



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Pre-Meeting Proceedings*

McVey, Pautsch, Fenn & Bammel
Agricultural & Transportation
Infrastructure Issues in the 21st
Century

Transportation Research Forum

34th Annual Meeting



Editor:
Russell B. Capelle, Jr.

October 21-23, 1992
St. Louis, Missouri

*"The St. Louie Book"

A COMPARISON OF OWNER OPERATORS AND COMPANY DRIVERS
IN REGARDS TO ATTITUDES TOWARD THE JOB AND REASONS FOR TURNOVER

G. Stephen Taylor
Department of Management and Information Systems
P.O. Drawer MG
Mississippi State University
Mississippi State, MS 39762
Phone: (601) 325-3928
FAX: (601) 325-2410

Will need a transparency projector

This study attempted to determine if owner operators and company drivers could be a homogeneous population in the sense of having common concerns about and problems with their employers. To do, the attitudes of the two groups toward various aspects of their jobs and carriers were solicited and compared. The joint effects of these attitudes, plus miles per week (which served as a proxy for pay), and days home per month, on each group of drivers' intent to change carriers were measured. The two groups were found to be significantly different in terms of their feelings toward their jobs and carriers. On the whole, company drivers expressed greater satisfaction with virtually all aspects of their work. It also was found that intent to change carriers was influenced by different factors. Owner operators' attitudes toward their job closely match those of entrepreneurs in general. Company drivers were more influenced by management-related factors such as trust in the company and perceived fairness of dispatchers. Implications of these findings are discussed.

A COMPARISON OF OWNER OPERATORS AND COMPANY DRIVERS
IN REGARDS TO ATTITUDES TOWARD THE JOB AND REASONS FOR TURNOVER

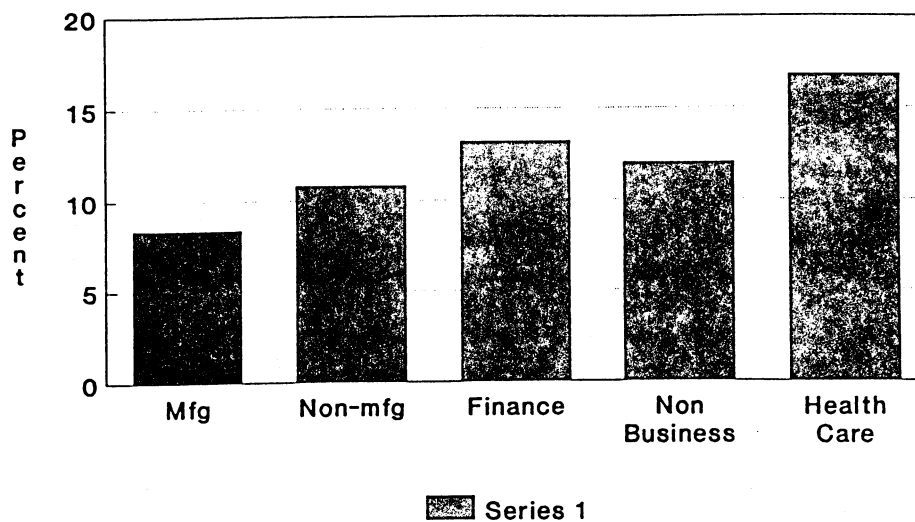
One of the most pressing problems in long-haul trucking is that of driver turnover. Generally discussions of this issue focus on one of two aspects of turnover: (i) drivers changing occupations altogether, or (ii) the voluntary movement of drivers from one carrier to another¹. This paper focuses on the second definition of turnover. Not only is this an extremely costly problem, but both the severity and expense of voluntary turnover are likely to increase in the near future.

It has been estimated that the total cost associated with the loss of a current driver and replacement with a new one, is around \$12,000.² While this figure in and of itself is very large, the true magnitude of the cost of voluntary exit can only be appreciated when the industry as a whole is considered. Estimates of the percentage of the total driver workforce which change carriers in any given year range from 38%³ to 200%⁴. While the exact magnitude of this problem is not known, even the low estimate of 38% is astoundingly high when compared to the nationwide median of 9.6% annual turnover⁵. As point of comparison, Figure 1 shows average turnover rates by industry and by region for 1991.

