CAREER STAGE, TIME SPENT ON THE ROAD, AND TRUCKLOAD DRIVER ATTITUDES

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The purpose of this study is to examine the relationships between career stage, time spent on the road, and driver work-related attitudes. Three phenomena make the study of truck driver attitudes salient to carriers and shippers. First, turnover among truck drivers has traditionally been very high. Turnover rates as high as 200 percent have been reported and it is not unusual for trucking companies to have turnover rates of 100 percent[1]. Driver turnover has been estimated to cost $1,000 per incident[2], a figure that does not include the estimated $5,000 cost of training a new driver[3]. Consequently, turnover represents a very real bottom line problem for both carriers and shippers.

Research has shown job-related attitudes to be central both to models of turnover and to models of employee attendance[4]. Therefore, knowledge of driver job-related attitudes can provide companies with valuable information for predicting and controlling future absenteeism and turnover.

A second impetus for the study of truck driver attitudes is the growth in demand for drivers and the anticipated shortage of traditional, white, male drivers. The Bureau of Labor Statistics predicts that the demand for professional truck drivers will increase by 20.5 percent between 1986 and the year 2000[5]. The Hudson Institute, in turn, reports that by the end of the century, women will make up 50 percent of the workforce, up from 43 percent; minority entrants into the workforce will increase from 15 percent to 29 percent; and immigrant participation in the workforce will have increased from 7 percent to 10 percent[6]. In addition, Beilock and Capelle estimate that the demand for drivers is expected to increase by 1.3 percent per year through the 1990s, while the workforce is expected to expand by only one percent[7]. Another factor that can be expected to exacerbate driver turnover and the shortage of drivers is randomized drug testing. One expert has predicted that up to one third of all drivers will be disqualified as a result of randomized drug testing[8]. These

data suggest a need to focus more attention on attracting and retaining qualified drivers. A better understanding of driver work-related attitudes will assist employers in meeting driver needs and thus retaining them.

Finally, research on driver attitudes is important because of the driver's critical role in the success of motor carrier[9]. Drivers are responsible for safety, on-time delivery, customer relations, equipment breakdowns,

and they play a major role in determining insurance rates, all of which have bottom line consequences for motor carriers.

Determinants of Work-Related Attitudes

Models of voluntary turnover incorporate work-related attitudes, such as job satisfaction, as a primary determinant of an employee's intention to stay or quit. A number of factors, in turn, serve as antecedents of work-related attitudes. These factors have been grouped in a variety of categories including: individual factors, economic opportunity, and work-related factors; job expectations and values, organizational characteristics and experiences, and job performance level; and organizational, work, and personal factors[10]. Although these groupings vary somewhat, work related and personal factors are common antecedents of job attitudes in each of these models attempting to explain and predict voluntary turnover.

The present study examines the impact of one such personal factor, career stage, and one job-related characteristic, time spent on the road, on truck driver work-related attitudes. Career stage was selected because it has been shown to moderate a number of employee attitudes such as job satisfaction, job involvement, organizational commitment[11]. The precise direction of the effects of career stage on attitudes, however, has been shown to vary depending on whether career stage is defined by one's age, positional tenure, or organizational tenure[12].

Time spent on the road was selected because of its centrality to truck driving as a job or career. Although no research has been conducted on the relationship between the amount of time drivers spend on the road and their work-related attitudes, this variable would seem pivotal because it represents a direct trade-off between one's work and home life. Consequently, time spent on the road can be viewed as a type of interrole conflict. Interrole conflict has been noted in several theoretical models as a possible antecedent of absenteeism and turnover[13]. More generally, the amount of time one spends on the road equates to one's work schedule and this variable has been linked to numerous work related outcomes and family problems[14]. It has been reported, for example, that workers on fixed shifts reported higher levels of mental and emotional health, job satisfaction, social involvement, organizational commitment, and lower turnover intentions than did employees on rotating shifts[15]. Thus, time spent on the road is predicted to play an important role in drivers' work-related attitudes.

