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The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit: Employee Attitudes, Withdrawal Behavior, and Bargaining Unit Structure

MARCH 1980

FINAL REPORT

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16. Abstract

This study comprises the second year's effort in a research project investigating the impact of labor-management relations on productivity and efficiency in urban mass transit. Overall focus of the research is on the impact of four controllable aspects of the labor-management situation (i.e., the legal framework, bargaining structure, the labor-management relationship pattern, and the collective agreement) on four components of transit performance: service effectiveness; service efficiency; employee withdrawal (i.e., turnover, absenteeism and tardiness); and organizational adaptability.

The second year's research focused on three topics: (1) the causes and impacts of organizational commitment in lower-level transit employees; (2) the causes and impacts of turnover and absenteeism; and (3) the relationship between bargaining unit structure and transit performance.

Employee commitment to transit organizations had beneficial impacts on service efficiency, organizational adaptability and turnover. The extent of employees' commitment was related, in turn, to satisfaction with several aspects of treatment by the organization. Turnover, in moderate amounts and under appropriate organizational policies, was found to be cost-beneficial. Absenteeism, on the other hand, was found to be costly--an expense that could be reduced by suggested changes in policy. Several common beliefs about the impact of bargaining structure on organizational effectiveness were unsupported.

17. Key Words
Labor-Management Relations, Absenteeism, Performance Indicators, Bargaining Unit, Organizational Commitment, Efficiency, Job Satisfaction, Productivity, Turnover

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METRIC CONVERSION FACTORS

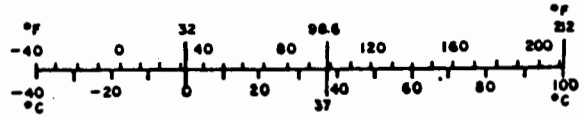
Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in = 2.54 (exactly). For other exact conversions and more detailed tables, see NBS Misc. Publ. 286, Units of Weights and Measures, Price $2.25, SD Catalog No. C13.10:286.

Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	35	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



EXECUTIVE SUMMARY

This report summarizes the results of the second year's research, in a project titled The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit. Principal focus in the second year was on three areas: bargaining unit structure; absenteeism and turnover; and organizational commitment.

PROBLEM STUDIED

The project investigated associations between controllable aspects of the labor-management relationship and indicators of transit property performance. The study focused on fixed-route bus systems, with a sample comprised of twenty-eight organizations located in the Western United States.

Six data collection instruments were used in the research. Questionnaires were administered to transit employees, transit managers and labor leaders in order to obtain data on relevant attitudinal, organizational, and performance variables. A structured interview was employed to obtain information on several aspects of collective bargaining practices and the perceived impact of the collective bargaining legal framework. A detailed checklist was used to record operational and historical data from organizational records. Finally, existing collective bargaining agreements were content-analyzed for purposes of comparison of inducements and contributions across participating organizations. In addition to the six formal instruments, tape recordings were made during each site visit to record subjective impressions gained during on-site observation and informal interviews with managers and employees of the organizations visited.

In the interest of providing a coherent picture, some of the major highlights of the first year's analysis are reiterated in this report, along with a more detailed exposition of the second year's research.

RESULTS

Major Findings from the First Year

1. Existing labor relations laws had less impact on either bargaining practices or transit performance than had been anticipated. A combination of the carryover of private-sector bargaining practices into the public sector, and lack of complete familiarity with the law on the part of some key personnel, appeared to be responsible for major differences between legal constraints and actual practices. These findings extended to the impacts of Section 13(c), as well. While Section 13(c) has a potential impact on the performance of transit properties, that potential had not been realized at the organizations participating in this study. No instances were encountered where the protections guaranteed an employee were granted because of the adverse impact of federal funding. Considerable uncertainty did exist, however, about the best way to respond to the constraints created by 13(c) and the circumstances which might subsequently result in a 13(c) judgment.

2. Certain structural characteristics of transit labor organizations are related to the incidence of strikes: (1) the absence of a functioning intermediary body between local and national level; (2) low negotiating expertise at the local level; and (3) high levels of participation by national and international officials in local bargaining. The latter characteristic probably results in a high incidence of "pattern bargaining", union negotiators not intimately familiar with local situations, and management overreaction to the presence of national/international representatives. These are the most likely intervening variables in the union structure-strike association.

3. Centralization of management decision-making authority in negotiations was found to produce few benefits, per se. The particular policies pursued by management in negotiations probably overrides this structural factor. Our results also indicated that labor-management negotiations in public transit have, as a normal feature, some influence

by external interests. While third-party attempts at intervention can complicate the process of reaching agreement, no serious impacts of third-party influence on transit performance were found.

4. Transit managers and labor leaders at the participating properties were asked a standard set of 25 questions, in order to derive a relationship pattern index for the relevant property. There was close agreement between labor and management responses, indicating that the relationship pattern is a unitary and stable organizational attribute. Participating properties were categorized into three groups, based on their location along a conflict-cooperation continuum: cooperation; accommodation; or containment-aggression. Contrary to conventional belief, no relationship pattern appeared optimal with respect to all performance indicators. A more cooperative pattern was associated with lower personnel turnover and greater organizational adaptability, but this pattern was also associated with higher absenteeism. It appears that the labor-management relationship pattern can become too cooperative. Some minimum level of inter-party conflict may be needed to stimulate problem solving and maintain labor and management's awareness of their separate interests.

5. Of all the controllable aspects of the labor-management relationship investigated, the collective agreement showed the most direct linkages to transit property performance. Some provisions in the collective agreement appeared to encourage dysfunctional employee behavior. For example, as the number of sick days granted to employees increases, so does the absence rate. Some disparity was also found between the content of the collective agreement and the administration of the grievance mechanism. The established procedures appeared frequently to be bypassed. Our general conclusion was that changes in the collective agreement hold the potential for the improvement of organizational performance, provided that negotiated changes in organizational policy result from mutual problem solving, rather than distributive bargaining.

6. The research incorporated twelve transit performance indicators categorized into four classes: service efficiency; service effectiveness; employee withdrawal; and organizational adaptability. While the first of the above-listed classes is efficiency, per se, the other three classes

are various dimensions of effectiveness. Our empirical analyses clearly demonstrated the validity of this multidimensional representation of transit performance. The several indicators used did not necessarily covary, and it appears that organizational actions that increase performance on one dimension may be unrelated to, or even reduce, performance on other dimensions. Managers and policy makers must become more aware of the nature of these trade-offs and how to effectively cope with them.

Organizational Commitment and Job Satisfaction

1. Organizational commitment of lower-level employees was found to take two general forms: value commitment, in which the employee becomes psychologically identified with the organization; and membership commitment, in which the employee's prime concern is retaining member status in the organization. While the two forms of commitment tend to covary they are conceptually and empirically separable.