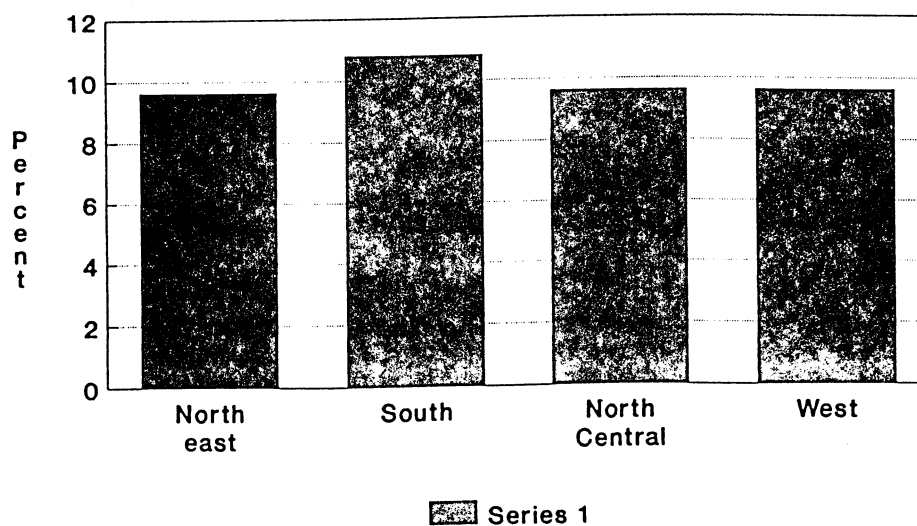
The constant loss of drivers significantly increases a carrier's cost of doing business. For example, high turnover means higher recruiting costs as firms try to balance the number of losses with new hires. Hiring costs also increase, since a greater number of new drivers means additional reference checking, testing, and physical/drug tests, as well as increases in paperwork and clerical staff to process the newly hired drivers.⁶ Uncontrolled driver turnover can cause carriers to hire individuals they might otherwise not select. After all, tractors sitting idle not only fail to generate revenue but also increase unit labor costs. Yet employing drivers of questionable qualifications, particularly those with little driving experience, can lead to more accidents,⁷ abandoned trucks, and lowered morale among other drivers.⁸

Hiring marginally qualified drivers also can damage relations with shippers. Unreliable and/or inexperienced drivers are likely to have more

Figure 1
1991 Turnover Rates by Industry



1991 Turnover Rates by Region



Source: Bureau of National Affairs, "Bulletin to Management,"
December 12, 1991.

service failures than are better qualified drivers. Additionally, drivers who view the carrier simply as a temporary employer are less likely to cooperate with shippers, which can lead to poor relations between the shipper and the company. Given the large number of trucking companies to select from, few shippers are likely stay with an unreliable firm or one which employs surly, uncooperative drivers who may or may not arrive when scheduled. Yet experience-based cost savings are derived from stable, long-term relationships among carrier, shipper, and receiver.⁹ Drivers can directly contribute to, or detract from, such relationships.

Driver turnover is particularly disturbing since the driver is the key resource of any trucking firm. The bottom line is that a carrier's inability to retain drivers poses a serious threat to its continued viability. Beilock and Capelle report that the demand for drivers will increase annually by 1.3%, while the total U.S. work force will grow by barely 1.0% per year.¹⁰ Rodriquez and Griffin¹¹ cite statistics showing the demand for drivers to increase 16-23 percent from 1988 to 2000. This potential shortage in the supply of future drivers is magnified by ongoing changes in the demographic make-up of the work force. Only 15% of all new entrants into the workforce will be native-born white males, the group most heavily utilized by trucking companies. This means that driver retention is, or should be, a very high priority for trucking firms.¹²

With the exception of Corsi and Martin¹³ and Rodriquez and Griffin,¹⁴ discussions of this problem often treat drivers as a generic population. If drivers are basically the same, then addressing problems of turnover becomes simpler. In all likelihood, however, drivers are not a homogeneous block with similar problems and concerns. This study attempted to determine whether two types of drivers - company drivers and owner operators - are similar in terms of their likes and dislikes about their jobs and carriers. Additionally, efforts were made to determine if these groups change jobs for similar reasons, or if turnover within each group is due to factors unique to the type of driver. As shown below, company drivers and owner operators do appear have unique concerns about their jobs, and to leave carriers for reasons unique to each group.

