

THE ETHICAL PERCEPTIONS OF SALESPEOPLE AND SALES MANAGERS CONCERNING THE USE OF GPS TRACKING SYSTEMS TO MONITOR SALESPERSON ACTIVITY

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Global Positioning Satellite (GPS) tracking systems are starting to be used by sales organizations to monitor salespeople as they drive their company cars in their territories. This paper examines and compares ethical perceptions of salespeople and sales managers regarding the use of GPS tracking technology. The results of a survey of salespeople and sales managers suggest both sales managers and salespeople perceive the use of such systems as ethical, provided the salesperson is aware of the system's installation and use. The results also indicate that while salespeople perceive the personal use of a company car as unethical, most are likely to use a company car for personal reasons anyway. These results offer support for the contention that GPS tracking systems may be needed to reduce unethical use of company cars. Additional results and implications for sales managers are provided.

INTRODUCTION

George Orwell (1949) described a future society in which all activity was monitored and scrutinized by the governing authority. At the time Orwell's novel, *1984*, was released his description of this ominous social order was frightening, but all the same, fictitious. Today the capability to produce such a society is no longer fiction.

High-tech computer and communications technology continues to impact the lives of salespeople and the organizations for which they work. Customer relationship management (CRM), sales force automation (SFA), territory route planning automation, the world-wide-web, e-commerce, e-mail, laptop computers, personal digital assistants (PDAs), and cell phones are just a few of the examples of computer and communications technology (software and hardware) that have had an impact on the sales function. The hype surround-

ing the use of these "techno-tools" is based on the belief that they will help sales organizations improve customer relationships and increase sales force productivity. While it would be difficult to argue that these tools have not had at least some positive effect on customer relationships and sales force productivity, the implementation and use of this technology has not been without controversy—especially as it relates to privacy.

One of the factors associated with sales force resistance to certain types of computer and communications technology is the fear of "big brother." That is, salespeople see these tools as a way for management to closely monitor their activities, thereby eliminating the sort of freedom that many salespeople find attractive about their jobs. However, even with the daily automated activity reporting (through CRM and SFA tools) some organizations require, salespeople still could feel a sense of freedom during the day because they were able to operate without direct supervision.

More recently, software and hardware that utilize the global positioning satellite (GPS) system to track assets and assist with navigation have

begun showing up in the “techno-toolboxes” of sales forces. These hardware and software applications make it possible for management to monitor the minute-by-minute movements of their salespeople while in their vehicles, including where they are, where they’ve been, how long they’ve been at each location, and how fast they are, or have been traveling.

The purpose of this study is to explore the ethical implications and ramifications of technology designed to monitor the salespeople while they are in their vehicles. This study begins by examining how ethical perceptions regarding the monitoring of salesperson activity differ between salespeople and sales managers.

BACKGROUND

Sales managers use a variety of behavior-based and output-based control systems to manage and assess salespeople. Behavior-based control systems are based on evaluating activities (e.g., number and quality of sales calls) and other inputs the salesperson utilizes to direct salespeople in the manner in which they carry out tasks for their job, while output controls specify and monitor goals and standards of performance (e.g., sales quotas). Sales managers use these systems to evaluate performance, identify strengths and weaknesses, determine compensation adjustments, assess retention and promotability, and to create subsequent goals and objectives.

Generally, output-based control systems are easier to use because they tend to be more objective and less costly (in terms of time and money) to monitor. However, output-based controls don’t always accurately reflect performance and may be affected by factors outside the salesperson’s control. For example, in 2001 sales of Goodyear and Michelin tires soared as Firestone was forced to recall millions of tires due to performance problems. Output-based control systems would indicate that the performance of the Goodyear and Michelin salespeople (i.e., those selling tires to tire retailers) was outstanding, even though the

bulk of the sales increase was due to competitive failure rather than salesperson performance.

In contrast, behavior based controls provide managers richer information (relative to output-based controls) about how salespeople are actually performing their jobs. Unfortunately, behavior-based controls are more subjective and are more costly (in terms of time and money) to employ. For example, sales managers wanting to know the number of calls salespeople are making and how the sales calls are progressing would need to spend much of their time riding with their salespeople, aggregating sales call reports and subsequently compiling and assessing related performance reports.

One of the advantages of computer and telecommunications technology has been the ability of these tools to make behavior-based controls easier and less costly to implement. For example, many CRM and SFA tools allow sales managers to see daily automated sales call and performance reports (which may be customized to the specific needs of the managers) that tell the managers what and how well their salespeople are doing. These reports (and a wealth of additional related information) are available to the managers anytime of time of the day, seven days a week, and from just about any location.