Propositions

Three propositions guided this study. First, it was expected that career stage would moderate driver work-related attitudes. Stated differently, drivers in the early career stage are expected to report different levels of work-related attitudes than are midcareer drivers, who, in turn, are expected to report different levels of attitudes than are late-career drivers. Because of the large numbers of attitudes included in this study, the nature of the measures used, and the lack of previous data on truck drivers, no directional indications are specified in this proposition. Consequently:

P_1: Driver work-related attitudes will vary across three career stages.

Second, it was expected that the amount of time drivers spend on the road would impact on their work-related attitudes. This proposition is based on the arguments presented above concerning time away from one's family and other work scheduling related problems. Formally stated:

P_2: Drivers who spend more time on the road will exhibit less favorable work related attitudes than will drivers who spend less time on the road.

Third, it was expected that the impact of time spent on the road on work-related attitudes may be different depending upon the career stage of the driver. Consequently, an interaction effect between career stage and time spent on the road is expected.

P_3: There will be an interaction between driver career stage and time spent on the road on driver work-related attitudes.

Method

Sample

Data were collected via a mailed questionnaire sent to truck drivers of 13 truckload motor carriers selected throughout the United States. Of 11,390 surveys distributed, 3,910 were returned for a response rate of 34.3 percent. Surveys were completed anonymously and returned to the researchers via U.S. mail in prestamped envelopes. Of the 3,910 surveys returned, 505 were excluded from the analysis because they represented responses from independent or owner operator drivers. This resulted in a sample of 3,405 responses, all from company drivers, with usable data from 3,379 respondents. Sample sizes associated with any given variable were slightly less, due to missing data.

Independent Variables

Career stage and time spent on the road serve as the independent variables in this study. Career stage can be measured in a variety of ways, including respondent age, the length of time spent in an organization, the length of time spent in a particular profession or occupation, and the length of time spent in a particular position[16]. Because the job of a driver changes little from company to company, career stage was measured via occupational tenure. To facilitate comparison with other studies, three levels of career stage were identified based on subject responses to the open-ended question: "How long have you driven professionally?" Respondents reporting less than or equal to two years as a driver were classified as early career stage drivers (N=1717); those reporting more than two years but less than or equal to ten years as a driver were considered to be mid-career drivers (N=791); and those reporting more than ten years as a driver were classified as late career stage drivers (N=897). The use of these categories is consistent with previous research on a variety of populations and will allow for cross-occupational comparisons[17].

Time spent on the road was dichotomized as short or long road time based on responses to the question: "On the average, how long are you on the road at one time?" Response options included gone days only, gone less than one week, gone one, two, three, four or more weekends. Responses were grouped such that drivers reporting being gone for one weekend or less constituted short time drivers (N=1633) while those indicating being out on the road longer than one weekend were classified as long road time drivers (N=1772).

Dependent Variables

Truck driver attitudes constituted the dependent variables of interest in this study. Driver attitudes were measured via the following fourteen measures developed specifically for inclusion in this survey. All measures were coded such that a higher number indicates a stronger endorsement of the attitude. For each scale involving multiple items, responses were averaged to create a single indicator of the attitude that reflected the original metric of the scale. Descriptive statistics for the sample as a whole are shown in Table 1.

Component Job Satisfaction. Component job satisfaction was measured using a twenty-one item, five point scale (l=really dislike, 5=really like). The questions asked about driver satisfaction with a number of

components of truck driving, such as driving the truck, relations with customers, independent lifestyle, paperwork, drug testing, and meeting safety requirements. Coefficient alpha for this scale, which represents a measure of the internal consistency reliability of the items used in the scale, was .77.

Interest in Job Enlargement. A nine item, four point scale (l=not at all, 4=very much) was used to measure driver interest in performing other duties beyond just driving. Items asked drivers how interested they would be in getting involved in activities such as sales, recruiting, safety, training, and customer relations. Coefficient alpha for this scale was .85.

Importance of Equipment to Satisfaction. A twenty item, five point scale (l=not at all important, 5=very important), was used to measure how important various pieces of equipment are to their satisfaction as a driver. Respondents were asked to assess the importance of equipment such as a CB radio, complete gauge set, power steering, air conditioning, air ride suspension, double bunk, etc. This scale demonstrated a coefficient alpha of .80.

