lodging (motel, camping, rental cabin, etc.)	**NA**	$ .00	$ .00
All other items (film, souvenirs, etc.)	$ .00	$ .00	$ .00
TOTAL	$ .00	$ .00	$ .00

15. Whom do these expenditures cover (· one)?
___YOUR HOUSEHOLD ONLY ___YOUR HOUSEHOLD + OTHERS (HOW MANY _____?)

16. Beyond travel, what are your typical yearly Minnesota snowmobiling related expenses for your household (if 0, leave blank)?
PURCHASE OF EQUIPMENT (SNOWMOBILE, TRAILER, ETC.) ……...$ _____.00
SNOWMOBILE REPAIR/MAINTENANCE NOT DONE DURING A MN TRIP…...$_____.00
INSURANCE ON YOUR SNOWMOBILE ……..…$_____.00
OFF-SEASON STORAGE COSTS ……$_____.00
OTHER (EXPLAIN _____) ……$_____.00

Now a little bit about winter 2003-2004.

17. Please complete the following table to describe the people in your household and their involvement in snowmobiling. **If there are no people in a certain category, please write 0 for that category.**

	NUMBER IN HOUSEHOLD	NUMBER WHO SNOWMOBILED WINTER OF 2003-2004	NUMBER WHO SNOWMOBILED IN MN WINTER OF 2003-2004
ADULTS 18 OR OLDER			
CHILDREN 12-17			
CHILDREN 11 AND YOUNGER			

18. If no one from your household snowmobiled in Minnesota in the 2003-2004 season, what did you do (· all that apply)?
___ DID NOT SNOWMOBILE ANYWHERE
WHY? ___ TOO BUSY __ TOO EXPENSIVE ___NO ONE TO GO WITH

___OTHER (EXPLAIN _____)

___ TRAVELED OUTSIDE MN TO SNOWMOBILE (WHERE? _____)

___ PARTICIPATED IN OTHER RECREATIONAL ACTIVITIES (· ALL THAT APPLY)
___ATV ____ICE SKATING ___ SKIING
___ OTHER (EXPLAIN _____)

___ NOT APPLICABLE- I DID RIDE IN MINNESOTA

If no one from your household snowmobiled in Minnesota in the 2003-2004 season, please skip to QUESTION 24 on the next page

19. How many snowmobiles did you use during 2003-2004 season? _____

20. About how many miles did you snowmobile during 2003-2004 season? _____

21. How many gallons of fuel did you use during 2003-2004 season? _____

22. How many days did you snowmobile during 2003-2004 season? _____

23. Of the total number of snowmobiling days, how many:
- ¢ Involved overnight stays away from your permanent home? _____NIGHTS
- ¢ Involved traveling 100 miles or more one way to use snowmobile, but didn't include overnight stays? _____TRIPS MORE THAN100+

Now, a few questions about the upcoming 2004-2005 season.

24. How many days or nights do you plan to spend on your next experience?
___DAYS OR ___NIGHTS ___ DO NOT KNOW
How many of these will be in Minnesota?
___DAYS OR ___NIGHTS

25. In what region will your next experience be primarily focused (· one)?
___ NORTHEAST ___ NORTH CENTRAL/WEST ___ SOUTH
___ TWIN CITIES ___ DON'T KNOW ___ NOT IN MN (WHERE? _____)

26. How many miles will this be from your permanent home? _____ MILES

27. How many people from your household will be involved during your next experience?
_____PEOPLE

28. How many of your MN registered snowmobiles will be used on your next experience?
____ SNOWMOBILES

29. How many days will the snowmobiles be used for snowmobiling **(not as support for fishing or other activities)** during your next experience? _____ DAYS

30. How much money will your household spend on the entire experience? Please complete the table below for spending at home prior to departure, traveling to and from the snowmobiling area and in the local area where you rode. If you will spend nothing on an item, please leave it blank.

	AT HOME	EN ROUTE	LOCAL AREA
Grocery and convenience store food and drink	$ .00	$ .00	$ .00
Tow vehicle expenses (gasoline, repairs, etc.)	$ .00	$ .00	$ .00
Snowmobile expenses (gasoline, repairs, etc.)	$ .00	$ .00	$ .00
Restaurant and bar meals and drinks	NA	$ .00	$ .00
Sporting goods (bait, fishing tackle, etc.)	$ .00	$ .00	$ .00
Lodging (motel, camping, rental cabin, etc.)	NA	$ .00	$ .00
All other items (film, souvenirs, etc.)	$ .00	$ .00	$ .00
TOTAL	$ .00	$ .00	$ .00

31. Whom will these expenditures cover (· one) ?

___YOUR HOUSEHOLD ONLY OR ____YOUR HOUSEHOLD + _____ # OTHERS?

32. What will be your household's Minnesota snowmobiling related expenses in the 2004-2005 season?

PURCHASE OF SNOWMOBILE EQUIPMENT (TRAILER, ETC.) …….....$_____.00
REPAIR/MAINTENANCE NOT DONE DURING A MN SNOWMOBILING TRIP …...$_____.00
INSURANCE ON YOUR SNOWMOBILE ……..…….$_____.00
OFF-SEASON STORAGE COSTS ……$_____.00
OTHER (EXPLAIN _____) ……...…..…$_____.00

Now, some questions about your perceptions of snowmobiling.