Until recently, the extent of management’s ability to directly monitor the activities of salespeople was limited to the amount of time they could spend working with those salespeople. Today, using readily available computer, video, and telecommunications technology, managers can easily and inexpensively monitor the activities of their salespeople without having to be physically present with the salespeople. The latest tools adding monitoring capabilities include those utilizing the global positioning satellite system.

GLOBAL POSITIONING SATELLITE (GPS) TRACKING SYSTEMS

GPS tracking systems allow sales organizations to track the movement of their vehicles anywhere in the country. The technology consists of a combination of hardware and software that take advantage of the GPS system and cellular communication.

GPS tracking systems consist of a GPS receiver and computer hardware to record the data the receiver collects. Using the global position satellites, the receiver is able to pinpoint its location (in real-time) within a few feet. The system then uses that data along with mapping and database software to track a variety of information including, location, direction, speed, driving time, route traveled, and the time and duration of stops (e.g., when and how long that vehicle was stopped at each customer's location). How the information is transferred to the user (salesperson or sales manager) depends on the type of tracking system utilized. The two primary categories of GPS vehicle tracking systems are Passive Tracking and Active Tracking systems.

Passive Tracking

Passive tracking systems record information about the vehicles' movements and stores that information electronically within the unit. The stored information is transferred to the user's computer by direct cable link or short-range transmitter and receiver (usually no more than a few hundred feet). The software on the user's computer analyzes the data and provides a customizable series of tables and maps displaying the desired information using tables and maps.

Real-Time Tracking

In contrast to passive tracking, real-time tracking systems collect and broadcast information about the vehicles' movements in virtual or near real-time. In addition to the GPS receiver, these systems have either a cellular or satellite modem that sends the information to a desig-

nated internet server, either continuously or in intervals of one or more minutes. The user (e.g., sales manager) may then log-on to that internet site and locate and track the vehicles in virtual or near real-time. For example, a District Manager could log-on to a designated web site and see where each of his/her salespeople is located at any given moment. If the salesperson's vehicle is in motion, the manager can see how fast the vehicle is going and the direction in which it is traveling.

Installation

Depending on the size of the equipment, these systems may be hidden inside the vehicle, and may be installed either with or without the knowledge of the salesperson. Covert installation of passive vehicle tracking systems is practical only in situations in which the vehicle is returned to the company on a regular basis.

Benefits

Manufacturers and resellers of these systems claim that they will improve sales force productivity by increasing salespeople's accountability for how they spend their time. Users of these systems can expect a reduction in long lunches, personal trips, speeding, and inappropriate amounts of time spent with customers. Other benefits include reductions in vehicle insurance premiums, theft protection, and improved territory management (e.g., routing). Unfortunately, these benefits may not be realized because the use of GPS tracking systems may be met with strong resistance from the sales force.

Implementation of SFA and CRM tools has often been met with resistance from the sales force. Research suggests one of the factors driving resistance is the sales force's fear that managers will use these tools to criticize and micro-manage salespeople (Speier and Venkatesh 2002). Although not yet empirically tested, other tools (e.g., GPS tracking systems) designed to help managers monitor salesperson activity on a day-to-day or minute-by-minute basis may be met with similar resistance. Tech-

nologies that allow organizations to monitor employee phone calls and read employee e-mail have already introduced ethical dilemmas for organizations. These monitoring tools applied to a sales force may also be a source of ethical dilemma, especially given the relatively independent nature of salespeople. To the extent that salespeople feel these tools will be used to monitor rather than develop, the implementation and use of these sorts of systems introduces a potential for ethical conflict.

IMPORTANCE OF STUDYING DIFFERENCES IN ETHICAL PERCEPTIONS

Past studies have considered how salespeople perceive and respond to ethical dilemmas (Dubinsky et al. 1992; Dubinsky et al. 1980, Dubinsky and Levy 1985, Hoffman, Howe and Hardigree 1991). In addition, at least one study has considered the ethical differences between managers and salespeople. Henthorne, et al. (1992), found that managers are generally more critical of ethically questionable behavior than are salespeople. Although not yet directly tested, previous research suggests the degree to which sales manager and salesperson ethical perceptions are congruent is linked to sales performance and open communication between managers and salespeople.

Salespeople look to sales managers for cues to better understand what is expected of them in terms of values and behaviors (Rich 1998). The values and behaviors sales managers model influence salespeople and may or may not be congruent with their existing values and ethical perceptions. To the extent that the perceptions are incongruent concerning what is or is not ethical, the relationships (between sales managers and salespeople) may suffer lower levels of trust and communication (Loe 1996). Further, because successful coaching can only occur in an environment of trust and respect between salespeople and managers, in a climate of distrust, salespeople are less likely to listen and respond in a positive manner to their sales managers' coaching (Rich 1998). Ultimately, value and behavior incongruence between sales man-

ages and salespeople may have an adverse affect on sales performance (Weeks, Chonko and Kahle 1989).