Importance of Influencing Management. Ten items using a five point scale (l=not at all important, 5=very important) were used to assess the importance to drivers of being able to influence management on a variety of issues, such as truck maintenance, dispatch procedures, fringe benefit package, where fuel is purchased, safety, etc. Coefficient alpha for this scale was .85.

Interest in Training. A twenty-three item, four point scale (l=not at all interested, 4=very interested) was used to measure driver interest in additional training in such areas as safety regulations, defensive driving, injury prevention, hazardous materials, maintenance procedures, company policies, transportation industry costs and trends, etc. Coefficient alpha for this scale was .93.

Benefit Adequacy. A ten item, three point scale (l=not offered, 2= not adequate, 3=adequate) was used to assess driver attitude regarding the adequacy of a variety of benefits, including paid vacation, paid holidays, health insurance, dental insurance, eye care, life insurance, child care, disability, retirement, and company social events. Coefficient alpha for this scale was .83.

TABLE 1

DESCRIPTIVE STATISTICS ON DRIVER ATTITUDES
n - 3379[1]

Driver Attitude	Scale Items	Theoretical Range	Mean	Standard Deviation	Coefficient Alpha
Overall Job Satisfaction	21	1-5	3.42	.41	.77
Interest in job enlargement	9	1-4	2.70	.73	.85
Importance of equipment to satisfaction	20	1-5	4.19	.40	.80
Importance of influencing management	10	1-5	4.25	.57	.85
Interest in training	23	1-4	2.91	.60	.93
Benefit adequacy	10	1-3	2.22	.46	.83
Importance of recognition	11	1-4	3.39	.49	.85
Supervisor description	16	1-4	2.88	.62	.90
Perceived attitude of company toward employees	14	1-4	2.76	.72	.94
Standard of living	1	1-5	2.90	.74	--
Income compared to other trucking companies	1	1-5	3.95	.95	--
Income compared to other industries	1	1-5	3.94	1.11	--
Advancement opportunity within company	1	1-5	3.62	.95	--
Advancement opportunity within industry	1	1-5	3.40	.85	--

[1]Sample size may be less than 3379 for some variables due to missing data.

Importance of Recognition. An eleven item, four point scale (l=not at all important, 4=very important), was used to measure driver attitudes toward programs aimed at recognizing: accident free operation, minimizing cargo loss, miles of driving, good Samaritan acts, performance beyond standard, on-time pick up and delivery, etc. Coefficient alpha for this scale was .85.

Supervisor Description. Drivers' attitudes toward their supervisors were assessed by asking them to describe their supervisors using a sixteen item, four point scale (l=not at all, 4=very much). Items included descriptions of the degree to which supervisors: ask for drivers' opinions, treat drivers with respect and dignity, give credit to drivers for a job well done, provides clear expectations; as well as the

degree to which the supervisor is: fair, receptive to suggestions, trustworthy, competent, supportive, etc. Coefficient alpha for this scale was .90.

Perceived Attitude of Company toward Employees. Fourteen questions using a four point scale (l=not concerned at all, 4=very concerned) were used to measure the degree to which drivers perceived their company as being concerned about employees' needs. Drivers were asked to rate their company's level of concern for the well-being, home life, safety, income, career advancement, health, job security, working conditions, etc. of their employees. Coefficient alpha for this scale was .94.

Other Measures. In addition to these multi-item scales, five one-item scales were used to tap additional employee attitudes. Using five point scales, respondents were asked about the standard of living their income as a driver provides (l=low, 5=high standard of living); their income compared to that provided by other trucking companies for comparable work; their income compared to income provided by opportunities available to the respondent in other industries (l=much lower, 5=much higher); and advancement opportunities within their company and advancement opportunities within the motor carrier industry (l=don't know, 2=very poor, 5=very good).

Research Design

This study consists of two independent variables: career stage and time spent on the road and 14 dependent variables. The design of the study represents a 3 X 2 factorial design whereby three levels of career stage are crossed with two levels of road time.