33. Indicate how important each of the following is in general when you go snowmobiling (circle **one answer for each row**).

	VERY IMPORTANT	IMPORTANT	UNSURE	NOT IMPORTANT	VERY UNIMPORTANT
Getting exercise	1	2	3	4	5
Being in a natural area	1	2	3	4	5
Riding challenging trails	1	2	3	4	5
Seeing exhilarating scenery	1	2	3	4	5
Feeling secluded	1	2	3	4	5
Seeing wildlife	1	2	3	4	5
Being with friends/family	1	2	3	4	5
Feeling self-reliant	1	2	3	4	5

Studying nature	1	2	3	4	5
Getting away from it all	1	2	3	4	5
Riding in a familiar area	1	2	3	4	5
Meeting other people	1	2	3	4	5
Doing technically difficult rides	1	2	3	4	5
Riding off established trails	1	2	3	4	5
Knowing where you are on trail	1	2	3	4	5
Viewing unfamiliar landscapes	1	2	3	4	5
Being aware of trail difficulty before you start	1	2	3	4	5
Having exciting experiences	1	2	3	4	5
Feeling power	1	2	3	4	5
Testing yourself	1	2	3	4	5
Knowing how long the ride will take	1	2	3	4	5
Having the opportunity to get lost	1	2	3	4	5
Having a thrilling ride	1	2	3	4	5
Seeing new areas	1	2	3	4	5
Feeling in control of the vehicle	1	2	3	4	5
Showing others you can do it	1	2	3	4	5
Riding to destinations	1	2	3	4	5
Getting a good workout	1	2	3	4	5

34. Please list the ONE improvement you would most like to see in the Minnesota snowmobile trail system.

_____

35. Would you be willing to support an increase in the cost of the state snowmobile trail sticker to pay for this improvement?

_____YES _____NO

If yes, how much more would you be willing to pay? $_____

36. What, if anything, interferes with your snowmobiling experience?

_____

Finally, a few questions about you.

37. Do you belong to a snowmobiling club? ___ YES ___ NO

38. How many ATVs do you own? _____ # OF ATV

39. What is your 5 digit home zip code? _____

40. What year were you born? 19___

41. Are you…? ___ MALE OR ___ FEMALE

42. What is the highest level of education you have completed (circle one)?

EIGHTH GRADE	HIGH SCHOOL/ GED	TECH SCHOOL	SOME COLLEGE	COLLEGE DEGREE	ADVANCED DEGREE

43. In what ethnicity and race would you place yourself?

Ethnicity**:**

_____HISPANIC OR LATINO

_____ NOT HISPANIC OR LATINO

Race (check all that apply):

____ AMERICAN INDIAN OR ALASKA NATIVE

_____ ASIAN

_____ BLACK OR AFRICAN AMERICAN

_____ NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER

_____ WHITE

_____ OTHER (EXPLAIN:)

44. What is your employment status? (check one):

___EMPLOYED FULL TIME ___EMPLOYED PART TIME ___RETIRED ___OTHER

45. What is your annual household income (before taxes)?

____ LESS THAN $5,000	_____ $5,000-9,999	_____ $10,000-14,999
_____ $15,000-24,999	_____ $25,000-34,999	_____ $35,000-49,999
_____ $50,000-74,999	_____ $75,000-99,999	_____ $100,000 -124,999
_____ $125,000-149,999	_____$150,000-174,999	_____$175,000 OR MORE

46. How many people are supported by this income? _____PERSON/S

If you have any other comments, please write them here. Thanks for your input.

_____

_____

_____

_____

_____

Please mail the completed questionnaire back in the postage-paid envelope provided.

THANK YOU FOR YOUR PARTICIPATION!

If you want more information about this study, contact Dr. Ingrid Schneider,
115 Green Hall, 1530 Cleveland Avenue North, St. Paul, MN 55108-1027;
612-624-2250; ingridss@umn.edu

APPENDIX B : POSTCARD REMINDER

Dear Minnesota Snowmobiler:

We recently contacted you concerning your snowmobiling experiences. If you have already completed a questionnaire, accept our sincere thanks. If you've not already done so, please complete the survey and return it by mail. For a replacement survey, call 612.624.2250 or email elis0009@umn.edu.