2. Organizational commitment of lower-level employees was found to be significantly related to several transit performance indicators. Organizations whose employees' commitment tends toward value commitment enjoy a relative advantage in adaptability and service efficiency. Those whose employees' commitment tends toward membership commitment have relatively lower turnover.

3. Commitment to the organization was found to be strongly related to several aspects of job satisfaction--particularly the extrinsic rewards (e.g. supervision, compensation, advancement and recognition) provided by the organization.

4. Using a standard job satisfaction survey instrument, transit employees were found to be less satisfied with their jobs than were several comparative occupations. Particular sources of dissatisfaction were quality of supervision, recognition, and company policies and practices. Informal interviews with employees provided additional support for these findings. They highlighted two general aspects of the job critical to transit operator satisfaction: (1) safety and protection of operators; and (2) recognition of the driver as an input source regarding needed procedures & policy changes.

5. The relationships between satisfaction and turnover, and between commitment and several aspects of transit performance, indicate that employee attitudes may have important organizational consequences. Within limits, it is recommended that transit organizations engage in formal periodic efforts to assess performance-related employee attitudes.

Absenteeism and Turnover

1. Absenteeism and turnover were found to be separate phenomena, which have few common correlates. Contrary to an historically popular view, turnover is not simply an extreme case of absenteeism. This is clearly demonstrated by the different associations of these two variables with employee satisfaction. While job dissatisfaction was strongly related to turnover, absenteeism actually rose (insignificantly) with increasing satisfaction.

2. The research supported a "decision model" of absenteeism, i.e. absences result from an employee's subjective cost-benefit analysis of the consequences of being absent. We found evidence that the existence of certain policies (or lack thereof), which might affect an employee's subjective assessment of costs and benefits, are key factors in employee absence behavior. Specifically, organizations that pay operators a higher rate, allow sick benefits to accumulate at a faster rate, and do not remunerate unused sick leave have higher rates of employee absenteeism.

3. Absenteeism was found to be a serious cost factor for public transit. Furthermore, there was little indication that extraordinary steps are being taken to curtail absence rates. In fact, as we note above, some organizational policies and practices appear to reward absenteeism.

4. In contrast to absenteeism, turnover is not inevitably costly. Some optimal (non-zero) level probably exists for any given transit organization. Within situational limits, some cost savings might be realized from employee turnover. These benefits can be maximized by revision of wage rate policies.

Bargaining Unit Structure

1. The research evaluated several widely-held beliefs about the consequences of variations in the size, number, and scope of bargaining units. These conventional beliefs include: (1) smaller units enhance employee democracy; (2) fewer units improve employer efficiency; (3) fewer units facilitate stable labor relations; and (4) departmental units are superior (from employer's point of view) to occupational units.

2. The relationships between bargaining unit size, number of units (fragmentation), and scope (occupational vs. departmental units), and 17 different outcome variables were tested. Contrary to conventional belief, only 21 of the 51 possible bi-variate relationships were statistically significant ($p < .10$ or better). However, the small sample size may have been largely responsible.

3. The bargaining structure-outcome relationships that were found to be significant included: as unit size increases and scope narrows, union member's attitudes toward their union become more positive; strike frequency increases with bargaining unit fragmentation.

4. Regardless of the "appropriateness" of a bargaining unit, the parties are likely to adapt and adjust to a given unit's structure. Appropriate structure, therefore, might be as much as matter of developmental history and acceptance by labor and management, as it is a matter of size, scope, and fragmentation.

UTILIZATION OF RESULTS

The principal users of this research will be labor-management representatives, transit district governing boards, consultants, policy makers, and transit organization managers. During the course of the research, periodic feedback has been provided to participating organizations. It is expected that this information will help to effect changes in these organizations. However, the results of this research appear to be generalizable beyond the participating public transit organizations.

CONCLUSIONS

The study has identified several relationships between various aspects of the labor-management situation and transit property performance. The second year of the project built upon the first year's results by concentrating upon bargaining unit structure, employee absenteeism and turnover, and organizational commitment and job satisfaction of lower-level employees. While data about these aspects of the labor-management relationship had been included in the first year's data collection, time constraints had precluded detailed analysis. The second year's report includes several specific prescriptions for transit mangement relative to decreasing absenteeism, optimizing turnover, and increasing the level of organizational commitment of lower-level employees.

ACKNOWLEDGMENTS

The research presented in this report has built upon the work performed during the previous year. For that reason, we are indebted to several associates who, although not direct participants in the present research project, helped make this report possible through their earlier contributions. In particular, Mark Pittel was involved in every aspect of the prior year's research and shouldered responsibility for many of the day-to-day administrative tasks. Dr. Les Berkes and Michael Spendolini contributed many hours during the early phases of the first year, including direct involvement in site visits to collect the data from which the present report's findings are drawn.

The Institute of Transportation Studies (ITS) provided guidance, technical assistance and financial support. We are grateful to its Director, Gordon J. (Pete) Fielding, and to its Program Manager for the Transit Management Program, Al Hollinden, for their support, encouragement and critical evaluation of our efforts. By drawing upon their expertise, we feel we have been able to circumvent many potential problems and, hopefully, to improve the quality of our product. As had been the case during the previous year, the ITS Librarian, Lyn Long, greatly facilitated our literature searches.

Two other ITS members deserve special mention. Esther Frank ensured that the level of clerical support provided by ITS was top-grade and timely. The brunt of the typing load fell to Gwen Weathersby. Her cheerful willingness to re-type long documents, no matter how many times we changed our minds, made our tasks easier.

We are indebted to Dean Lyman Porter and the staff of the Graduate School of Administration (GSA) for our office space, as well as for management of the project's finances. Particular thanks are due, in the latter respect, to Sandra Verdugo, Dori Marsh and Kay Crosser.

Data management assistance was provided, under the auspices of the Public Policy Research Organization (PPRO), by Dr. Debora Dunkle. We feel we owe very special thanks to Debbie for the many occasions upon which she was able to translate our vague notions into clear-cut data analysis, for her undiminished responsiveness to what, at times, was a marathon of analysis requests and, above all, for her patience.

Dan Dalton joined the project for part of the year and assumed principal authorship of one of the technical reports. Many others, including several persons named above, rendered invaluable assistance through their comments and recommendations regarding earlier versions of this report. We are especially grateful to Kenneth R. Moore, Vice President and Director, Bus Department of the United Transportation Union, for his thoughtful comments.

Our technical monitor, Carl Swerdloff, again deserves our gratitude for his guidance and support throughout the project.

Last, but obviously not least, our wives Wendy and Marilyn contributed significantly to the project by their moral support, as well as by their forbearance on those occasions when our obligations to the project conflicted with our obligations to our families.