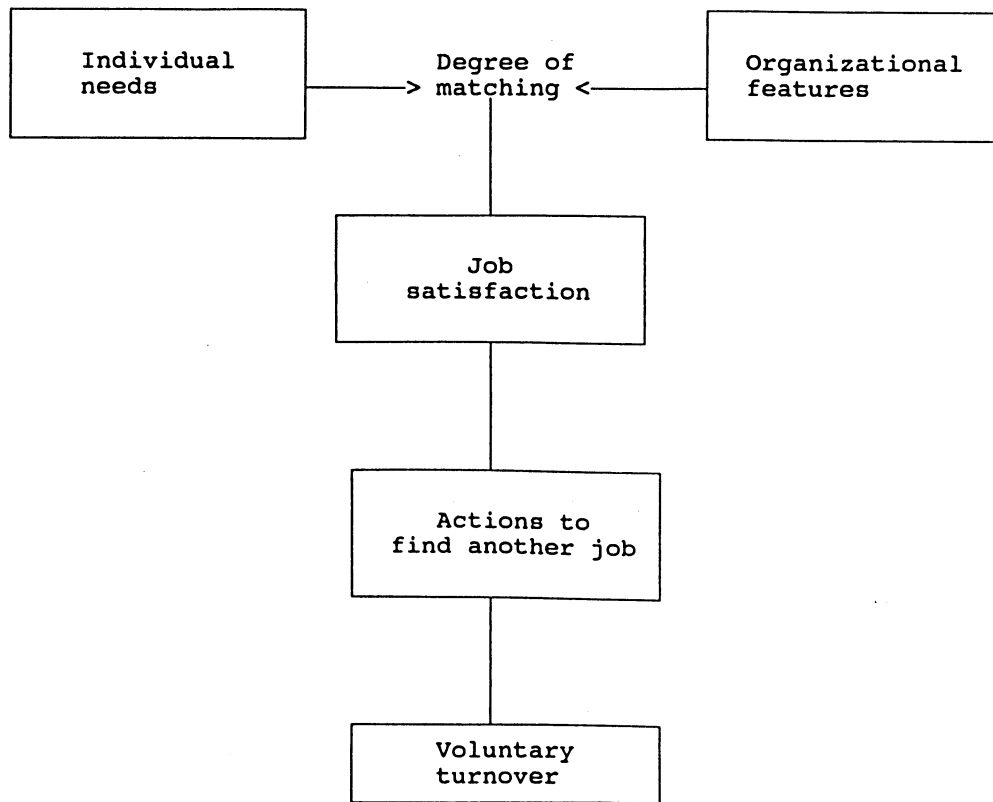
RELATIONSHIP BETWEEN ATTITUDES AND TURNOVER

At the level of the individual, the decision to quit an employer is negatively related to the degree to which that person is satisfied with an assortment of features associated with the job and company.¹⁵ This means that job satisfaction is a multi-dimensional construct instead of an overall global assessment or feeling. A driver's (or any other employee's) satisfaction with his/her job and carrier is a function of how well that person's needs are "matched" with characteristics of the organization.¹⁶ If there is a poor match, job dissatisfaction occurs, drivers begin thinking of quitting, and start assessing the costs associated with such actions in terms of the costs and benefits of searching for another job.¹⁷ Figure 2 shows this process.

While dissatisfaction initiates the turnover process, it is the availability of employment alternatives that usually determines whether an employee will quit. The abundance of vacant driving jobs means there are highly visible alternative employment opportunities that can be acquired at relatively low cost to the driver. Hence, once job dissatisfaction generates search activity, the probability the driver will actually change carriers becomes very high.

This means that keeping drivers generally satisfied with their current jobs will be absolutely essential to retaining these employees. The key issue is to determine what drivers want from their jobs, and whether it is cost effective for the carrier to provide these things. To date, there have been few studies which attempt to identify the features of the job and carriers that are most liked and disliked by drivers. Perhaps the more prominent are those of Rodriguez and Griffin, which has already been cited, and Southern and colleagues'.¹⁸ One drawback of the Southern study, however, is that they asked personnel directors to identify the incentives most valued by drivers. The implicit assumption is that personnel directors know the things drivers value. However, since

Figure 2
Model of Voluntary Turnover



Source: Wanous, J.P. *Organizational Entry*. Reading (MA): Addison-Wesley Publishing Company, 1980, p. 112.

communication in most organizations is from top down, there is some question as to whether management really knows what is important to its employees.

This study attempted to advance our knowledge in this area in three ways. First, drivers themselves were asked about their feelings toward several aspects of their jobs and companies. Second, the responses of owner operators were analyzed separately from and then compared with those from company drivers. Third, the effects of these attitudes on the intent to change carriers were statistically determined and compared across the two groups of drivers.

METHODOLOGY

Drivers Used in this Study

The data used in this study were gathered in several ways. Information from company drivers were collected from six truckload general commodities carriers. These organizations, which ranged in size from 200 drivers to over 1500, are headquartered in different regions of the country (the southeast, mid-west, mid-south, and upper mid-west). All but one serve the 48 contiguous states.

A two-day series of interviews was held at each carrier's site prior to conducting this study. During this period, drivers, top managers, and general employees having contact with drivers were interviewed in an effort to determine the most pressing problems at each location, and to learn any terminology that might be unique to that particular organization. At the completion of these interviews, a 65 item two-page questionnaire was developed for each carrier.