Your response will improve your next snowmobiling experience: please reply today. Thanks!

Sincerely,

Ingrid E. Schneider, Ph.D.
Project leader

APPENDIX C : MINNESOTA RETAILER QUESTIONNAIRE

Minnesota Snowmobile Industry Questionnaire

Greetings,

In cooperation with the Minnesota United Snowmobiler Association, the University of Minnesota is interested in identifying the economic activity and impact of the snowmobile industry in Minnesota. This information can improve our knowledge about and enhance support for this important industry.

The enclosed survey should take just 10 minutes to complete. Please return the survey in the enclosed, self-addressed, postage-paid envelope within two weeks of receipt. All the information you provide is completely voluntary, confidential, and anonymous. Once our mailing procedures are complete, your name will be removed.

If you have any questions or concerns about the survey, please feel free to phone me at 612.624.2250 or email me at ingridss@umn.edu.

Sincerely,

Ingrid E. Schneider, Ph.D.
Project leader

First, a few questions about your MN snowmobile retail and manufacturing opeoperations.

1. Do you sell snowmobiles or snowmobile equipment/accessories directly to consumers (i.e. a retail sales division)? ____YES ____NO

   If YES, what is the approximate dollar amount of your annual retail sales of snowmobiles and related items (2003)?
   $ _____SNOWMOBILE RELATED RETAIL

   Approximately what percentage of these annual retail sales are to people outside of Minnesota? ___ % SALES TO OUTSIDE MN

2. Please complete the following table for all your employees that work on snowmobile retail sales (including administrative, R&D, etc.).

Worker Classification	NUMBER OF WORKERS	AVG ANNUAL HOURS EACH EMPLOYEE WORKS ON SNOWMOBILE RETAIL	AVG HOURLY WAGE
Part-Time			$
Full-Time			$

Now a few questions about your manufacturing-related operations in Minnesota.

3. Please complete the following table for all your employees that work directly on snowmobile manufacturing (including administrative, R&D, etc.).
4.

Worker Classification	NUMBER OF WORKERS	AVG ANNUAL HOURS EACH EMPLOYEE WORK ON SNOWMOBILE MANUFACTURING	AVG HOURLY WAGE
Part-Time			$
Full-Time			$

5. What is your estimated total snowmobile equipment manufacturing costs?
   $_____

   Of the total above, please indicate in column A the total value of material your company purchases from each supplier industry listed below. In column B, please indicate the percentage of those materials that are purchased from companies located in Minnesota. (Please indicate only those materials purchased for your snowmobile operations.)

ex: If $1.0 million of your total manufacturing costs for snowmobile and goes to the purchase of fabricated metal products, fill in $1.0 million in column A next to fabricated metal products. If $500 000 worth of fabricated metal products was purchased from Minnesota companies, fill in 50% in column B.

Supplier Industry	A Total Value of Purchases	B Percent Purchased From MN Companies
Castings, sheer metals and other primary metals		%
Fabricated metal products, including forgings and stampings		%
Non-electric equipment, including combustion engines and metal working machinery		%
Computers and other electric equipment, including motors and generators		%
Axles, brakes, undercarriages, and other metal vehicular parts		%
Paints, varnishes, lacquers, stains, enamels, etc.		%
Plastic products in form of sheets, rods, tubes, etc.		%
Business services such as advertising, computer services and legal services		%
Other (please describe)		%
Other (please describe)		%

Lastly, Now, a bit about any other snowmobiling operations. in Minnesota.

6. Do you have other costs associate for snowmobiles that are not accounted for in the retail or manufacturing sections? ____YES ____NO

   If YES, what are they?

   _____---

   _____-

   If YES, what is the approximate dollar amount of your annual other operational costs (2003)?

$ _____SNOWMOBILE OPERATIONS IN MN - UNCLEAR WHAT THIS IS

7. Please complete the following table for all your employees that work on other snowmobile operations (including administrative, R&D, etc.):

s:

Worker Classification	NUMBER OF WORKERS	AVG ANNUAL HOURS EACH EMPLOYEE WORKS ON OTHER SNOWMOBILE OPERATIONS	AVG HOURLY WAGE
Part-Time			$
Full-Time			$

7. What functions are included in the operations cited above?

Would you like a copy of the study results? ____YES ____NO

Company: _____

Your position: _____

Email: _____

THANK YOU!