Understanding the extent to which salespeople and sales managers differ in their perceptions of what is or is not ethical is important in light of our insistence upon a "relationship" focused sales environment. Sales managers play a key role in developing the skills of the sales force (Rich 1998), and the task of sales coaching demands open and continual communication (Corcoran et al. 1995, Richardson 1996, Monoky 1996).

Organizations must monitor their sales force in order to be in a position to make better decisions and to assist them in improving performance. Policies concerning how companies implement these devices must be in place to avoid abuse and ensure consistency in their execution. In order to improve upon the success and acceptance of workplace policies and to maintain harmony in the work environment, the attitudes of salespeople need to be assessed on a consistent basis (Brown 1996). Procedural justice theory supports this assertion. People judge fairness based not just on outcomes, but also on the process or procedures through which those outcomes are obtained (Thibaut and Walker 1975). If salespeople perceive that the process by which policies are determined are not inclusive of their opinions and perceptions they will likely be less satisfied with their managerial relationships in their organizations (Molm and Takahashi 2003).

While the use of GPS navigation systems is gaining in popularity, the use of GPS tracking systems to monitor sales force activity is still in the early stages of trial and acceptance. This study examines the ethical perceptions of salespeople and sales managers with respect to the monitoring of salesperson activity using GPS tracking systems, and how those ethical perceptions differ between salespeople and sales managers.

METHOD

The data was collected via a short survey instrument distributed to salespeople, sales managers, and other business people attending a sales symposium sponsored by a large mid-western university. The symposium consisted of four sessions of interest to salespeople but unrelated to ethics or technology.

The survey instrument included seven items concerning ethical perceptions related to GPS tracking systems and the personal use of a company car. Since there were no existing scales measuring ethical perceptions of GPS technology use, new items were created. These items are presented in Appendix One. In addition, each survey contained a brief description of GPS tracking technology (presented in Appendix Two). Approximately 277 surveys were distributed and 226 useable surveys were returned, yielding an 82 percent response rate.

The purpose of this study is to evaluate differences in ethical perceptions between salespeople and managers. Accordingly, respondents were asked to provide their current title along with other demographic information. The researchers then went through the titles and categorized each respondent as a salesperson, manager (e.g., sales manager, district sales manager, regional sales manager), or other (e.g., recruiter or trainer). Respondents not involved in the selling or sales management functions (e.g., recruiter or trainer) were eliminated from consideration. This left 201 useable responses, including 113 salespeople and 88 managers. Table One contains additional demographic information about the sample.

Personal Use of Company Car

One of the primary uses of GPS tracking systems in company cars is to hold salespeople accountable for how they use the vehicle. Items five (It's okay for salespeople to use the company car for personal business and not report it.) and seven (Most salespeople use company cars for personal reasons w/o reporting it.)

were used to determine the necessity of having such a monitoring tool in place. In addition, these items were used to assess whether personal use of a company vehicle (if that activity occurs) introduces an ethical dilemma.

Tables Two and Three present the frequency distributions for responses to items five and seven. Approximately nine percent of the salespeople believe it's okay for salespeople to use their company cars without reporting it, while seven percent of the managers felt the same way. Seventy-five percent of the salespeople and 82 percent of the sales managers believe it is wrong for salespeople to use the company car for personal business and not report it. However, 53 percent of the salespeople and 67 percent of the sales managers believe most salespeople use the company car for personal business without reporting it. The data in Table Three indicate over half of the salespeople and sales managers believe most salespeople use their company cars for personal reasons without reporting it.

To gain additional insight into the potential for the personal use of a company car creating an ethical dilemma, items five and seven were cross-tabulated. Prior to performing the cross-tabulation, both agree responses (strongly agree and agree) and both disagree responses (strongly disagree and disagree) were collapsed to into responses labeled "agree" and "disagree." Although intensity of agreement or disagreement is diluted, collapsing the responses provides a larger cell size while maintaining respondents agreement or disagreement response. Table Four presents the results of the cross-tabulation of these items for both salespeople and sales managers.