Results

Multiple analysis of variance revealed significant main effects for career stage ($F=22.39$; $p\leq.001$) and road time ($F=15.70$; $p\leq.001$) on the set of fourteen driver attitudes. Consequently, ANOVAs were performed to determine which specific attitudes were impacted by the independent variables of career stage and road time.

Impact of Career Stage on Driver Attitudes

Table 2 shows the results of analyses of variance for career stage and road time on each of the fourteen dependent variables. As noted in the table, career stage significantly affected all driver attitudes except the importance of recognition to drivers and their perceived standard of living. Specifically, drivers who have been a professional driver more than ten years (late career stage drivers) report more negative attitudes about their work, perceived income and advancement opportunities than do early career stage drivers. Moreover, they also report higher levels of interest in job enlargement and in training. See Table 3 for information on the specific mean values for each attitude for each level of career stage.

Because statistical significance could be attributed to the large sample size, eta-squared values were calculated. Eta-squared values, reported in parentheses in Table 2, represent in percentage terms, the amount of variation explained in each dependent variable by each independent variable. For example, as shown in the Table 2, the amount of variance in driver attitudes explained by career stage varies, ranging from .2 percent of the variation in the importance of influencing management to 10.5 percent of the variation in driver perceptions of the advancement opportunities available within their company. Consequently, eta-squared provides a measure of the ability of career stage or time spent on the road to explain any given driver attitude.

TABLE 2
THE EFFECTS OF CAREER STAGE AND ROAD TIME ON DRIVER ATTITUDES
N = 3379[1]

Sources of Variation	Component Job Sat.	Interest in Job Enlarge-ment	Importance of Equip. to Sat.	Importance of Influencing Mgmt.	Interest in Training	Benefit Adequacy	Import. of Recog.	Super-visor Desc.	Att. of Co. to Empl.	Stan-dard of Living	Income Compared to Other:		Advancement Opportunity Within:	
											Trucking	Indus.	Co.	Indus.
MAIN EFFECTS														
Career Stage (CS)	26.67*** (1.5%)	15.55*** (1%)	68.72*** (3.9%)	3.65* (.2%)	8.14*** (.5%)	57.30*** (8.3%)	.69	16.49*** (1.0%)	54.63*** (3.1%)	1.30	22.84*** (1.4%)	18.34*** (1.1%)	171.54*** (10.5%)	86.13*** (5.6%)
Road Time (RT)	.19	.00	161.32*** (4.5%)	25.09*** (.7%)	20.05*** (.6%)	92.03*** (2.7%)	14.86*** (1.8%)	36.27*** (1.1%)	21.17*** (.6%)	9.35** (.3%)	6.10** (.2%)	6.06** (.2%)	5.58* (.2%)	.63
INTER-ACTION EFFECT CS X RT	1.59	.65	17.69*** (1.0%)	1.70	.74	2.74	3.49* (.4%)	3.96* (.2%)	5.60** (.3%)	.94	.29	.16	13.52*** (.9%)	2.69

[1] Sample size may vary for ANOVAS on some dependent variables due to missing data.
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$
n^2 values are in parentheses.

TABLE 3

DRIVER ATTITUDE MEANS BY LEVELS OF CAREER STAGE AND ROAD TIME

Driver Attitudes	*Career Stage*			*Road Time*	
	Early	Middle	Late	Short	Long
Component job satisfaction	3.47	3.38[a]	3.36[b]	3.41	3.43
Interest in job enlargement	2.65	2.70	2.81[b,c]	2.72	2.69
Importance of equipment to satisfaction	4.26	4.19[a]	4.07[b,c]	4.09	4.29***
Importance of influencing management	4.30	4.25	4.29[b]	4.20	4.29***
Interest in training	2.88	2.93	2.98[b]	2.87	2.95***
Benefit adequacy	2.35	2.11[a]	2.08[b]	2.28	2.17***
Importance of recognition	3.39	3.37	3.39	3.35	3.42***
Supervisor Description	2.94	2.86[a]	2.80[b]	2.94	2.83***
Attitude of company toward employees	2.87	2.73[a]	2.58[b,c]	2.79	2.73***
Standard of living	2.88	2.89	2.92	2.94	2.85**
Income compared to other trucking companies	3.05	2.93[a]	2.78[b,c]	2.97	2.93**
Income compared to other industries	3.04	2.94	2.76[b,c]	2.97	2.91**
Advancement opportunity within company	3.90	3.46[a]	3.20[b,c]	3.60	3.63
Advancement opportunity within industry	3.60	3.30[a]	3.13[b,c]	3.36	3.44*