If you want more information about this study, contact Dr. Ingrid Schneider,
115 Green Hall, 1530 Cleveland Avenue North, St. Paul, MN 55108-1027;
612-624-2250; ingridss@umn.edu

APPENDIX D : POSTCARD REMINDER

Dear Minnesota Snowmobile Industry Representative

We recently contacted you concerning your snowmobiling industry expenditures. If you have already completed a questionnaire, accept our sincere thanks. If you've not already done so, please complete the survey and return it by mail. For a replacement survey, call 612.624.2250 or email elis0009@umn.edu.

Your response will help us understand and support this important industry- please reply today. Thanks!

Sincerely,

Ingrid E. Schneider, Ph.D.

Project leader

APPENDIX E

Background on Regional Economic Models, Inc. (REMI) Model

The Department of Employment and Economic Development (DEED) uses a statewide economic model built by Regional Economic Models, Inc. (REMI) to conduct impact analysis of programs, various job creation proposals and legislative fiscal initiatives. We have analyzed other economic models and found that REMI is currently the best tool to measure economic impacts.

REMI has been widely used by organizations in Minnesota. REMI built the first Minnesota model in late 1980's for the Department of Revenue (DOR), and subsequent updates of the model have been used by DOR, DTED (now DEED), the Department of Public Service (now Commerce), the Pollution Control Agency and the Office of Environmental Assistance. Minnesota Power and Northern States Power (Xcel Energy) also have used REMI models for their service areas. In addition to Minnesota users, federal agencies and state agencies in 35 states use REMI economic models.

REMI is built on extensive economic research and a solid theory. The model's formulation and estimation came from extensive research of economic data from the U.S. Department of Commerce and other agencies. Two recent surveys of economic impact studies and related regional models published in the Journal of Regional Science and a review in Cato Journal place REMI among the best impact models.

REMI is a dynamic input-output model that adjusts all model variables as impacts are estimated. Once the data is input, the model simulates increased sales and purchases among Minnesota businesses, suppliers of capital and labor, consumers, government, importers and exporters and other entities interacting in the local economy. These interactions produce year-to-year estimates of total economic impacts, composed of direct project impacts, and indirect and induced impacts or 'ripple effects' on the economy. In contract, static models measure only the one-time effect of economic change. As noted by the U.S. Dept. of Commerce, dynamic models provide more precise and defensible results than static models.

REMI provides comprehensive user support. REMI has a strong client/user group that meets annually to share model applications and evaluate new features. REMI staff provides extensive data and concept support to its users, while the user group provides valuable feedback. This improves model performance and utility. DEED has consulted with REMI staff on such applications as minimum wage proposals.

REMI continues to improve the model. Annual model updates use large amounts of local data, which improves its performance, particularly under conditions of structural economic change. REMI also accounts for business cycles and new national economic policies and forecasts.

APPENDIX F :

Total Resident and Nonresident Economic Impacts – Three Scenarios (Million 2004 $)

RESIDENT TRAVEL	Low	Middle	High
Total Employment	1,964	2,315	2,437
GSP State Product/Contribution to the State Economy (Nominal million $)	100.3	106.8	118.3
Gross receipts/sales (Nominal million $)	198.1	211.3	233.4
Wages & Salaries (Nominal million $)	44.3	52.2	55.1
State Tax Revenues (Nominal million $)	8.0	9.4	10.1
Local Tax Revenues (Nominal million $)	2.9	3.4	3.6
RESIDENT NONTRAVEL			
Total Employment	143	149	156
GSP State Product/Contribution to the State Economy (Nominal million $)	10.6	11.0	11.0
Gross receipts/sales (Nominal million $)	20.1	21.0	21.0
Wages & Salaries (Nominal million $)	4.9	5.1	5.3
State Tax Revenues (Nominal million $)	0.8	0.8	0.9
Local Tax Revenues (Nominal million $)	0.3	0.3	0.3
NONRESIDENT TRAVEL			
Total Employment	208	254	301
GSP State Product/Contribution to the State Economy (Nominal million $)	11	13	13
Gross receipts/sales (Nominal million $)	19.0	23.1	23.1
Wages & Salaries (Nominal million $)	4.7	5.7	6.7
State Tax Revenues (Nominal million $)	0.9	1.1	1.2
Local Tax Revenues (Nominal million $)	0.3	0.4	0.4
TOTAL			
Total Employment	2,315	2,718	2,893
GSP State Product/Contribution to the State Economy (Nominal million $)	121.5	130.7	142.2
Gross receipts/sales (Nominal million $)	237.1	255.4	277.5
Wages & Salaries (Nominal million $)	53.8	62.9	67.1
State Tax Revenues (Nominal million $)	9.7	11.3	12.2
Local Tax Revenues (Nominal million $)	3.4	4.0	4.3