Cross-tabulating these two items (Table Four) reveals that 35 percent of the salespeople believe it is wrong for salespeople to use a company car for personal business (and not report it) and that most salespeople do so anyway. Only 13 percent believe such use of the company car is wrong and that most salespeople don't use the company vehicle for personal

TABLE 1						
Sample Demographics						
	Salespeople		Managers		Total	
	Count	%	Count	%	Count	%
Sex						
Male	74	37.76	65	33.16	139	70.92
Female	37	18.88	20	10.20	57	29.08
Total	111	56.63	85	43.39	196	100
Income (\$000)						
<30	6	3.49	2	1.16	8	4.65
30-60	56	32.56	17	9.88	73	42.44
60-90	28	16.28	12	6.98	40	23.26
90-120	6	3.49	17	9.88	23	13.37
120-150	4	2.33	7	4.07	11	6.40
>150	5	2.91	12	6.98	17	9.88
Total	105	61.05	67	38.95	172	100
Age						
<20	0	0.00	0	0.00	0	0.00
20-29	46	22.89	11	5.47	57	28.36
30-39	34	16.92	27	13.43	61	30.35
40-49	13	6.47	27	13.43	40	19.90
50-59	16	7.96	21	10.45	37	18.41
>60	4	1.99	2	1.00	6	2.99
Total	113	56.22	88	43.78	201	100

TABLE 2					
Frequency Distribution for Item Five					
Item #5: As long as they met quota, it's okay for successful salespeople to use the company car (or request reimbursement for mileage) for personal business and not report it.					
Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	3	2.7	2.7	2.7
	Agree	7	6.2	6.3	8.9
	Neutral	19	16.8	17.0	25.9
	Disagree	49	43.4	43.8	69.6
	Strongly Disagree	34	30.1	30.4	100
	Total	112	99.1	100	
Sales Managers	Strongly Agree	0	0.0	0.0	0.0
	Agree	6	6.8	6.9	6.9
	Neutral	9	10.2	10.3	17.2
	Disagree	41	46.6	47.1	64.4
	Strongly Disagree	31	35.2	35.6	100
	Total	87	98.9	100	

TABLE 3
Frequency Distribution for Item Seven

Item #7: Most salespeople use company cars for personal reasons without reporting it.

Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	10	8.8	8.9	8.9
	Agree	49	43.4	43.8	52.7
	Neutral	36	31.9	32.1	84.8
	Disagree	13	11.5	11.6	96.4
	Strongly Disagree	4	3.5	3.6	100
	Total	112	100	100	
Sales Managers	Strongly Agree	11	12.5	12.6	12.6
	Agree	47	53.4	54.0	66.7
	Neutral	20	22.7	23.0	89.7
	Disagree	7	8.0	8.0	97.7
	Strongly Disagree	2	2.3	2.3	100
	Total	87	98.9	100	

business. Fifty-four percent of the sales managers indicated most salespeople use their company cars without reporting it and that such behavior was wrong. Only nine percent of the sales managers felt that most salespeople do not use the company car without reporting it.

Ethical Perceptions of the Use of GPS Tracking Systems

Tables Five through Eight provide the frequency of responses to the four items dealing with the use of GPS tracking systems. In each of the four items, tracking was viewed as unethical by more salespeople than sales managers. For item one (Table Five), 35.4 percent of the salespeople thought the use of GPS tracking systems was ethical, while 60.2 percent of the managers felt that way. Conversely, only 27.3 percent of the managers perceived the use of these systems as unethical, compared to 46.1 percent of the salespeople.

Item two (Table Six) describes the covert installation of the tracking systems and drew a more negative response from both sales managers and salespeople. Approximately 96 percent of the salespeople and 86 percent of the sales managers felt that covert installation of GPS tracking systems is unethical.

Table Seven contains the distribution for item three, which is similar to item one with the exception that item three explicitly states the salespeople are informed of the tracking system installation. In this case, almost 50 percent of the salespeople thought the use of such systems, with the knowledge of the salespeople, is ethical. This represents a 15 percent increase relative to item one. The sales managers showed a similar (but smaller) increase as the number of managers reporting the use of such systems was ethical rose to 68 percent, up from 60 percent in item one.

TABLE 4
Cross-Tabulation of Items 5 and 7

				Most salespeople use company cars for personal reasons without reporting it.			
Salespeople	It's okay for salespeople to use the company car for personal business and not report it			Agree	Neutral	Disagree	Total
		Agree	Count	6	3	1	10
			% of Total	5.4%	2.7%	.9%	8.9%
		Neutral	Count	14	4	1	19
			% of Total	12.5%	3.6%	.9%	17.0%
		Disagree	Count	39	29	15	83
			% of Total	34.8%	25.9%	13.4%	74.1%
		Total	Count	59	36	17	112
			% of Total	52.7%	32.1%	15.2%	100.0%
Sales Managers	It's okay for salespeople to use the company car for personal business and not report it	Agree	Count	6	0	0	6
			% of Total	7.0%	0%	0%	7.0%
		Neutral	Count	6	3	0	9
			% of Total	7.0%	3.5%	0%	10.5%
		Disagree	Count	46	17	8	71
			% of Total	53.5%	19.8%	9.3%	82.6%
		Total	Count	58	20	8	86
			% of Total	67.4%	23.3%	9.3%	100.0%

Item four (Table Eight) asks about the use of tracking systems in a salesperson's personal vehicle (i.e., they don't have a company car and are reimbursed for mileage.) As with item two (covert installation) salespeople and sales managers were closer in their responses. Almost 27 percent of the salespeople felt this sort of requirement was ethical, while 31 percent of the sales managers felt the same. However, over half of the salespeople and sales managers felt it was unethical to require salespeople to install these systems in their personal vehicles.