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INTRODUCTION

In recent years, the status of labor-management relations in the public transit industry has become a topic of widespread interest and concern. In July, 1977, the U.S. Department of Transportation, Office of University Research, first funded this research project, titled The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit. Funding was provided in July, 1978, for a second year of research. This final report summarizes the objectives, findings, and conclusions of these two years of research.

Although the results of the first year of the project have previously been published[1], we thought it would be useful to summarize them again, together with our second year results, in this report. Some previously unpublished findings of the research group are also discussed in this report. Appendix A lists the working papers and reports that we have drawn upon for the preparation of this report.

The body of this report is divided into three main sections. The first section discusses the objectives of the research and the problems that were investigated. The next section discusses the major findings of the research. In the final section, we summarize the implications and conclusions emanating from our research. If the reader is particularly interested in the practical implications of our research, he or she may wish to turn directly to this section. The body of this report is followed by three appendices (Appendix B, C, and D) that more fully present the technical details of our second year's research.

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[1] James L. Perry, Harold L. Angle, and Mark E. Pittel, The Impact of Labor-Management Relations on Productivity and Efficiency in Urban Mass Transit (Washington, D.C.: U.S. Department of Transportation, Office of University Research, 1979).

STUDY OBJECTIVES AND PROBLEMS INVESTIGATED

Joint labor and management decision making covers an almost limitless number of areas in public mass transit: work rules; grievance procedures; job security; fringe benefits; wage rates; working conditions. However, despite an occassional attempt to narrow the knowledge gap, our understanding of the impact of labor-management decision making on transit organization performance had been quite limited throughout most of the 1970's.[2] Pronouncements about the positive and negative influences of labor-management relations on transit organization performance varied widely.

It was from the perspective that labor-management relations were a critical dimension of transit operations, and research could contribute to their improvement, that we began our study. Subsumed under this general goal of improving labor-management relations in urban mass transit were a number of more specific objectives. These objectives were: (1) to develop valid generalizations about labor-management relations in public transit; (2) to define and validate measures of productivity, efficiency, and effectiveness that could be used to compare public transit organizations; (3) to determine the relationship of several aspects of the labor-management situation, including features of the collective agreement, to the standardized performance measures; and (4) to identify specific changes in labor-management relations that, if implemented, might help to control costs or to improve effectiveness.

These objectives have guided our research during the past two years. One of the first tasks we undertook, in order to accomplish the objectives above, was a large-scale field study that focused on fixed-route bus systems. The sample was comprised of twenty-eight public mass transit

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[2] A literature search prior to the initiation of this research uncovered only a very few studies on transit labor relations. And many of these studies were cases of single organizations that offered few useful generalizations. See Carder Hunt, Lyn Long, and James Perry, Labor-Management Relations in Urban Mass Transit: An Annotated Bibliography (Irvine, CA: Institute of Transportation Studies Working Paper, November, 1976).

organizations from the Western United States. The sample was quite diverse with respect to organizational size, organizational form, and bargaining unit structure. Visits were conducted to each of the participating sites, and statistical and qualitative comparisons were made among the organizations.

Six different instruments were used to collect data during the site visits. Transit employees, labor leaders, and managers were surveyed through self-administered questionnaires to obtain data on relevant attitudinal, organizational, and performance variables. A structured interview was also conducted with the labor relations manager at each transit property to obtain information on legal policies and recent labor-management negotiations. Most of the performance and historical data on each property were recorded on an archival checklist. Finally, information was obtained on collective bargaining agreements, using a content-analysis instrument to score the agreements.

The first year of research was devoted to identifying linkages between various facets of labor-management relations and twelve specific indicators of public transit performance. A systems model, relating aspects of the labor-management situation with the performance indicators, was used to guide the research. The performance indicators encompassed four basic dimensions of transit performance: service efficiency; service effectiveness; employee withdrawal (i.e. turnover, absenteeism, and tardiness); and organizational adaptability. The performance components were related to variables drawn from several controllable aspects of the labor-management relationship: the legal framework; labor and management organization for collective bargaining; the content of the collective agreement; and the labor-management relationship pattern.

During the second year of the research project we focused on three more discrete issues. Among these was an issue traditionally of concern to industrial psychologists. Behavioral scientists have attempted, for many years, to establish firm linkages between employees' job-related attitudes and their work behavior. Traditionally, the attitudinal focus of this effort has been on the concept of employee job satisfaction. Recently, there has been a discernible shift of interest toward a related,

yet distinguishable type of employee attitude--commitment to the work organization. Most research on commitment has been directed toward the managers of organizations. There have been few rank-and-file studies, fewer still in the public sector, and none in public mass transit. We extended the study of organizational commitment to public mass transit organizations. Our objective was to identify its nature, its causes, and its consequences for public transit organizations.

The analysis of organizational commitment and job satisfaction utilized standard measures, with a sample of 1224 lower-level employees (1093 of these employees were bus operators), to determine: (1) the viability of the concept of organizational commitment in this setting, and whether organizational commitment adds explanatory power beyond that provided by job satisfaction; (2) whether organizational commitment is a unitary concept or a composite of separate attitudes; (3) the personal and situational factors that lead to employee commitment; and (4), the consequences for transit organizations of having committed (or un-committed) employees.

Another issue we investigated during the second year was the direct result of the relationship between absenteeism and turnover that we had uncovered during the first year of the project. We had discovered that absenteeism and turnover were not different degree levels along a withdrawal continuum but might be substitutes for one another. We indicated then that further research was needed to better draw the necessary distinctions between turnover and absenteeism, both in their proximate causes and in their impacts upon transit organizations.

Against this background, we began a more rigorous assessment of the impact of absenteeism and turnover on public mass transit performance. Traditionally, the focus has been on the dysfunctional impact of these phenomena on the operations of the organization. The research extended our understanding of absenteeism and turnover by a careful analysis, not only of the negative implications of turnover and absenteeism for the transit organization, but the potentially positive impacts as well. Our data were analyzed to establish: (1) the impact of absenteeism on the effectiveness and efficiency of transit operations; (2) the impact of turnover on the effectiveness and efficiency of operations; and (3), possible strategies which could be used by management of transit properties to reduce the costs

and increase the benefits associated with turnover and absenteeism in urban mass transit.