Owner operators came from two sources. Roughly 50% of the information about this group came from a single carrier exclusively using these kinds of drivers. The remainder consisted of those owner operators who completed a questionnaire (designed by this researcher) contained in a commercially developed log book. These books were distributed primarily in the southwest and along the west coast.

Research Instrument

The first 20 items of all questionnaires (for company drivers and owner operators) make up the short form of the Minnesota Satisfaction Questionnaire (MSQ). This is a well established and one of the most commonly used instruments to measure job satisfaction. The MSQ is based on the theory that each person seeks to achieve and maintain correspondence with the work environment. Correspondence with the environment at work can be described in terms of the individual fulfilling the requirements of this environment, and the work environment fulfilling the requirements of the individual,¹⁹ much as was pictured in Figure 2 above. The scale produces a measure of intrinsic satisfaction (satisfaction with the job itself), extrinsic satisfaction (satisfaction with the company), and overall job satisfaction.

This version of the MSQ consists of 20 Likert-scale statements about various aspects of the job and company. For example, drivers were given the statement: "As a driver, how do you feel about the way your dispatcher handles drivers?" Each statement was followed with a five-point response scale ranging from "Very Dissatisfied" (1) to "Very Satisfied (5); drivers were instructed to circle the response that best described their feelings.

In addition to the MSQ, each questionnaire also contained approximately 45 additional Likert-scale statements designed to measure drivers' attitudes toward various parts of their job (e.g., attitude toward dispatch, the desire/intent to change carriers). Roughly half of this number were repeated in each questionnaire; the remaining items were unique to the problems of each carrier. Unlike the MSQ items, these statements required drivers to indicate their extent of agreement or disagreement. A sample item is "my dispatcher follows company policies." Possible responses could vary from 1 (Strongly Disagree) to 5 (Strongly Agree), with 3 (Not Sure) as the escape response. Demographic data, e.g. How long have you driven professionally?, also were collected.

The questionnaires were distributed in drivers' pay envelopes or in the log book mentioned above. A postage-paid return envelope addressed to the university research division which sponsored this study, also was included. This

made it impossible to identify who did or did not complete the instrument. Also, since the forms were returned to the university, no one in the companies ever saw individual responses. These steps were designed to encourage drivers to respond honestly to the items on the questionnaire.

RESULTS

Drivers who Responded

A total of 6,280 questionnaires were distributed (not counting those printed in log books). Of this number, 1,913 were returned; this produced an overall response rate 31.5 percent. This is a fairly good return, as typically response rates to this type of questionnaire are less than 30 percent.²⁰

Out of the 1,913 who responded, 329 (or 17.2% of the total) were owner operators. On average, the typical respondent was almost 40 years old, had 14 years experience as a professional driver, and had been with the current carrier for 4 years, 1 month. Virtually all were single drivers (90.5%), reported running slightly fewer than 2,000 miles a week, and were home 6.4 days a month. Moreover, 95% were males; 74.1% were married, 13.9% were single, and 12% were divorced (but not currently married).

Company drivers made up the remaining 82.8% of the respondents, giving a total of 1,584 questionnaires. Here the typical respondent was 38 years old, had been a professional driver for 7 years, 1 month, and had driven 18 months for the present carrier. Most of these respondents - 902 (59.7%) - were team drivers, with 602 (39.8%) being single drivers; 0.5% did not supply this information. Because of the predominance of teams, average miles driven per week was a fairly high 3,379. These drivers reported getting home 3.9 days a month. There were 1,062 male respondents (88.6%), and 127 (10.6%) females. Most were married (558; 66.9%; 154 (18.5%) were single, and 109 (13.1%) were divorced (but not currently married).

Driver Attitudes

Table 1 compares the mean responses of owner operators and company drivers to the 20 items from the MSQ. When the mean satisfaction scores of the two

groups of respondents are compared using Students t-test, statistically significant differences are found on 12 of the 20 statements. Moreover, company drivers reported statistically greater satisfaction on 8 of these 12 items than did owner operators. The only items with which owner operators were more satisfied were those pertaining to working alone (Item 2), to having opportunity to use their own judgment (Item 15), to being able to do the job their own way (Item 16), and to their coworkers (Item 18).

Because attitudes are such abstract phenomena, several different questionnaire items were used to measure respondents' feelings about each aspect of the job being studied. This multi-indicator approach should increase both the reliability and validity of the measures.²¹ Table 2 shows the results of first combining those items that measure the same attitude, and then comparing the responses of owner operators with those of company drivers. As shown in this table, company drivers reported statistically greater levels of satisfaction with both the carrier (extrinsic satisfaction) and the job itself (intrinsic satisfaction), as well as more favorable attitudes toward dispatch. Perhaps more significantly, owner operators reported a greater desire to change carriers than did company drivers. Taken together, these results show considerably lower satisfaction among owner operators than among company drivers.