Item six asks respondents to consider whether technological innovations are implemented before the ethical implications are evaluated adequately. The response distribution to this item

is shown in Table Nine, and indicates salespeople's and sales managers' feelings do not differ. For both salespeople and sales managers, 62 percent felt as though technological innovations are implemented before the enough time is devoted to considering the ethical implications of those innovations.

Preliminary Results – Differences Between Salespeople and Managers

Table Ten provides the mean scores of salespeople and sales managers on the ethical perception items. Six of the ten mean differences are statistically significant. In addition, the direction of the difference is the same for all of the items dealing with ethical perceptions of a

TABLE 5
Frequency Distribution for Item One

Item #1: Assuming an organization provides company cars to its sales force, it is ethical for that organization to place vehicle-tracking devices in the company cars its salespeople use.

Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	5	4.5	4.4	4.4
	Agree	35	31.0	31.0	35.4
	Neutral	21	18.6	18.6	54.0
	Disagree	23	20.4	20.4	74.3
	Strongly Disagree	29	25.7	25.7	100
	Total	113	100	100	
Sales Managers	Strongly Agree	11	12.5	12.5	12.5
	Agree	42	47.7	47.7	60.2
	Neutral	11	12.5	12.5	72.7
	Disagree	19	21.6	21.6	94.3
	Strongly Disagree	5	5.7	5.7	100
	Total	88	100	100	

TABLE 6
Frequency Distribution for Item Two

Item #2: It is ethical for a company to install tacking devices in the vehicles of its sales force without the sales force knowing.

Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	1	0.9	.9	.9
	Agree	2	1.8	1.8	2.7
	Neutral	2	1.8	1.8	4.4
	Disagree	27	23.9	23.9	28.3
	Strongly Disagree	81	71.7	71.7	100
	Total	113	100	100	
Sales Managers	Strongly Agree	0	0	0	0
	Agree	6	6.8	6.8	6.8
	Neutral	5	5.7	5.7	12.5
	Disagree	27	30.7	30.7	43.2
	Strongly Disagree	50	56.8	56.8	100
	Total	88	100	100	

TABLE 7
Frequency Distribution for Item Three

Item #3. It is ethical for a sales organization to install tracking devices in the vehicles of its sales force, provided the sales force is informed of the installation.

Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	8	7.1	7.1	7.1
	Agree	48	42.5	42.5	49.6
	Neutral	22	19.5	19.5	69.0
	Disagree	21	18.6	18.6	87.6
	Strongly Disagree	14	12.4	12.4	100
	Total	113	100	100	
Sales Managers	Strongly Agree	14	15.9	15.9	15.9
	Agree	46	52.3	52.3	68.2
	Neutral	12	13.6	13.6	81.8
	Disagree	11	12.5	12.5	94.3
	Strongly Disagree	5	5.7	5.7	100
	Total	88	100	100	

TABLE 8
Frequency Distribution for Item Four

Item #4: Assuming a company reimburses its sales force for business-related mileage (driven by the sales force in their own cars), it is ethical for that organization to require its salespeople to place vehicle-tracking devices (paid for by the sales organization) in their cars.

Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	4	3.5	3.5	3.5
	Agree	26	23.0	23.0	26.5
	Neutral	10	8.8	8.8	35.4
	Disagree	33	29.2	29.2	64.6
	Strongly Disagree	40	35.4	35.4	100
	Total	113	100	100	
Sales Managers	Strongly Agree	8	9.1	9.2	9.2
	Agree	19	21.6	21.8	31.0
	Neutral	12	13.6	13.8	44.8
	Disagree	28	31.8	32.2	77
	Strongly Disagree	20	22.7	23.0	100
	Total	87	98.9	100	

TABLE 9
Frequency Distribution for Item Six

Item #6: Not enough time is spent considering the ethical ramifications of technological innovations before they are implemented.					
Position	Response	Frequency	Percent	Valid Percent	Cumulative Percent
Salespeople	Strongly Agree	19.0	16.8	17.0	17.0
	Agree	52.0	46.0	46.4	63.4
	Neutral	33.0	29.2	29.5	92.9
	Disagree	7.0	6.2	6.3	99.1
	Strongly Disagree	1.0	0.9	0.9	100
	Total	112	99.1	100	
Sales Managers	Strongly Agree	12.0	13.6	13.8	13.8
	Agree	42.0	47.7	48.3	62.1
	Neutral	27.0	30.7	31.0	93.1
	Disagree	5.0	5.7	5.7	98.9
	Strongly Disagree	1.0	1.1	1.1	100
	Total	87.0	98.9	100	

particular activity. Specifically, sales managers perceived the corresponding situations as more ethical than did the salespeople.