Source: Analysis & Evaluation Office, DEED, Use of REMI to analyze 2003 Snowmobile Survey results
REMI Model Version 6.0

APPENDIX G : SUMMARY RESPONSES TO CONSUMER QUESTIONNAIRE

First, a few questions about your snowmobiling experience in general. What year did you begin snowmobiling? 19____ OR 200____ ___CAN'T REMEMBER

M[1] = 1980, SD =12.0, n =462

1. How many snowmobiles do you have registered in MN? _____ SNOWMOBILES
   M =2.0 , SD =1.2 , n =478

2. How many times do you go snowmobiling in a typical winter? _____ TIMES
   M =17.9 , SD = 19.7, n =467
   Of these, how many are in Minnesota? IN MINNESOTA
   M = 16.1, SD = 19.0, n = 386
   Of these, how many are overnight? ___ OVERNIGHT
   M = 7.4, SD = 21.8, n = 272
   How many are 100 miles or more from your permanent home? ____ 100+
   M = 7.1, SD = 10.7, n = 307

3. When on an overnight snowmobiling experience, what type of accommodations do you most frequently choose? (· one)
   (n =433)

   6.1%___ HOTEL/MOTEL/CABIN RENTAL 0.5%___ CAMPING AREA
   7.4%___ MY SECOND HOME 12.9%___ AT FRIEND'S/RELATIVE'S
   2.1%___ OTHER 21.0%___NOT APPLICABLE, I DO NOT STAY OVERNIGHT

4. How would you rate your skill level as a snowmobiler? (· one)
   4.9%___ BEGINNER 40.8%___ INTERMEDIATE 54.3%___ ADVANCED
   (n =462)

5. Which area do you most often snowmobile in Minnesota? (· one) (n =486)
   31.3%___ NORTHEAST 44.0%___ NORTH CENTRAL/WEST 11.4%___ SOUTH
   8.8%___ TWIN CITIES 0.2%___ DO NOT KNOW 1.2% ___ DO NOT RIDE IN MN
   IF NOT, WHERE DO YOU RIDE MOST OFTEN?

6. How many miles is a typical snowmobiling experience for you? _____ MILES
   M = 126.3, SD =247.8 , n =485
7. How many hours is a typical snowmobiling experience for you? _____HOURS
   M =5.6 , SD = 7.0, n =483

8. How many days or nights is your typical snowmobiling experience?
   ___DAYS OR ___NIGHTS
   M = 3.6, SD = 5.8, n = 421 Days M= 1.7, SD = 1.7, n= 38 Nights

[1]Where M = mean and S.D = standard deviation

9. What is the typical makeup of your snowmobiling group? (· one)

6.8%___ I AM ALONE 17.4%___ FAMILY 1.8%___ORGANIZED GROUP
24.8%___ FRIENDS 48.8%___ FAMILY & FRIENDS 0.4%___OTHER
(n =488)

10. Including yourself, approximately how many individuals are in your typical snowmobiling group:

CHILDREN (0 -11) _____ M = 2.3 , SD = 1.6, n = 105
TEENS (12-17) _____ M= 2.2, SD = 1.4, n = 154
ADULTS (18+) _____ M = 4.4, SD = 2.8 n = 424

11. How many of your snowmobiles are used during your typical experience? _____
M =2.2 , SD =1.7 , n =472

12. How many days are the snowmobiles used for snowmobiling (not as support for fishing) during your typical snowmobiling experience? _____ DAYS
M =11.6 , SD = 13.4, n =475

13. How much money does your household spend on the entire experience? Please complete the table below for spending at home prior to departure, traveling to and from the snowmobiling area, and in the local area where you rode. If you spend nothing on an item, please leave it blank.

	AT HOME	EN ROUTE	LOCAL AREA
Grocery and convenience store food and drink	M = 58.61, SD = 71.04, n = 221	M = 30.66, SD = 38.00, n = 214	M = 52.33, SD = 61.67, n = 232
Tow vehicle expenses (gasoline, repairs, etc.)	M = 79.85, SD = 92.06, n = 186	M = 80.34, SD = 88.26, n = 190	M = 57.36, SD = 53.17, n = 147
Snowmobile expenses (gasoline, repairs, etc.)	M = 95.71, SD = 143.44, n = 282	M = 66.88, SD = 119.64, n = 110	M = 82.97, SD = 111.02, n = 279
Restaurant and bar meals and drinks	**NA**	M = 59.14, SD = 76.65, n = 201	M = 105.16, SD = 135.45, n = 315
Sporting goods (bait, fishing tackle, etc.)	M = 53.02, SD = 51.50, n = 51	M = 32.34, SD = 36.87, n = 32	M = 41.73, SD = 58.55, n = 67
Lodging (motel, camping, rental cabin, etc.)	**NA**		M = 223.15, SD = 230.80, n = 162
All other items (film, souvenirs, etc.)	M = 31.58, SD = 61.90, n = 76	M = 46.30, SD = 69.65, n = 50	M = 51.06, SD = 67.78, n = 108
TOTAL	M = 179.17, SD = 229.01, n = 331	M = 175.91, SD = 250.55, n = 298	M = 338.54, SD = 406.19, n = 354