Relationship Between Attitudes and Desire to Change Jobs

The last objective of this study was to determine whether these two groups of drivers change jobs for the same reasons, or whether each has unique problems that culminate in turnover. To address this issue, multiple linear regression models were produced for each group. The dependent variable in each model was in the intent to change jobs, which was defined as drivers' mean response to four of the 45 items in the questionnaire. For example, drivers were given the statement "I don't plan to drive for this company much longer;" responses were selected from the 5-point scale discussed earlier. While not a perfect predictor, an individual's expressed desire to change jobs is one of the most accurate predictors of actual leaving.²²

Table 1
Comparison of Owner Operators
and Company Drivers on Individual Components^a

Satisfaction with:	Owner Operators	Company Drivers	Difference ^b
1. Being able to keep busy.....	3.21	3.71	-0.50***
2. Working alone.....	4.17	3.87	0.40***
3. Doing different things from time to time....	4.04	3.95	0.09
4. The chance to be "somebody".....	3.41	3.60	-0.19**
5. Your dispatcher's handling of drivers.....	3.29	3.62	-0.33***
6. Your dispatcher's competence in making decisions.....	3.32	3.66	-0.34***
7. Doing things that don't hurt your conscience.....	3.77	3.96	-0.19**
8. The way your job provides for steady employment.....	3.38	3.98	-0.60***
9. The chance to do things for other people....	3.74	3.94	-0.20*
10. The chance to tell people what to do.....	3.44	3.46	-0.02
11. Doing something that uses your abilities....	3.98	4.08	-0.10
12. Implementation of company policies.....	2.74	2.76	-0.02
13. Your pay and the amount of work you have to do.....	2.58	2.64	-0.06
14. Chances for advancement.....	2.94	3.05	-0.11
15. Opportunity to use your own judgment.....	4.01	3.85	0.16*
16. Being able to do the job your way.....	3.90	3.77	0.13*
17. The working conditions.....	3.47	3.57	-0.10
18. Your co-workers.....	3.62	3.19	0.43***
19. The praise you get for doing a good job.....	3.02	3.09	-0.07
20. The feeling of accomplishment you get from the job.....	3.62	3.83	-0.21**

^aThese items were measured on a five-point scale ranging from "Very Dissatisfied" (1) to "Very Satisfied" (5).

^bThis is defined as owner operator score minus company driver score.

* p < .05
** p < .001
*** p < .0001

Table 2
Comparison of Owner Operators and Company Drivers
on Attitudinal Dimensions^a

Dimension	Owner Operators	Company Drivers	Difference ^b
(1) Overall Job Satisfaction	3.484	3.577	-0.093*
(1a) Intrinsic satisfaction	3.731	3.832	-0.101*
(1b) Extrinsic satisfaction	2.972	3.136	-0.164**
(2) Was given an accurate view of the company before joining	3.167	3.011	0.156*
(3) Attitude toward dispatch	3.587	3.695	-0.108*
(4) Overall attitude toward the company	2.911	2.979	-0.068
(5) Intent to change carriers	2.420	2.300	0.120*

^aDimensions 1-4 are measured on a five-point scale ranging from 1 = least favorable to 5 = most favorable. For dimension 5, higher the score the greater the desire to change carriers (1 = least desire to 5 = highest desire).

^bThis is defined as the owner operators' mean score minus the mean score of company drivers.

* $p < .05$

** $p < .001$

Independent variables (regressors) were overall job satisfaction and attitude toward the company,²³ attitude toward dispatch,²⁴ the perception of whether recruiters had provided an accurate preview of the job,²⁵ miles driven per week (which serves as a proxy measure of pay), and days home per month.²⁶ Each of these independent variables previously have been identified as potential reasons for voluntary turnover.

Table 3 shows the results of the regression analysis. As can be seen from the F statistics under each column, both models account for a statistically significant amount of variance in drivers' intent to change jobs. In regards to owner operators, the overall regression explained almost half of the variance in drivers' intent to change jobs: $R^2 = 0.4585$. Although still statistically significant, the model for company drivers was not as good: $R^2 = 0.3730$. Given the multitude of factors that cause voluntary turnover, each model provides a fairly good explanation for why drivers want to change carriers.