Each of the first four items dealt with the installation and use of GPS tracking systems. Relative to salespeople, managers expressed stronger agreement with the idea that the use of GPS tracking systems is ethical. The second item dealt with the covert installation of the GPS tracking system and drew the strongest disagreement of all the items by both salespeople and sales managers.

Items five and seven referred to a salesperson's personal use of a company car, and the differences between salespeople and managers are not statistically significant. However, while both sales managers and salespeople tended to express disagreement with the ethicalness of a salesperson's personal use of a company car, both expressed agreement with the statement (item seven) "most salespeople use company cars for personal reasons without reporting it."

Item six is a statement about the consideration of the ethical ramifications of new technology. Both salespeople and sales managers tend to agree that not enough time is spent considering the ethical ramifications of technological innovations before they are implemented. The mean for salespeople was lower than the mean for sales managers (statistically significant difference at the .05 level), indicating salespeople felt stronger about this issue.

The preceding results indicate differences between salespeople and managers with respect to their ethical perceptions regarding the use of GPS tracking systems. However, other factors may account for the differences observed. The survey instrument included questions designed to collect information regarding the respondents' age, income, and sex, and these variables were tested along with position using multiple analysis of variance.

Multiple Analysis of Variance (MANOVA)

Multiple Analysis of Variance (MANOVA) was used to determine whether relationships exist between the four items describing the installation and use of GPS tracking systems and age, income, and type of position (salesperson or manager). One of the requirements of MANOVA is that the n of all cells must be greater than the number of dependent variables (Hair et. al. 1992). To meet this requirement, the age and income variables were re-coded into two groups each (high and low). Sex was not included in the MANOVA because the number of female respondents was not sufficient to meet the minimum number of respondents in each cell of the MANOVA, in this case four.

Subsequently, MANOVA was run using items one through four as dependent variables and the dichotomous groups of age, income, and type of position as independent variables. The smallest cell size was nine (lower income, younger age, sales manager) and the largest was 52 (lower income, younger age, salesperson). Because the difference between the largest group and the smallest group is large, Box's M test was used to check for equality of covariance matrices. Essentially, this is a check to determine whether variances between groups are substantially different. The results of the Box's M test are shown in Table 11.

The resulting Box's M statistic is not statistically significant, indicating no statistically significant differences between the variances of the independent variables (and interactions).

Next, the results of the Levene's test of equality of error variances was analyzed (Table 12). The error variances of each dependent variable should be equal across groups (cells). The Levene's test statistic for item two, referring to covert installation of the tracking system, is statistically significant, indicating unequal error variances between groups. Neither logarithmic or square-root transformation methods helped to smooth out the differences in variance across cells for this item.

The variances of each of the cells for item two were calculated and the results are presented in Table 13. The variance for cell four was nearly twice the variance of the next largest cell. This relatively high variance was due to four of the nineteen respondents scoring a two on this item. Since only nine of the 201 respondents recorded a two (agree) or less on this item, those cases were treated as outliers for purposes of the MANOVA analysis and subsequently dropped from consideration.

A new MANOVA was run using the 192 remaining survey instruments. The results of the Box's M test and Levene's test are presented in Tables 17 and 18 respectively. The results indicate no statistically significant differences between variances of the independent variables (Table 14) or the dependent variables (Table 15).

Table 16 contains the results of the tests for main and interaction effects. The only statistically significant effects are the main effects of the age variable.

Table 17 contains the test for between-subjects effects with respect to the age variable (the only independent variable with statistically significant main effects). The mean score for the older group on each of the items for which effects are statistically significant is lower than the score for the younger group. These results suggest younger salespeople and managers are likely to perceive the installation of tracking devices as more unethical than do older salespeople and managers.

DISCUSSION

Personal Use of Company Car

The results of this study indicate a majority of salespeople and sales managers believe most salespeople use their company cars for personal business without reporting it. In addition, sales managers and salespeople believe it is wrong for salespeople to use their company cars for personal business without reporting it. This