The final area we investigated during the second year was the association between bargaining unit structure and transit performance. The issue of the "appropriate" design or structure for employee bargaining units has generated considerable interest in both private and public sector labor relations. Three dimensions of structural variation are most frequently discussed in the literature: size, fragmentation, and scope. Size involves a relatively straightforward consideration of the number of employees that should be included within a given bargaining unit. Fragmentation of bargaining units is a jurisdiction-wide issue and focuses on the problem of proliferation of units within a single organization. Finally, bargaining unit scope refers to whether the unit is organized on an industrial (vertical) basis, or on an occupational (horizontal) basis. No research has systematically assessed assertions about the consequences of the size, number, and scope of bargaining units. Among the assertions about bargaining unit structure and outcomes that we investigated were: (1) smaller units enhance employee democracy; (2) fewer units improve employer efficiency; (3) fewer units facilitate more stable labor relations; and (4) departmental units are superior to occupational units.

Representative of the specific problems investigated during the two-year research project are the following questions:

> Do legal policies toward collective bargaining in transit--for example, methods of dispute resolution (i.e. mediation, fact-finding, and arbitration--have any influence on transit organization performance?
>
> What forms of management organization for collective bargaining are most conducive to transit organization performance?
>
> To what extent do particular aspects of the collective agreement (e.g., work rules provisions) constrain or promote efficiency?
>
> What factors influence transit employees' level of job satisfaction and organizational commitment?
>
> What are the antecedent conditions that relate to absenteeism and voluntary turnover among transit employees?

RESEARCH FINDINGS

This section highlights the major findings of the research. These findings are organized around ten major issues or problem areas. Each issue or problem area was originally addressed in a report or working paper. If the reader is interested in the methodology or statistical associations upon which these findings are based, he or she should consult the original technical report.

1. The Labor Relations Legal Framework

The legal rules governing labor-mangement relations, though somewhat influential, had less impact upon transit performance than we had anticipated. With a few notable exceptions, management officials who presumably should have been knowledgeable about the legal constraints were not fully cognizant of key provisions in the statutes. This lack of familiarity with the legal framework for labor relations often resulted in significant differences between objective legal constraints and operative constraints. While this variation between the statute and the "rules" at the property appeared to be the result of lack of familiarity with the statutes, these differences had no apparent influence on performance.

Of the different aspects of formal collective bargaining legal policy which we investigated, only bargaining-rights variations had some association with transit performance. Even in this case the associations were limited. The scope of bargaining and the availability of arbitration had no association with the transit performance indicators. Strikes, on the other hand, were associated with the performance indicators, suggesting that actual behavior is more clearly and directly related to performance than is formal policy.

The weak associations between collective bargaining laws and transit performance extended to an analysis of the impacts of Section 13(c) of the Urban Mass Transportation Act of 1964. Any significant adverse impacts of Section 13(c) upon transit performance appear to be more a potential problem than a real problem. No instances were encountered in our sample in which protections guaranteed by a 13(c) agreement were granted an employee because of an adverse impact of federal funding. Considerable

uncertainty did exist, however, about the best way to respond to the constraints created by 13(c) and about the circumstances which might lead to a 13(c) judgment.

2. Labor and Management Organizational Structure

Several characteristics of transit labor organizations related to the incidence of strikes. These characteristics are: (1) the absence of a functioning intermediate-level labor organization between the national and local organizations; (2) low levels of negotiating expertise among labor officials at the local level; and (3) high levels of participation by national and international officials in local bargaining.

While national officials most often bring to the local organization skills unavailable at the local level, their presence also creates certain tensions. Foremost among these tensions is that, because of demands upon their time created by their role in assisting many organizations, national representatives cannot be fully responsive to the unique demands of the local membership or particular problems of local management. National officials must, therefore, react to local issues according to routine response patterns that they develop over time. Part of the problem associated with national representatives participating in local negotiations may also be the tendency of management to "overreact" to their presence.

Significant associations between management structure and relevant organizational outcomes are more difficult to ascertain. Centralization of decision-making authority might improve management performance in negotiation, but it is not a sufficient condition for achieving preferred organizational outcomes. Centralization of bargaining authority, alone, was found to produce few net benefits for transit organization performance. The relationship between centralization of management decision-making authority in negotiations and transit performance is probably moderated by the particular policies management pursues in negotiations and by the structure of the counterpart union organization.

External influences in bargaining are probably a normal feature of public transit negotiations, particularly in larger properties. The apparent effects of external influences in bargaining upon transit performance,

however, are minimal. A linkage which was suggested by the results is that change, particularly through the bargaining process, is more difficult to achieve when multiple interests become involved in negotiations and the scope of conflict extends beyond the bilateral relationship.

3. Labor-Management Relationship Patterns

Labor leaders and transit managers at each property essentially agreed on the characteristics of their relationship pattern along a conflict-cooperation continuum. Their agreement suggests that the relationship-pattern concept is a unitary and stable organizational attribute which can be used to predict organizational outcomes.

The linkages between the relationship-pattern concept and transit performance proved to be more complex than we had originally anticipated. More cooperative relationship paterns were associated with lower personnel turnover and greater perceived ability of the transit property to adapt to changing conditions. Absenteeism, however, was higher as the relationship pattern became more cooperative. Although a cooperative relationship is usually considered to be the most desirable, our results do not clearly identify an optimal relationship pattern for urban mass transit. They do suggest that some minimum level of conflict between labor and management stimulates problem-solving behaviors and assures that the parties do not lose sight of their separate interests.

4. The Collective Agreement

Our findings with respect to public transit performance and the collective bargaining agreement spanned five different substantive areas. Relevant sets of contract provisions were associated with the indicators for three of the four performance dimensions. This process produced four sets of generalizations about specific provisions in the collective agreement and particular performance dimensions. Several statistical analyses, which looked at the collective agreement in global terms produced a final set of generalizations.

Following an analysis of work rules and the indicators of service efficiency, we concluded that sweeping generalizations about the relationships of work rules to transit performance do not appear to be warranted. Work rules restrictions on scheduling and assignment of runs were associated with more efficient utilization of human resources i.e. higher ratios of revenue vehicle hours to driver hours. In contrast, provisions covering minimum hours guarantees and scheduling of days-off were related to higher unit operating expenses.

The research found striking associations between particular contract provisions and employee absenteeism. The amount of absenteeism at a property is a direct function of the number of sick days granted to employees. We also found that as wage levels improve with respect to an absolute or relative standard of living, employees are less inclined to work the full amount of their scheduled time. However, while high relative wages can be a disincentive for employees to report consistently to work, we do not recommend wage cut backs as a means to assure work attendance.

Grievance procedures that employees perceived they controlled and that they perceived were effectively administered by their leaders were found generally to reduce employee withdrawal behaviors. We observed during our site visits, however, that the formal grievance procedure was sometimes poorly implemented by labor and management representatives. In some instances labor and mangement officials placed a premium on their ability to handle employee grievances informally, without resorting to contractual procedures or other established organizational policies. However, informal handling of grievances often "short circuited" the process, either by excluding lower levels of management from being involved in resolving a conflict which they had helped to create, or by cutting off one of the few avenues of upward communication for lower-level employees.