Table 3 also contains beta (or standardized) coefficients, which show the relative contribution of each independent variable to the intent to change jobs. The negative coefficients mean that drivers' desire to change jobs increases as their attitudes on each of these independent variables become less favorable. Although the same variables were used in each model, the magnitude and level of statistical significance of the betas are rather different in each regression. For example, three regressors exerted statistically significant influence on owner operators' desire to change jobs. The variable having greatest impact on the intent to change jobs is owner operators' perception of whether they were given an accurate preview of the company before joining it ($\beta = -0.407$). Note the effect of this variable is over twice as great as that associated with attitude toward the company ($\beta = -0.180$), and almost three times as influential as the level of intrinsic satisfaction ($\beta = -0.139$).

The model for company drivers is considerably different. While a greater number of variables are statistically significant, three account for most of these respondents' desire to change jobs. One of these - attitude toward the company ($\beta = -0.401$) is by far the most influential. Intrinsic satisfaction (β

Table 3

Comparison of Owner Operators and Company Drivers
on Attitudinal Dimensions^a

Independent Variables	Owner Operators		Company Drivers	
	Beta Coefficient	Prob > t	Beta Coefficient	Prob > t
Overall job satisfaction	-0.1385	0.0143	-0.2308	0.0001
Realistic preview of the company/job	-0.4040	0.0001	-0.0972	0.0029
Attitude toward dispatch	-0.0673	0.2336	-0.1225	0.0001
Overall attitude toward the company	-0.1909	0.0031	-0.4007	0.0001
Miles driver per week	0.0211	0.6379	-0.0057	0.8248
Days home per month	0.0066	0.8808	-0.0773	0.0031
F	40.7930		101.4600	
Prob > F	0.0001		0.0001	
R ²	0.4700		0.3779	
R ² _{adjusted}	0.4585		0.3730	
Mean Square Error	0.3032		0.5876	

= -0.216) exerts the second greatest influence on the dependent variable, with attitude toward coordinators ($\beta = -0.125$) being third in terms of impacting the intent to leave.

Note that miles per week (the pay proxy) was not statistically significant in either model. Also, while the variable days home per month was significant in the company driver model, its influence on the desire to change jobs is rather weak. These results do not suggest pay and time home are irrelevant in the decision to change carriers. However, they do indicate that voluntary turnover among drivers is not a single-faceted issue, but is instead a multi-dimensional, complex problem.

DISCUSSION

This study attempted to determine (1) whether owner operators and company drivers held similar attitudes towards their jobs and carriers, and (2) if turnover among these two groups was due to the same factors. The results presented here suggest these drivers do hold different attitudes, and that turnover within each group has different causes. Consequently, future studies of driver-related issues may wish to limit their generalizations only to drivers similar to those sampled. Moreover, sampling techniques that classify drivers by type, instead of purely random sampling, may be appropriate.

Owner operator responses to the surveys used here are very compatible with studies of entrepreneurs in general. For example, entrepreneurs typically go into business because of the independence this provides, for the challenge of seeing something grow and develop, and for the opportunity to take sole responsibility for the success or failure of their endeavor.²⁷ Owner operators expressed very similar feelings. As shown in Table 1, this group is more satisfied than are company drivers in terms of working alone, being able to use their own methods, and being able to do the job their own way. Moreover, owner operators are more satisfied with their co-workers, who for the most part also are owner operators, i.e. fellow entrepreneurs. These findings should not be surprising, for owner operators are in fact entrepreneur/small business people who invest a considerable amount of their own money into their business. The

only real difference among these drivers and the more "typical" entrepreneur is the nature of the business.

This entrepreneurial spirit also is evident in the reasons owner operators intend to change jobs. While their general attitude toward the carrier was a significant influence, it was not the major one. Since owner operators are entrepreneurs - their businesses are their trucks - the carrier simply is another organization with which they happen to conduct business. Hence, this type of driver should identify more with his or her own business/occupation than with the carrier with they are affiliated. The carrier, therefore, should make efforts to treat these individuals much as they treat other business associates. From this perspective, the relationship between carrier and owner operator should be based on equality of both parties. Owner operators, therefore, should not be necessarily be viewed as employees.

The company driver, however, is in a very different position. For this individual, the company may become the major point of identification. As shown in the motivation literature, people have a need to belong.²⁸ The company driver is more likely to have this need satisfied (or not) by the carrier than by the occupation. Indirect support for this comes from Beilock and Capelle,²⁹ who found owner operators to express a greater allegiance to the occupation than did company drivers. Also, unlike more typical work places (e.g., manufacturing facilities), there will be no formal work groups with which the company driver can affiliate. Similarly, the great amount of time these individuals spend on the road makes it virtually impossible for them to be active members in social and civic organizations. Thus, the carrier potentially can fill a critical psychological need for the driver. If the carrier proves untrustworthy or uncaring, then the driver is likely to search for another place for work, i.e., another place to belong. This would account for the very strong influence of attitude toward the company on company drivers' intent to change jobs.