TABLE 10
Mean Difference Between Ethical Perceptions of Salespeople and Managers

Item	Salespeople Mean	Managers Mean	Diff.
1. Assuming an organization provides company cars to its sales force, it is ethical for that organization to place vehicle tracking devices in the company cars its salespeople use.	3.32	2.6	.72*
2. It is ethical for a company to install tracking devices in the vehicles of its sales force without the sales force knowing.	4.64	4.37	.27*
3. It is ethical for a sales organization to install tracking devices in the vehicles of its sales force, provided the sales force is informed of the installation	2.87	2.39	.48*
4. Assuming a company reimburses its sales force for business-related mileage (driven by the sales force in their own cars), it is ethical for that organization to require its salespeople to place vehicle tracking devices (paid for by the sales organization) in their cars.	3.70	3.37	.33*
5. As long as they met quota, it's okay for salespeople to use the company car (or request reimbursement for mileage) for personal business and not report it.	3.93	4.11	-.19
6. Not enough time is spent considering the ethical ramifications of technological innovations before they are implement.	2.28	2.32	-.05
7. Most salespeople use company cars for personal reasons without reporting it.	2.57	2.33	.24
* indicates statistical significance at .05 level			

TABLE 11
Box's M Test of Equality of Covariance Matrices

Box's M	73.95
F	.93
df1	70
df2	8310.36
Sig.	.647

TABLE 12
Leven's Test of Equality of Error Variances

	F	df1	df2	Sig
Q1	1.67	7	163	.119
Q2	2.89	7	163	.007
Q3	1.30	7	163	.251
Q4	1.83	7	163	.085

TABLE 13
Group Cell Variances for Item 2

Cell	Age	Position	Income	N	Mean	Variance
1	Younger	Salespeople	Lower Inc.	52	4.60	.56
2	Younger	Salespeople	Higher Inc.	23	4.61	.79
3	Younger	Managers	Lower Inc.	9	4.22	.69
4	Younger	Managers	Higher Inc.	19	4.11	1.43
5	Older	Salespeople	Lower Inc.	10	4.80	.18
6	Older	Salespeople	Higher Inc.	20	4.65	.24
7	Older	Managers	Lower inc.	10	4.60	.27
8	Older	Managers	Higher Inc.	29	4.70	.29

TABLE 14 Box's M Test of Equality of Covariance Matrices	
Box's M	63.63
F	.80
df1	.70
df2	8191.33
Sig.	.893

TABLE 15 Leven's Test of Equality of Error Variances				
	F	df1	df2	Sig
Q1	1.69	7	159	.113
Q2	1.16	7	159	.331
Q3	1.36	7	159	.226
Q4	1.64	7	159	1.28

TABLE 16 Multivariate Tests for Main and Interaction Effects				
Effect	F	Hyp. Df	Err. df	Sig
Intercept	1468.53	4	156	.000
Age	3.85	4	156	.005
Position	1.65	4	156	.164
Income	1.62	4	156	.175
Age*Pos.	1.10	4	156	.365
Age*Inc.	0.62	4	156	.651
Pos.*Inc	1.17	4	156	.329
Age*Pos.*Inc.	0.82	4	156	.512

Note: Pillai's Trace, Wilks Lambda, Hotelling's Trace and Roy's Largest Root test statistics were utilized to test for significant main effects.

TABLE 17 Leven's Test of Equality of Error Variances					
Item	Younger	Older	df	F	Sig
Q1	3.36	2.66	1	4.90	.028
Q2	4.56	4.67	1	1.91	.169
Q3	2.97	2.34	1	8.87	.003
Q4	3.81	3.25	1	5.98	.016

conflict between what salespeople are doing and what they believe is acceptable suggests an ethical dilemma exists with respect to salespeople and their personal use of their company cars. In addition, these results suggest that an organization's concern over how salespeople are using their vehicles is valid, and that using GPS tracking technology may be warranted. However, the use of these tracking systems to monitor salespeople (with respect to their use of company cars) may introduce additional ethical dilemmas.

Monitoring

In general, the results suggest salespeople and sales managers perceive that it is ethical for sales organizations to track salespeople using GPS systems, to monitor e-mail, and to monitor phone conversations. In addition, when differences in ethical perceptions between salespeople and managers were indicated, managers' scores indicated stronger perceptions of ethicalness.

The purpose of this exploratory study was to begin to understand the ethical perceptions of salespeople and sales managers (and how they differ) with respect to the use of GPS tracking systems. The results of this study indicate salespeople and sales managers differ with respect to their ethical perceptions. In general, salespeople tended to perceive the use of GPS tracking systems as more unethical than did sales managers. In addition, the results suggest age is an important variable for understanding ethical perceptions. Younger salespeople and sales managers tended to perceive the use of GPS tracking systems as more unethical than did the older salespeople and sales managers.

Analysis of the Individual Items

Analysis of the individual items indicates salespeople perceived the use of tracking devices, in each of the scenarios described, as more unethical than did sales managers. The mean scores indicate that sales managers agree (in general) that the use of tracking systems is ethical, pro-

vided the salespeople are aware of the systems. Both sales managers and salespeople perceived the covert installation of GPS tracking systems as unethical.