15. Whom do these expenditures cover (· one)?
YOUR HOUSEHOLD ONLY 88.9%___YOUR HOUSEHOLD + OTHERS 11.1% (HOW MANY _____?) M = 3.6, SD = 2.4, n = 51

16. Beyond travel, what are your typical yearly Minnesota snowmobiling related expenses for your household (if 0, leave blank)?
PURCHASE OF EQUIPMENT (SNOWMOBILE, TRAILER, ETC.) ……...$ _____.00
M = 2,586.41, SD = 1,000.00 n = 199
SNOWMOBILE REPAIR/MAINTENANCE NOT DONE DURING A MN TRIP…...$_____.00
M = 217.94, SD = 244.86, n = 286
INSURANCE ON YOUR SNOWMOBILE ……..…$_____.00
M = 226.15, SD = 202.82, n = 305
OFF-SEASON STORAGE COSTS ……$_____.00
M = 144.63, SD = 210.46, n = 54
OTHER (EXPLAIN _____) ……$_____.00
M = 525.77, SD = 1495.75, n = 30

Now a little bit about winter 2003-2004.

17. Please complete the following table to describe the people in your household and their involvement in snowmobiling. **If there are no people in a certain category, please write 0 for that category.**

	NUMBER IN HOUSEHOLD	NUMBER WHO SNOWMOBILED WINTER OF 2003-2004	NUMBER WHO SNOWMOBILED IN MN WINTER OF 2003-2004
ADULTS 18 OR OLDER	M = 2.2, SD = 0.9, n = 463	M = 1.9, SD = 0.9, n = 444	M = 1.9, SD = 1.0 , n = 438
CHILDREN 12-17	M = 1.5, SD = 0.7, n = 141	M =1.5, SD =0.8, n = 130	M = 1.5, SD = 0.8, n = 123
CHILDREN 11 AND YOUNGER	M = 1.7, SD = 0.8, n = 120	M =1.6, SD = 0.7, n = 85	M = 1.6, SD = 0.7, n = 88

18. If no one from your household snowmobiled in Minnesota in the 2003-2004 season, what did you do (· all that apply)?

___ DID NOT SNOWMOBILE ANYWHERE (N = 41)
WHY? 29.3%_ TOO BUSY 2.4% TOO EXPENSIVE 2.4%_NO ONE TO GO WITH 61.0%_ OTHER (EXPLAIN)

___ TRAVELED OUTSIDE MN TO SNOWMOBILE (WHERE? _____) (N = 33)
54.5% WISCONSIN, 12.1% MICHIGAN, 12.1% IDAHO, 9.1% MONTANA, 9.1% CANADA, 3.0% WYOMING

___ PARTICIPATED IN OTHER RECREATIONAL ACTIVITIES (· ALL THAT APPLY) (N = 20)
25.0%___ATV 10.0%____ICE SKATING 5.0%___ SKIING
10.0%___ ATV & ICE SKATING 30.0%___ OTHER (EXPLAIN)

___ NOT APPLICABLE- I DID RIDE IN MINNESOTA

If no one from your household snowmobiled in Minnesota in the 2003-2004 season, please skip to QUESTION 24 on the next page

19. How many snowmobiles did you use during 2003-2004 season? _____
M =2.0, SD =1.1, n =406

20. About how many miles did you snowmobile during 2003-2004 season? _____
M =748.4, SD =786.0, n =397.0

21. How many gallons of fuel did you use during 2003-2004 season? _____
M = 80.2, SD =96.0, n =334

22. How many days did you snowmobile during 2003-2004 season? _____
M =14.7, SD =15.3, n =394

23. Of the total number of snowmobiling days, how many:
- ¢ Involved overnight stays away from your permanent home? _____NIGHTS
M = 3.3, SD = 4.9, n = 401
- ¢ Involved traveling 100 miles or more one way to use snowmobile, but didn't include overnight stays? _____TRIPS MORE THAN100+
M = 1.9, SD =4.4, n =337

Now, a few questions about the upcoming 2004-2005 season.