[a] Significant difference exists between drivers at early and middle career stages.
[b] Significant difference exists between drivers at early and late career stages.
[c] Significant difference exists between drivers at middle and late career stages.
* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Impact of Road Time on Driver Attitudes

As with career stage, time spent on the road affected nearly every driver attitude. As shown in Table 2, those not affected by road time were component job satisfaction, interest in job enlargement, and perceived advancement opportunities within the industry. Equipment was more important to long road time driver satisfaction, as was the importance of influencing management and recognition, than to short road-time drivers. In addition, long road time drivers reported more negative attitudes concerning issues such as benefits, income, and advancement opportunities than did short road time drivers. Table 3 reports specific mean values for each attitude for long versus short road time drivers.

In terms of the amount of variance in driver attitudes explained, road time appears to have less of an impact than does career stage. The amount of variance explained, as reported in Table 2, ranged from .2 percent of the variance in income levels as compared to similar jobs in other trucking companies and other industries, and perceived advancement opportunities within the company to 4.5 percent of the variance in the importance of equipment to driver satisfaction.

Interaction of Career Stage and Road Time

Career stage and road time interact to significantly affect only five of the fourteen driver attitudes: importance of equipment to satisfaction, importance of recognition, how favorably drivers describe their supervisors, driver perceptions of their companies' attitudes toward employees, and perceived advancement opportunities within the company. The amount of variance explained in these attitudes by the interaction of career stage and road time was not very large, ranging from .2 percent of the variance in descriptions of supervisors to 1.0 percent of the variance in the importance of equipment to driver satisfaction. The two findings explaining nearly 1 percent of the variance merit a brief elaboration. First, the data suggest that the importance of equipment to driver satisfaction becomes less important over time (i.e., within later career stage) for short road time drivers but not for long road time drivers. For this latter type of driver, the importance of equipment to satisfaction remains fairly constant over time.

Second, data on perceived advancement opportunities within the company suggest that it is within the early career stage (i.e., the first 2 years as a driver) that a disparity exists between the perceptions of short versus long road time drivers. Early career stage short road time drivers report much lower perceived

advancement opportunities than does any other type of driver, while early career stage long road time drivers report higher perceived advancement opportunities within the company than does any other type of driver. A possible explanation for this phenomenon is that long road time drivers who are new to the profession progress through a normal reduction of expectations. They enter the profession optimistic and over time adjust their expectations and attitudes accordingly. Early career short road time drivers, on the other hand, may perceive little advancement opportunity because they already have the "preferred route/schedule".

Discussion

As previously noted, career stage can be operationalized in a number of ways. Although occupational tenure was used in this study, for truck drivers occupational and positional tenure are virtually synonymous, given that the nature of the job of being a driver does not change over time. In light of this, the results of this study on the effects of career stage are consistent with previous research showing that greater positional tenure is associated with increasingly negative attitudes; e.g., satisfaction with one's supervisor and with promotional opportunities[18]. The major factors impacting on driver attitudes over the driver's career stage are not income related (although career stage does explain over one percent of the variation in perceptions of income), but rather equipment, benefits, perceived advancement opportunities (both within and outside of the company), and driver perceptions of the company's attitude toward its employees. These findings are similar to previous research involving other populations both in the magnitude and the direction of the relationship between career stage and employee attitudes. Consequently, truck drivers may not be all that unique from other types of employees. The results of this study, however, do offer specific insights for management to use in attempting to influence driver attitudes and subsequent behaviors.