Finally, both salespeople and sales managers perceived the use of tracking systems in cars its salespeople own (and for which they are reimbursed for business mileage) as more unethical than in company cars. Perhaps the respondents felt as though the use of the tracking devices in the personal cars of its salespeople represents a greater invasion of privacy than when installed in company cars. It would be interesting to learn whether these differences would still exist if the tracking systems were used only while the salesperson was working (i.e., they could be turned-off by the salesperson when not using the vehicle for company business.)

IMPLICATIONS FOR MANAGERS

Technology is and will continue to affect the relationship between salespeople and their customers, and between salespeople and their managers. As the costs of using GPS tracking systems for territory management (e.g., route planning) and asset tracking (e.g., sales managers tracking salespeople) continue to fall, the number of organizations using these tools will increase.

Providing a salesperson with a company car has always carried with it the opportunity for that salesperson to use the car for purposes outside their job responsibilities. The advent of GPS tracking technology should help to reduce the misuse of company vehicles by holding salespeople more accountable for how they use the car. Salespeople knowing their travel is being monitored are probably less likely to use their company cars for anything unrelated to their job responsibilities. This is supported by business ethics theory that indicates as employees are presented with barriers to unethical behavior, such behavior is reduced (see Ferrell and Gresham 1985 and Ferrell, Gresham and Fraedrich 1989).

However, managers need to be careful when implementing GPS tracking technology and other technology monitoring salesperson activity. The results of this study suggest salespeople are more likely to perceive the use of these systems as ethical when management is up-front about installation and usage. However, covert installation, once discovered, is likely to bring a strong negative reaction by salespeople as they view this sort of use (of these systems) as unethical.

Although additional research is needed, the best approach for managers to take when in implementing GPS tracking systems may be to do so for developmental reasons. Specifically, these tracking systems should be positioned as tools to help salespeople improve their time and territory management (e.g., route planning, comparing time invested with customers to revenue generated, and so forth) rather than tools for monitoring how the salesperson uses the company car.

ADDITIONAL RESEARCH

This study begins the process of understanding the impact of GPS tracking systems on the sales force. While this study examined ethical perceptions of salespeople and sales managers, it did not examine the impact of the actual use of these systems. Additional research is needed that studies how salespeople and sales managers respond prior to, during, and after installation of these systems. For example, does the decision to implement these systems result in sales force turnover? Does the use of these systems have an impact on the behavior and sales activities of salespeople?

Trust is difficult to create in companies. Often organizations even have "active distrust" (MacCoby 2003). Obsessive managers may feel compelled to check everything, which is taking verification to an extreme, and creating an environment that exacerbates communication and productivity. The use of technology in monitoring the sales force must be examined

from the perspective of how it might harm productivity as well as enhance performance.

While the scope of this paper is limited to the issues of GPS technology and monitoring, one of the primary concerns surrounding the use of such technology to monitor employee activity is the potential conflict of such monitoring with employees' perceived right to privacy (Brown 1996). Within the context of sales, the point of contention is when or where does a company's right to monitor and control salespeople intrude on salespeople's perceived right to privacy. Examination of privacy issues as they relate to the use of technology is needed.

The results of this study suggest a majority of salespeople and sales managers believe new technology is often implemented before the ethical ramifications of doing so are given adequate consideration. Accordingly, research studies that help us understand and predict how salespeople and sales managers will respond to new technology will continue to be important.

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APPENDIX 1

1. Assuming an organization provides company cars to its sales force, it is ethical for that organization to place vehicle tracking devices in the company cars its salespeople use.
2. It is ethical for a company to install tracking devices in the vehicles of its sales force without the sales force knowing.
3. It is ethical for a sales organization to install tracking devices in the vehicles of its sales force, provided the sales force is informed of the installation.
4. Assuming a company reimburses its sales force for business-related mileage (driven by the sales force in their own cars), it is ethical for that organization to require its salespeople to place vehicle tracking devices (paid for by the sales organization) in their cars.
5. As long as they meet quota, it's okay for salespeople to use the company car (or request reimbursement for mileage) for personal business and not report it.
6. Not enough time is spent considering the ethical ramifications of technological innovations before they are implemented.
7. Most salespeople use company cars for personal reasons without reporting it.

APPENDIX 2

Technology is available today that will allow organizations to track the precise location and speed of its vehicles. By placing a global positioning satellite (GPS) receiver and cellular transmitter into a salesperson's vehicle, a sales manager using the internet could:

- Locate the salesperson's vehicle.
- Determine the speed the vehicle is traveling.
- Determine how long the vehicle was stopped at any particular location (e.g., customers).
- Identify the total miles and route the salesperson's vehicle has traveled during a particular time frame (e.g., a day or week.)

This technology may be installed with or without the salesperson's knowledge.