This same general argument may also explain why attitude toward dispatch influences company drivers' intent to change jobs, but not that of owner operators. For the company driver, the dispatcher is the major link between

him/her and the carrier. Given the solitary nature of this job, even in team driving, the dispatcher may very well be the only "human" contact the driver has with the carrier. Thus, if the dispatcher is perceived as unfair, incompetent, uncaring, and so forth, then the major link to the company is seriously damaged if not broken. Similarly, since the dispatcher often is the major representative of the company to the drivers, the carrier may be blamed for any inappropriate actions by dispatch. On the other hand, a dispatcher who meets both the carrier's and the drivers' criteria of "good performance" should play a positive role in driver retention. The owner operator, however, because of the identification with his/her own entrepreneurial efforts, should be less affected by dispatch.

This entrepreneur-employee dichotomy may also explain several other findings from the regression analysis. For instance, intrinsic satisfaction, or satisfaction from the job and occupation itself, plays a greater role in the intent to change carriers for company drivers than for owner operators. This may reflect the psychological need of owner drivers to justify the great expense of their trucks, as well as the financial obligation (in many cases) to pay for them. That is to say, even if an owner operator gets little satisfaction from the occupation (i.e., low intrinsic satisfaction), he or she may feel compelled to stay in the business given the heavy psychological and financial commitments represented by the purchase of the truck. Since company drivers do not have this "added incentive" to drive, they may be more willing to change jobs if the occupation proves unsatisfying.

Finally, the entrepreneurial spirit and financial obligations of owner operators may explain why the perception of whether they were given an accurate description of the carrier prior to joining it plays such a large role in their intent to change jobs. While this perception was statistically significant in both models, it exerted a far stronger influence on owner operators. This may revolve around issues of percentage pay, fuel tax adjustments, and the like. In other words, owner operators may feel they are not earning as much as they thought they would. Some support for this explanation can be found in Table 1.

The items on which company drivers were most satisfied relative to owner operators are those pertaining to pay: being able to keep busy (Item 1) and the way the job provides for steady employment (Item 8). Given the cost of truck upkeep, insurance, and often loan payments, owner operators are likely to perceive a greater need to stay active than do many company drivers. This does not mean, however, they need to drive more miles. The lack of significance of miles driven for owner operators may indicate the problem lies in the earnings for these miles, not necessarily the number of miles.

While the issue of driver retention attracts greater attention at certain times than at others, the pressing nature of this problem does not lessen. Simply put, the inability to retain drivers can significantly increase a carrier's total cost of doing business, limit its ability to exploit market-place opportunities, and ultimately play a key role in its demise. This study suggests that efforts to retain drivers may have to be tailored to fit the type of driver employed by the carrier. Academicians, therefore, may wish to consider explicitly the nature of the samples used in their empirical work, and limit generalizations to the population from which the sample was drawn. Similarly, those who manage trucking firms may wish to be less accepting of "generic" explanations of or ways to reduce driver turnover. Instead, efforts to stem the loss of drivers probably will have to be designed specifically for the type of drivers being lost.

ENDNOTES

1. Beilock, R. and Capelle, R.B. Jr., "Occupational Loyalties among Truck Drivers." Transportation Journal, Spring, 1990, pp. 20-28.
2. LeMay, Stephen A. Traffic World, March 27, 1989, p. 26.
3. Corsi, T. and Fanara, P. "Driver Management Policies and Motor Carrier Safety." The Logistics and Transportation Review, 24 (2), 1988, pp. 153-164.
4. Sparkman, D.L. "Driver Shortage Plays Havoc with Fleets." Transport Topics, December 14, 1987, pp. 1, 18-19.
5. Bureau of National Affairs, "Quarterly Report on Job Absence and Turnover," Bulletin to Management, December 12, 1991.
6. Ivancevich, J.M. *Human Resource Management*. Boston: Irwin Press, 1992.
7. Bruning, E.R. "The Relationship Between Profitability and Safety Performance in Trucking Firms," Transportation Journal, Spring, 1989, pp. 40-49.
8. Beilock, R., Capelle, R.B. Jr., and Page, E.B. "Speed and Training Factors Associated with Heavy Truck Accidents," Transportation Quarterly, Vol 43 (4), 1989, pp. 571-589.
9. Beier, F.J. "Transportation Contracts and the Experience Effect: A Framework for Future Research." Journal of Business Logistics 10 (2), 1989, pp. 73-89.
10. *ibid.* Beilock, R. and Capelle, R.B. Jr. 1990.
11. Rodriguez, J.M. and Griffin, G.C. "The Determinants of Job Satisfaction of Professional Drivers," presented at the Annual Forum and Meeting of the Transportation Research Forum, October 11-13, 1989.
12. There are at least two excellent discussions of the ongoing demographic changes in the U.S. workforce: Hudson Institute, *Workforce 2000: Work and Workers for the Twenty-first Century*, Hudson Institute Press: Indianapolis, Indiana, 1987; Greller, Martin and David Nee, *From Baby Boom to Baby Bust*, Reading (MA): Addison-Wesley Publishing, 1989.
13. Corsi, T. and Martin, J. "An Explanatory Model of Turnover Among Owner Operators," Journal of Business Logistics, 3 (2), 1982, pp. 47-71.
14. *ibid.* Corsi and Martin, 1982.
15. Cotton, J.L. and Tuttle, J.M., "Employee Turnover: A Meta-Analysis and Review with Implications for Research," Academy of Management Review, 11, 1986, pp. 55-70; Porter, L.W. and Steers, R.M. "Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism," Psychological Bulletin, 80, pp. 151-176; Price, J.L. *The Study of Turnover*. Ames (IA): Iowa State University, 1977; Mobley, W.H., Griffeth, R.W., Hand, H.H., and Meglino, B.M. "Review and Conceptual Analysis of the Employee Turnover Process," Psychological Bulletin, 86, pp. 493-522.