The finding that experienced drivers hold different, i.e., more negative, attitudes than new drivers should not be taken lightly. Of particular importance are those attitudes impacted heavily by career stage; i.e., benefit adequacy and advancement opportunities. Companies should give serious consideration to cafeteria plans in the design of their benefit systems in order to recognize driver differences based on their career stage.

Similarly, both Rodriguez and Griffin and LeMay and Taylor have called for a classification/career management system for drivers[19]. Such a system outlines a progressive career ladder within the driving profession which may serve as a means to influence driver satisfaction as well as provide a basis for clarifying advancement opportunities for drivers. LeMay and Taylor's model goes one step further by advocating apprenticeship programs as a mechanism for recruiting new drivers. The finding that late career stage drivers have increased interest in job enlargement suggests a unique opportunity. Late career stage drivers could have their jobs enlarged by involving them in the training of apprentice drivers. Such a mentoring program could be an alternative to sending new recruits to professional driving schools. Such a program could have the added benefits of providing a positive experience for long term drivers, particularly if appropriate recognition programs are included, as well as realistic job previews to apprentices.

LeMay and Taylor also suggest another source of drivers for motor carriers; i.e., current employees who are nondrivers[20]. The mentoring program suggested above could also be used here. More importantly, the results of this study implies the reverse may also hold. That is, it may be useful to think in terms of how drivers could be positioned to perform nondriver functions within the organization. One possibility involves the current push toward TQM (Total Quality Management) that is sweeping industry. TQM offers motor carriers the opportunity to position their drivers as "drivers of quality" as well as transporters of goods. Drivers constitute a highly visible boundary spanner between the motor carrier organization and elements of its environment. This study suggests that drivers are (a) interested in job enlargement, (b) interested in training, and (c) would like to be able to influence management, and that these interests become more pronounced the greater their tenure as a driver. The opportunity appears to exist for companies to make greater use of these experienced drivers in nondriving capacities. Driver interest in benefit adequacy suggests, however, that such use cannot come without appropriate rewards.

Time spent on the road appears to have less utility as a means of classifying drivers than career stage. While time spent on the road did significantly affect driver attitudes, the amount of variance explained was low. Two aspects that do have implications for motor carriers are the importance of equipment to driver satisfaction and the adequacy of their fringe benefit packages. These two attitudes are different for long versus short road time drivers and should be considered by motor carriers as they seek ways to positively influence the problems of driver shortages and driver turnover.

Limitations of the Study

The results of this study must be viewed within the limitations that surround this research. First, the trucking firms represented in this study were not drawn from a random sample of firms (i.e., the thirteen firms contacted agreed to participate and partially fund the study). In effect, the sample probably represents the most progressive truckload carriers, i.e., carriers interested in improving and developing the human resources of their organizations. This supposition is substantiated by the rather high average attitudinal ratings. (See overall means in Table 1.) Consequently, the results of this study are illustrative of the impact of career stage and road time among a nonrepresentative sample of drivers and one must be cautious in generalizing to other motor carriers, particularly less progressive ones.

A second limitation to this study is the absence of established measures of employee attitudes. All of the measures were specially developed for this study, making cross-study comparisons with other population groups difficult.

Finally, the methodology of the study, whereby all data are collected via a single survey, leaves open the possibilities of common method error variance and response biases. Nevertheless, this study offers insight into a seldom studied occupational group.

Future Research

If we are to better understand and influence driver attitudes, we must recognize that not all drivers are alike. This study illustrates that personal and job-related factors can serve to differentiate drivers. Career stage and, to a lesser extent, road time provide some insights into the attitudes of drivers. Future research should examine other possible personal and job-related factors, such as marital status, education level, type of motor carrier firm, whether drivers drive in teams, method of payment (by the mile, by the trip, percent of freight bill), that can help us better understand professional drivers so that we can help design work opportunities to meet their needs. As one example, marital status may play a significant role in driver attitudes and willingness to be on the road; i.e., the quality of one's marital life may be inversely related to driver willingness to be "out on the road". The more information we have regarding driver attitudes, the more direct and indirect cost savings we can generate for the motor carrier industry. In turn, the greater the cost savings achieved in this manner, the more responsive and competitive motor carriers can become.

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