In treating grievances informally, top labor and management officials also occasionally arrived at a quid pro quo that suited their roles and interests, but was at odds with the interests of the employee initiating the grievance. For example, sometimes labor and management officials allowed grievances at the arbitration stage to "hang fire" rather than risk establishing a precedent detrimental to either side. In these

situations, the grievance process neither clarified uncertainty about the collective agreement nor served as an acceptable communication channel for employee dissatisfaction.

The collective agreement is a document that formalizes obligations between the parties. Accordingly, we had expected specific clauses in the contract (for instance, those covering contracting out, the obligations of the parties to the public interest, and their obligation toward improving efficiency) to have an impact on organizational adaptability. However, we found no such relationships. On the other hand, we did find adaptability to be associated with the labor-management relationship pattern. Organizations having a relationship pattern toward the "cooperative" end of the continuum were more adaptable than organizations that had a relationship pattern at the "conflict" end of the scale. This leads us to believe that organizational adaptability is impacted more severely by generalized attitudes and relationships, than by specific contract provisions. In fact, we speculate that certain "joint obligations" provisions of the sort that we would expect to limit adaptability, have been inserted into some agreements only as an afterthought--i.e., after management's flexibility had already been reduced.

Our overall assessment of the collective agreement indicated that changes in transit property policy must produce improvements in employee inducements/contributions ratios. Negotiated changes in organizational policy must also involve more than merely "buying-out" bad practices if such changes are to improve transit performance. Distributive issues must increasingly be redefined by labor and management as joint problems, where gains are potentially shared by both parties.

5. Organizational Commitment and Job Satisfaction of Lower-Level Employees

Transit employees can and do become committed to their organizations. Levels of organizational commitment were found to be generally comparable to those in other industries. However, transit employees are generally less satisfied with their jobs than are employees in comparative occupations. Furthermore, there is an overall trend for job satisfaction levels to be lower for transit operators than for other non-supervisory transit employees. For operators and non-operators alike, company policies and practices stood out as the source of greatest dissatisfaction. Job

factors that appeared generally as strong sources of transit operator satisfaction included independence, variety, security, social service, ability utilization, co-workers, and achievement.

Female transit employees reported higher levels of job satisfaction and substantially higher levels of organizational commitment than their male counterparts. These findings are at odds with virtually all published research on sex differences in work-related attitudes. It appears likely that the specific nature of transit work, as well as rapidly changing social norms for women, might be responsible for these results.

Although commitment and job satisfaction have common roots and are conceptually similar, they are not redundant concepts. Organizational commitment has utility, beyond that of job satisfaction, for the purpose of predicting and understanding transit employee behavior. Factor analysis of the organizational commitment items revealed two interpretable factors: value commitment, which appeared to be the employee's identification with, and positive regard for, the transit organization; and membership commitment, which is the employee's instrumental concern with retaining membership in the transit organization.

While value commitment and membership commitment are conceptually and empirically differentiable, there is some overlap. It is suggested that value commitment will lead to membership commitment, but not necessarily the converse.

Both job satisfaction and structural variables (i.e., personal and situational factors related to investments in continued organizational membership) are associated with the employee's level of organizational commitment. However, structural variables show weaker relationships to commitment and, in combined analysis, account for little commitment variance, beyond that accounted for by job satisfaction. Extrinsic job satisfaction relates more directly than intrinsic satisfaction to organizational commitment. In particular, satisfaction with organizational policies and rewards, and with the quality of supervision were found to be important.

6. Employee Attitudes and Transit Performance

Employee levels of commitment and job satisfaction in each organization were related to nine organizational performance indicators covering three broad areas of transit performance: service efficiency, organizational adaptability, and employee participation (turnover, absenteeism and tardi-

ness). At the transit organization level, six of the nine transit performance indicators were found to be related to employees' value-commitment, and three indicators to membership commitment. Value commitment was positively associated with adaptability and negatively associated with intent to quit, separation rate, tardiness, operating expense per revenue vehicle hour, and operating expense per employee. Membership commitment was positively related to adaptability and negatively related to intent to quit and separation rate.

Indicators of operating efficiency and adaptability were more highly correlated with value commitment, and indicators related to employee turnover were more highly correlated with membership commitment. The direction of the difference was consistent for all but one performance indicator, and was statistically significant ($p < .10$, or better) for five of the nine indicators.

Evidence was also presented that transit employees' organizational commitment co-varies with several factors that are well within the capability of transit management to influence, such as organizational policies and practices, the quality of supervision, and a number of extrinsic rewards. Factors that appear <u>not</u> to differentiate committed from uncommitted employees seem to be automatic aspects of the transit operator's job., i.e. resident in the nature of work itself, and largely outside the control of the organization. Unless extraordinary measures were to be taken by management to modify the way mass transit operations are conducted, the transit operator's job will characteristically be high in those job aspects. On the other hand, several of the job factors that do appear to relate directly to commitment are subject to considerable variability, from job-to-job, depending on the way the transit organization treats its employees. For the most part, these controllable job aspects relate to supervision (both technical and interpersonal), company policies and practices, working conditions, promotion practices and wages and benefits.

Wages and benefits represent the <u>only</u> relevant controllable factor for which this study's transit employees appear relatively well satisfied. The five other factors noted above are among the lowest seven job satisfaction scores for transit operators. Clearly, there is room for improvement in areas that could have significant organizational payoffs in terms of employee commitment. And, because of the demonstrated linkage between employee commitment and transit performance, improvements in employee commitment

should affect positively the performance of transit properties.

7. Impacts of Turnover and Absenteeism on Transit Performance

A comprehensive review of research on turnover led us to conclude that turnover is not inherently a negative, dysfunctional phenomenon for an organization. In fact, it might have substantial positive implications for operation of the organization. This is particularly true of organizations with relatively low training requirements for their employees. Where the replacement and training costs are relatively low, a moderate amount of turnover might be a positive phenomenon. Just how costly or beneficial turnover is depends generally on the pay level and quality of the departing employee. For example, turnover might well be desirable if it occurs among poor performers who are highly paid.

There was little evidence from this research that the short-term turnover rates typical among the organizations in our sample, per se, were related to service effectiveness or service efficiency. In some instances, special circumstances associated with employee turnover (e.g., an inability to readily replace employees because of a balky civil service procedure or an inability to retain sufficient women to meet affirmative action requirements) might have detracted from service efficiency or service effectiveness. These special circumstances, however, either did not occur with sufficient frequency or were not of sufficient magnitude within our sample of transit properties to produce any statistically significant results.