24. How many days or nights do you plan to spend on your next experience?
DAYS M = 6.9, SD = 9.0, n = 204 OR NIGHTS M = 3.9, SD = 4.1, n = 28
DO NOT KNOW
How many of these will be in Minnesota?
_DAYS M = 6.0, SD = 9.6, n = 191 OR NIGHTS M = 2.1, SD = 2.2, n = 26

25. In what region will your next experience be primarily focused (· one)?
33.5%___ NORTHEAST _38.0%__ NORTH CENTRAL/WEST 10.8%___ SOUTH
5.4%__ TWIN CITIES 5.0%___ DON'T KNOW
7.3%___ NOT IN MN (WHERE? _____)
53.5% WISCONSIN, 41.9% MONTANA, 2.3% MICHIGAN, 2.3% WYOMING

26. How many miles will this be from your permanent home? _____ MILES
M =162.8, SD = 195.8, n =328

27. How many people from your household will be involved during your next experience?
_____PEOPLE M = 2.4, SD =1.5, n =462

28. How many of your MN registered snowmobiles will be used on your next experience?
____ SNOWMOBILES M = 1.9, SD =1.2, n =456

29. How many days will the snowmobiles be used for snowmobiling **(not as support for fishing or other activities)** during your next experience? _____ DAYS
M = 8.9, SD =14.1, n = 373

30. How much money will your household spend on the entire experience? Please complete the table below for spending at home prior to departure, traveling to and from the snowmobiling area and in the local area where you rode. If you will spend nothing on an item, please leave it blank.

	AT HOME	EN ROUTE	LOCAL AREA
Grocery and convenience store food and drink	M = 65.91, SD = 82.60, n = 162	M = 40.63, SD = 55.76, n = 151	M = 57.39, SD = 69.97, n = 161
Tow vehicle expenses (gasoline, repairs, etc.)	M = 64.77, SD = 73.58, n = 139	M = 84.69, SD = 92.83, n = 141	M = 56.20, SD = 50.62, n = 108
Snowmobile expenses (gasoline, repairs, etc.)	M = 77.11, SD = 103.20, n = 190	M = 78.38, SD = 136.27, n = 80	M = 90.68, SD = 107.74, n = 211
Restaurant and bar meals and drinks	**NA**	M = 62.81, SD = 68.38, n = 145	M = 110.43, SD = 125.54, n = 235
Sporting goods (bait, fishing tackle, etc.)	M = 35.93, SD = 46.35, n = 29	M = 25.94, SD = 29.96, n = 16	M = 39.59, SD = 53.05, n = 37
Lodging (motel, camping, rental cabin, etc.)	**NA**	M = 189.46, SD = 164.32, n = 28	M = 230.63, SD = 225.77, n = 104
All other items (film, souvenirs, etc.)	M = 28.89, SD = 42.78, n = 45	M = 44.68, SD = 56.71, n = 31	M = 54.00, SD = 76.46, n = 80
TOTAL	M = 153.44, SD = 189.20, n = 236	M = 190.34, SD = 264.45, n = 211	M = 355.33, SD = 426.73, n = 257

31. Whom will these expenditures cover (· one) ?
_88.6% YOUR HOUSEHOLD ONLY OR 11.4%_YOUR HOUSEHOLD + # OTHERS?
M = 3.7, SD = 2.7, n = 41

32. What will be your household's Minnesota snowmobiling related expenses in the 2004-2005 season?

PURCHASE OF SNOWMOBILE EQUIPMENT (TRAILER, ETC.) …….....$_____.00
M = 2,392.20, SD = 3,132.43, n = 104

REPAIR/MAINTENANCE NOT DONE DURING A MN SNOWMOBILING TRIP …...$_____.00
M = 193.96, SD = 197.75, n = 247

INSURANCE ON YOUR SNOWMOBILE ……..…….$_____.00
M = 222.92, SD = 183.93, n = 282

OFF-SEASON STORAGE COSTS ……$_____.00
M = 94.82, SD = 96.90, n = 39

OTHER (EXPLAIN _____) ……..…..…$_____.00
M = 198.29, SD = 247.41, n = 24

Now, some questions about your perceptions of snowmobiling.

33. Indicate how important each of the following is in general when you go snowmobiling (circle **one answer for each row**).