16. Wanous, J.P. *Organizational Entry*. Reading (MA): Addison-Wesley Publishing Company, 1980.
17. Mobley, W.H. *Employee Turnover: Causes, Consequences, and Control*. Reading (MA): Addison-Wesley, 1982.
18. Southern, R.N., Radowski, J.P., and Godwin, L.R. "Motor Carrier Road Driver Recruitment in a Time of Shortages, Transportation Journal, Summer, 1989, pp. 42-48. Also see *ibid.* Beilock, R. and Capelle, R.B.; Murphy, J.V. "Truck Driver Shortage Seen at Critical Level," Transportation World, December 1987, pp. 9-10.
19. Cook, J.D., Hepworth, S.J., Wall, T.J., and Warr, P.B. *The Experience of Work*. London: Academic Press Inc., 1981.
20. Alreck, P. and Settle, R. *The Survey Research Handbook*, Homewood (IL): Richard B. Irwin Press, 1985.
21. Nunnally, J.C. *Psychometric Theory*. New York: McGraw-Hill Book Company, 1978.
22. Intent to leave is an extremely common way to measure potential turnover. Some of the more rigorous studies using this measure are: T.W. Lee and Richard T. Mowday, "Voluntarily Leaving an Organization: An Empirical Investigation of Steers and Mowday's Model of Turnover," Academy of Management Journal, 30 (4), 1987, pp. 721-743; C.E. Michaels, and P.E. Spector, "Causes of Employee Turnover: A Test of the Mobley, Griffeth, Hand, and Meglino Model," Journal of Applied Psychology, 67, 1982, pp. 53-59; Stephen J. Motowidlo and G.W. Lawton, "Affective and Cognitive Factors in Soldiers' Reenlistment decisions," Journal of Applied Psychology, 69, pp. 157-166.
23. *ibid.* Cotton, J.L. and Tuttle, J.M., 1986; Porter, L.W. and Steers, R.M., 1973; Price, J.L. 1977; Mobley, W.H., Griffeth, R.W., Hand, H.H., and Meglino, B.M., 1979.
24. Taylor, G.S. "Using Performance Appraisals of Dispatchers to Reduce Driver Turnover." Transportation Journal, 30 (4), 1991, pp. 49-55.
25. Taylor, G.S. and LeMay, S.A. "A Causal Relationship Between Recruiting Techniques and Driver Turnover in the Truckload Sector." Transportation Practitioners Journal, 59 (1), 1991, pp. 56-66.
26. See, for example, Jerold C. Heiken, "Coping With the Driver Shortage," The Private Carrier, August 1988, p. 12, and Neil Southern, James P. Radowski, and Lynn R. Godwin, cited earlier. Heiken says pay is one of the two most important factors in the driver shortage. An empirical study by Southern and colleagues found that personnel directors considered pay the single most important incentive for retaining and recruiting drivers. They are identified days home as the third most important incentive.
27. Kao, J. *Entrepreneurship, Creativity, and Organization*. Englewood Cliffs (NJ): Prentice-Hall.
28. McClelland, D.C., Atkinson, J.W., Clark, R.A., and Lowell, E.L. *The Achievement Motive*. Princeton: Van Nostrand, 1961; Maslow, A.H. *Motivation and Personality*. New York: Harper, 1954; Schein, E.H. *Organizational Psychology*. Englewood Cliffs (NJ): Prentice-Hall, Inc.
29. *ibid.*, Beilock and Capelle, 1990.