We concurred with the findings of several investigators who have suggested that the form of the association between turnover and organizational effectiveness is actually curvilinear. The existence of such a relationship suggests that there is an optimal level of turnover. In other words, while it is possible to have too much turnover, it is also possible to have too little. Too much turnover may well be disruptive. Too little may be reflected in the expense of maintaining the labor force, loss of flexibility, innovation, etc. For instance, we found that organizations that has a high percentage of employees who had been in the organization for 5 years or longer not only had higher rates of absenteeism, but also made poorer showings on the efficiency measures. This leads to speculation that, in those organizations, some selective turnover could actually be beneficial in terms of organizational renewal.

In contrast to turnover, absenteeism was found to be costly for the transit properties examined in this research. Empirical evidence was presented that strongly suggests that employee absenteeism is a deliberate and voluntary strategy in many cases. Models were developed that illustrate the large costs associated with employee absenteeism in transit properties.[3]

8. The Relationship Between Turnover and Absenteeism

In our literature review, over three hundred studies were examined. In areas in which researchers had investigated the same correlates for both turnover and absenteeism, there was little evidence of common correlates. Our research, in fact, suggests that certain correlates are related to turnover and absenteeism in opposite directions. For example, there is a positive relationship between amount of pay received by employees and absenteeism. The more money employees make the more likely they are to take time off. Conversely, there is an inverse relationship between amount of pay and turnover. The more money employees make the less likely they are to quit. It should be noted that tenuous evidence does exist that dissatisfaction with the organization and/or a variety of its characteristics is positively associated with both absenteeism and turnover.

The research found no statistically significant association between property turnover rates and absenteeism rates. Thus, we cannot disconfirm the statement that turnover and absenteeism are separate, distinguishable phenomenon. This result was based on group level data; the archival rates of absenteeism and turnover were obtained from the participating transit properties and were analyzed to determine whether or not they were significantly associated. They were not.

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[3]Absenteeism is a particularly ambiguous phenomenon which has been measured many ways. This makes inter-study comparisons difficult, and reliable statistics for cross-industry comparison are scarce. Accordingly, we do not make the case that overall absenteeism rates are higher in public mass transit than in other segments of the labor force. We do assert that a given absence rate is particularly expensive in the transit industry, because of the need to meet operating schedules. This results in coping through overhiring and/or paying large amounts of overtime wages. Our data showed that absenteeism was significantly related to operating expenses.

Our research provides relatively firm support for the validity of the decision model as an explanation for turnover and absenteeism in transit. This model considers both absenteeism and turnover to be the consequences of organizational participants' decision-making processes. According to the decision model, employees evaluate the positive consequences (benefits) and the negative consequences (costs) of both temporary absence and permanent withdrawal, and act according to their evaluation. This model offers the best fit with our results as well as with the research literature. If absenteeism and turnover are independent phenomena, the management of turnover and absenteeism can essentially be undertaken without concern that a change in the level of either one necessarily influences the level of the other.

9. Bargaining Unit Structure and Organizational Outcomes

Although selective results were supportive of generalizations found in the literature, the overall results simply did not confirm many of the prevailing beliefs about relationships between bargaining structure and organizational outcomes. Several bargaining structure-outcome relationships were found to be significant. Specifically, union member attitudes about their union and about their influence within the union tend to be more positive as unit size decreases and unit scope narrows. Strike frequency is a positive function of bargaining unit fragmentation at the transit property.

The results of our analysis indicated that even within a particular governmental function such as public transit, which is characterized by significant variations among bargaining units, structural variations are only weakly associated with organizational outcomes. One explanation for the difference between these results and the generalizations in the literature which predict strong associations, is that the individual and organizational consequences of poorly designed bargaining units might be transitory. Bargaining unit structure may have temporary or passing effects on organizational and individual outcomes, but the parties might adjust, over time, to these limitations of the unit structure. For example, consider the situation in which a small group of employees is organized within a large unit, along with employees who do not generally share their interests. Although the unit structure may not be an initially satisfactory quid pro quo for the minority group, their interests might well become satisfied by

special arrangements within the union, as the bargaining relationship evolves.

An alternative reason for the lack of significant structure-outcome associations is that our sample might have contained both "appropriate units" and "units of convenience". Some of the bargaining units in our sample were no doubt certified primarily on the basis of existing organizational arrangements, and not as a result of thorough consideration of their appropriateness. This might have introduced some confounding variance into the structure-outcome relationships. However, this distinction between appropriate and convenient units also points to another shortcoming in our understanding of structure-outcome linkages. If the parties agree upon a unit or set of units, regardless of the design flaws in the abstract, should their agreement be administratively overridden? Is participant acceptance an important contingency that is likely to affect structure-performance relationships? Although existing theory and empirical research provide no answers for these questions, it seems intuitively resasonable that acceptance of a unit's structure by the parties involved would be an important contingency.

10. Transit Performance Indicators

Performance or effectiveness is a multidimensional concept. No single summary measure can serve as "the" criterion of transit organization performance. The four criteria (service efficiency, service effectiveness, employee withdrawal, and adaptability) selected for this study, however, appear to be valid measures of variations in the labor-management situation

Data collected for the study included (but were not limited to) operational statistics, budgetary data, scheduling data, employee pay data and attendance records, and demographic data. Although dozens of separate data elements were collected, most were of the type necessary for normal management information or for reporting to state and federal agencies. Thus, we expected that the information would be readily available and highly standardized. As it turned out, this was not the case. Data elements often had different meanings in different organizations. The most surprising discovery was the extent to which information that would presumably be needed for on-going management was not readily available (e.g., absenteeism rates, which would appear to be necessary for establishing staffing levels).

IMPLICATIONS OF THE RESEARCH

This section addresses the practical implications of our research. Aspects of the labor-management situation in public transit do have an impact on performance. Although this study had been initiated with that premise, the existing literature provided little empirical support. The chances for improving public transit performance can also be viewed optimistically in light of the findings that indicate that the determinants or constraints that affect organizational effectiveness are largely within the control of labor-management representatives. Distal constraints, over which local labor and management representatives have little control, appear to be much less important in the performance calculus than we had believed. Not only do legal policies appear to be the least significant constraint, but the collective agreement, the most malleable aspect of the labor-management situation, appears to be the most important aspect. Also noteworthy is the fact that this research was unable to uncover constraints on transit efficiency and effectiveness that are not tractable. Thus, although improvements of public transit performance through the labor-management process might not be easy, they do not appear to be inherently impossible.

1. Labor-Management Relations and Transit Performance

The primary theme of this research has been to develop a better understanding of the impact of labor-management relations on public transit performance. Similar themes have been common in the literature on private-sector labor relations. Since the passage of the National Labor Relations Act in 1935, the impact of labor-management relations on the performance and survival of industrial organizations has been a frequent concern of scholars and practitioners alike. Here, we have addressed this theme from a new perspective and within a new institutional setting.