	VERY IMPORTANT	IMPORTANT	UNSURE	NOT IMPORTANT	VERY UNIMPORTANT
Getting exercise M = 2.8, SD = 1.1, n = 470					
Being in a natural area M = 1.9, SD = 0.9, n = 470					
Riding challenging trails M = 2.6, SD = 1.1, n = 468					
Seeing exhilarating scenery M = 1.8, SD = 0.9, n = 471					
Feeling secluded M = 2.5, SD = 1.1, n = 469					
Seeing wildlife M = 2.1, SD = 1.0, n = 472					
Being with friends/family M = 1.5, SD = 0.8, n = 473					
Feeling self-reliant M = 2.5, SD = 1.0, n = 469					
Studying nature M = 2.9, SD = 1.1, n = 466					
Getting away from it all M = 1.8, SD = 0.9, n = 470					
Riding in a familiar area M = 2.9, SD = 1.1, n = 468					
Meeting other people M = 3.0, SD = 1.1, n = 469					
Doing technically difficult rides M = 3.5, SD = 1.1, n = 469					
Riding off established trails M = 3.3, SD = 1.1, n = 468					
Knowing where you are on trail M = 2.1, SD = 1.0, n = 468					

Viewing unfamiliar landscapes M = 2.4, SD = 1.0, n = 463					
Being aware of trail difficulty before you start M = 2.5, SD = 1.1, n = 469					
Having exciting experiences M = 2.2, SD = 1.0, n = 468					
Feeling power M = 3.0, SD = 1.2, n = 468					
Testing yourself M = 3.2, SD = 1.1, n = 464					
Knowing how long the ride will take M = 2.8, SD = 1.1, n = 469					
Having the opportunity to get lost M = 3.8, SD = 1.0, n = 468					
Having a thrilling ride M = 2.7, SD = 1.2, n = 468					
Seeing new areas M = 2.2, SD = 0.9, n = 468					
Feeling in control of the vehicle M = 1.8, SD = 0.9, n = 471					
Showing others you can do it M = 3.5, SD = 1.1, n = 466					
Riding to destinations M = 2.4, SD = 1.0, n = 469					
Getting a good workout M = 3.0, SD = 1.1, n = 469					

34. Please list the ONE improvement you would most like to see in the Minnesota snowmobile trail system.

    ____ 27.4% better marking, 25.4% better grooming

35. Would you be willing to support an increase in the cost of the state snowmobile trail sticker to pay for this improvement?

    _57.1 %_YES _42.9 %_NO

    If yes, how much more would you be willing to pay?

    $_M = 17.8 , SD = 18.9 , n = 175

36. What, if anything, interferes with your snowmobiling experience?

    _____

Finally, a few questions about you.

37. Do you belong to a snowmobiling club? 21.0% YES 79.0%_ NO (n=482)
38. How many ATVs do you own? # OF ATV M = 1.5, SD = 0.7 , n =247

39. What is your 5 digit home zip code? _____

40. What year were you born? AGE M = 45.1, SD = 11.9, n = 478

41. Are You? 84.2%___ MALE OR 15.8% ___ FEMALE
(n =482)

42. What is the highest level of education you have completed (circle one)? (n = 479)

EIGHTH GRADE	HIGH SCHOOL/ GED	TECH SCHOOL	SOME COLLEGE	COLLEGE DEGREE	ADVANCED DEGREE
.6%	24.6%	24.0%	19.2%	24.8%	6.7%

43. In what ethnicity and race would you place yourself?

Ethnicity (n = 322)**:** 0.9%____HISPANIC OR LATINO
99.1%____ NOT HISPANIC OR LATINO

Race (Check all that apply): (n = 476)
1.5%___AMERICAN INDIAN OR ALASKA NATIVE
0.2%___ASIAN
0.0%___BLACK OR AFRICAN AMERICAN
0.0%___ NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
98.3%____ WHITE
0.0%____ OTHER (EXPLAIN):

44. What is your employment status? (check one): (n = 481)
82.2%___EMPLOYED FULL TIME 5.0%__EMPLOYED PART TIME 9.6%___RETIRED
3.1%___OTHER

45. What is your annual household income (before taxes) (n = 444)

0.5%__ $5,000-9,999	0.2%__ $10,000-14,999	
2.7%__ $15,000-24,999	7.9%____ $25,000-34,999	14.9%____ $35,000-49,999
31.3%____ $50,000-74,999	20.7%____ $75,000-99,999	9.5%____ $100,000 -124,999
2.7%____ $125,000-149,999	5.6%____$150,000-174,999	4.1%____$175,000 OR MORE

46. How many people are supported by this income? ____PERSON/S
M =2.9, SD = 1.4, n = 462

If you have any other comments, please write them here. Thanks for your input.
Please mail the completed questionnaire back in the postage-paid envelope provided.

THANK YOU FOR YOUR PARTICIPATION!

If you want more information about this study, contact Dr. Ingrid Schneider,
115 Green Hall, 1530 Cleveland Avenue North, St. Paul, MN 55108-1027;
612-624-2250; ingridss@umn.edu