In several instances, our findings about public transit labor relations deviate from standard generalizations about labor-management relations. One of these areas appears to be the impact of labor-management relationship patterns on organizational effectiveness. Although cooperation between labor and management is the generally accepted norm, our results indicate that other relationship patterns might be more desirable for public transit organizations. In effect, our results suggest that the parties might lose sight of their primary responsibilities to the separate interests of their constituents if they interact within a strictly cooperative relationship

pattern. Thus, rather than accepting uncritically that cooperation is the most desirable pattern for labor-management interaction, both labor and management officials in public transportation must consider the possibility that other patterns will be optimal in a particular setting. The tendency for the optimal relationship pattern to vary according to the performance dimension in question also suggests that it may be necesssary to discriminate among relationship patterns that might be appropriate for different organizational decisions and different organizational issues. For example, with regard to organizational requirements for improved employee performance and improved employee role compliance, cooperative modes of interaction might be the most fruitful. However, for decisions involving the membership requirements of organizational participants, less than a cooperative pattern might be optimal. Since the parties tend to define one another according to a single, consistent set of beliefs, varying the relationship pattern according to particular decision issues might risk some degeneration of the relationship pattern. However, this might be a risk worth taking in order to improve the contribution of labor-management relations to organizational effectiveness.[4]

Among the most important of the implications of this research, having immediate practical utility, is that policies that reduce the incidence of strikes in public transit must be developed and implemented. Our findings concerning strikes and public transit performance, in conjuction with those of other studies, paint an unambiguous picture of the consequences

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[4]Whether or not the parties to the labor-management interface can sustain a segmented approach to the relationship pattern is largely an empirical question. The field of international politics appears to offer some suggestive precedent on both sides of this issue. The Soviet Union and the United States have been able to sustain a collaborative cultural exchange program, during periods when the relationship was essentially one of confrontation in the military arena. More recently, however, the Soviets have positoned a ground combat unit in Cuba, during a time when ratification of the Strategic Arms limitation Treaty (SALT II) was under consideration by the U.S. While initial reaction in this country made it appear possible that the two issues could be kept separate, at this writing it seems that opponents of Salt II will attempt to join the two issues.

of public transit strikes. These consequences are both immediate and pervasive. Among the immediate consequences are the considerations of commuter inconvenience, decreased mobility for the transit dependent, and lowered commercial sales (due to the disincentives for shoppers as represented by increased traffic congestion and lack of convenient transit to travel to and from retail areas). There are also a number of highly significant but less visible consequences. For example, historical ridership trends demonstrate that a significant percentage of transit patrons will use alternative means of transportation during a strike and will return either slowly to transit services after a strike or never at all.

One of the primary reasons why the strike has not been displaced by other dispute resolution mechanisms has been the parties' distrust of the impacts of other methods on their autonomy and ability to manage their respective organizations. Our findings indicate that the availability of alternatives such as mediation, fact finding, and arbitration has little influence on the effectiveness of public transit agencies. This should help to dispel some of the hesitancy of transit management and labor to employ these dispute resolution mechanisms. Prior to the fifties, the transit industry had had a long history of reliance on third-party intervention in interest disputes. Yet, beginning in the fifties, arbitration began to fall into disuse. Transit management perceived that the national unions with which they were dealing were able to assimilate tremendous resources from union locals all over the country to apply toward research and development of collective bargaining strategies and positions. This marshalling of national resources resulted consistently in strong union positions being submitted at arbitration. As a result, management perceived the unions as having achieved significantly higher settlements than would have been possible had settlements been reached through bilateral processes. Thus, management gradually came to feel that they might do better to risk the dislocations of a strike than to continue to rely on binding arbitration. Our findings cast doubt upon this conclusion. In fact, it appears that management might do better by seeking workable alternatives to the strike.

2. Bargaining Unit Consolidation

Many of the conventional beliefs about the impact of bargaining unit structure on organizational outcomes were simply not supported by the research. It appears that, in the absence of a strong empirical basis, too

deterministic a perspective of the impacts of bargaining unit structure may have become prevalent. In fact, a number of heretofore neglected variables may intervene between unit structure and organizational/individual outcomes. These variables include, but are not necessarily limited to, the size of the organization and (in the public sector) the type of government involved.

This is not to say that all of the conventional beliefs about bargaining unit structure were disconfirmed. There is some support in our data for the traditional union arguments advocating small bargaining units. Member attitudes are clearly more favorable toward the union in such cases. Also, the strong association between unit fragmentation and strike activity does provide support for management's traditional preference for consolidation of units.

On balance, however, it appears that both parties are apt to adapt to existing bargaining unit structure, whether or not such structure is "ideal" from the point of view of either party. Acceptance might turn out to be the most critical dimension of bargaining unit design. In light of the relative size limitation in the present study, however, we advocate reserving final judgement on this point pending additional research.

3. Improving Grievance Handling and Union Leader Training

We noted the elusiveness of hard statistics about grievance rates in the organizations we visited. It appeared that the wide disparity in the number of grievances recorded, vis à vis the number expected based on employee survey responses, may have been the result of a "short circuiting" process. In some instances, labor and management officials seemed to pride themselves on their ability to handle and settle grievances informally. Such practices have several dysfunctional implications for organizational health. In the first place, circumventing the established grievance-resolution chain can exclude lower levels of management from becoming involved in the solution of problems that they may well have helped create. Secondly, lower-level employees are cut off from one of the few established channels of upward communication. Thirdly, in treating grievances informally, top labor and management officials might arrive at solutions which suit their interests but are at odds with the interests of the employee initiating the grievance. Finally, since the grievance process is also useful for clarifying uncertainties in the collective agreement or other areas of organizational procedure, perhaps the most serious potential abuse of the process occurs

where labor and management officials allow grievances at the arbitration to "hang fire" rather than risk the establishment of a precedent detrimental to either side. In such a situation, the grievance process neither clarifies uncertainty nor serves as an acceptable communication channel,

While the formal grievance system may not provide the path of least resistance in settling disputes, it is incumbent on both labor and management to take the necessary measures needed to "make the system work". It appears that one key in the effectiveness of grievance administration is the competency of lower-level officials of labor and management. In the long term, it would appear to be in the best interests of both labor and management to ensure that newly-elected shop stewards and newly-appointed supervisors receive adequate indoctrination in the responsibilities of their office, with administration of the grievance system occupying a key spot in the syllabus. In light of our finding that low levels of negotiating expertise among local union officals might indirectly impede labor-management cooperation, national unions might wish to provide an even broader range of training opportunities for local officials.

4. Strengthening Norms of Efficiency and Effectiveness Within Public Transit Organizations

During the data-collection phase of the research, we encountered unexpected difficulty in gathering the archival data we had incorporated in our collection plan. This is not to say that the problem existed at all sites visited. On the contrary, several of the better-managed transit properties had established and were using thorough and timely management information systems (MIS). Unfortunately, there were many other properties in which little apparent attention was directed toward the acquisition and monitoring of management information.

Based on our subjective impressions of (among other considerations) differences across organizations in the implementation of MIS, we had arrived at a very subjective effectiveness-category scheme, into which we "slotted" the transit properties we had visited. Subsequent objective analysis, based on our predetermined performance dimensions, substantially supported those first impressions.

Perhaps the widespread lack of concern for MIS has even more serious implications for transit mangement than are immediately apparent. The prevalence of the phenomenon may suggest something about the norms regarding efficiency and effectiveness in the public transit industry. We believe, based on our experiences while collecting data, that what information is not on hand in an organization discloses something of management's attitude toward certain aspects of the situation. For example, we found wide variation among organizations with respect to the recording of passenger complaints (or compliments). Interviews with some of the managers verified our suspicion that the extent to which such data were carefully recorded coincided closely with the general manager's belief as to whether feedback from the serviced public was an important matter for management's attention.

The public sector has long been stereotyped as lacking in the bottom-line orientation that characterizes the private, or profit-making, sector.[5] Whether or not this is a fair appraisal, it is clear that public mass transit organizations have not been expected to sustain their operations solely on earned revenue. To the extent that subsidies from local, state and federal funding agencies have provided transit management with "organizational slack,"[6] any shortfall in operating efficiency is effectively buffered. It may be that recent practices have provided insufficient incentive for the development of strong efficiency norms. It appears, however, that the public mood toward taxation and government expenditures has taken a decidedly conservative swing, in light of recent and pending legislation. This should cause a general reappraisal of operating efficiency as a major concern in the public sector.

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[5]The sterotypical differences in "goal crispness" were the emphasis of a comparative study of public and private managers. Bruce Buchanan II. "To Walk an Extra Mile: The Whats, Whens and Whys of Organizational Commitment," Organizational Dynamics, 3 (Spring, 1975), 67-80.

[6]This term is attributed to Richard M. Cyert and James G. March. A Behavioral Theory of the Firm (Englewood Cliffs, NJ: Prentice-Hall, 1963).

The recent operating environment of public transit organizations may have contributed to relatively weak effectiveness norms, as well. In the recent era of relative affluence and plentiful fossil fuels, bus ridership was comprised for the most part of a politically "silent" segment of society. Recent fuel shortages (which show every sign of permanence) and a double-digit rate of inflation (to which the rising cost of private automobiles is one of the major contributors) promise an upward shift in the socioeconomic composition of bus ridership. This, in turn, carries strong implications both for the nature of effectiveness norms and for the potential sanctions associated with violation of these norms.

Achieving efficiency and effectiveness would seem to demand management's intensive attention both to internal management information, and to external "organizational intelligence." What can public transit management do to improve the quantity and quality of information? One suggestion might be to better utilize existing sources of organizational intelligence such as the transit operators. These workers function at the boundary between the transit organization and the riding public and as such are exposed to large amounts of potentially relevant information. However, many drivers expressed to us their belief that no one in top management listens to their concerns. Even in cases where formal suggestion systems were established there appeared to be a widespread belief that they were not operative.

A second source of organizational intelligence for public transit organizations might be the formal survey. In our visits to 28 transit organizations, we encountered only a few cases where such surveys had been put to use. For the most part, surveys were limited to samples of current users of the public transit system. While this is obviously easier than broader surveys of potential system users, it falls far short of acquiring the most valid information for determing the steps needed to enhance service effectiveness.

5. Improving Supervisory Practices

In a few organizations, it was alleged that the road supervisors saw their principal role as that of a disciplinarian. At those properties, drivers frequently commented that they believed the road supervisors should

be someone the driver might be able to turn to for help, rather than someone to be avoided. We also encountered a number of instances in which operator access to supervisory personnel inside the operations center was tightly controlled by the use of soundproof barricades and one-way electronic public address systems.

Our subjective impressions of the sometimes adversary relationship of operators and supervisors, gathered during our site visits, were reinforced by the results of the job satisfaction questionnaire. Dissatisfaction with the quality of supervision, the way company policies are put into practice, and recognition for doing good work were the basic reasons that the overall job-satisfaction level of transit operators was so low.[7]

Transit management should take steps to dispel the "policeman image" of the road supervisor. These steps might include removal of some of the trappings some organizations append to road supervisors (i.e. badges; police-like automobiles), and socialization of supervisors into a helping role, rather than that of a stern disciplinarian. Under current practices, the supervisor's potential as a key link in upward communication is not being realized.

Other possibilities might include rotation of road supervisor duties among some of the more experienced operators, and occasional orientation shifts in which junior operators are assigned to accompany a road supervisor on duty. (As with many other recommendations contained in this report, we recognize the necessity for union concurrence.)

Emerging electronic technology promises to make feasible new, unobtrusive means of monitoring adherence to route schedules. Such an electronic monitoring system might allow supervisory personnel to adopt a more proactive

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[7] The working paper by Harold L. Angle and James L. Perry, Organizational Commitment: Extension of a Concept to Urban Mass Transit, Working Paper DOT-RC-82002,2 (U.S. Department of Transportation, Washington D.C., December, 1978), compared the job satisfaction of the participating transit employees with that of six other occupational groups. Transit employees' satisfaction was lower than that of five of the occupations. This paper is reproduced as Appendix B of this report.

and positive role. If adopted with the support and concurrence of labor, electronic monitors tied to a voice radio network would not only depersonalize the necessary control system, while improving its effectiveness, but would enjoy an important side benefit by enabling rapid response by police and other emergency agencies, in case of trouble.[8]

6. The Transit Operator at the Boundary of the Organization

The job of driving a bus provides an interesting paradox. At one and the same time, this is one of the most controlled and one of the most autonomous of blue-collar occupations. On the one hand, drivers must adhere rigorously to minute-by-minute timetables keyed to a fixed route that must be followed exactly. Deviance from these schedules has a high probability of discovery. If lapses are not caught by road supervisors, passengers who missed their connections are apt to complain.

On the other hand, within the constraints of time and route, the operator of a bus is the ruler of a minor kingdom. Whether intended by the organization or not, a great deal of the driver's behavior, with respect to passenger relations, is discretionary. A few rides on the buses of most transit properties will disclose a wide range of behavior regarding both rule enforcement and general relationships with passengers.

For these passengers, the driver is the transit organization. The network of transit operators that the organization puts out on the street constitutes the organization's public face. Ultimately, public attitudes toward the organization, and public support of the transit operation, may come to depend in large part on how well these operators represent the organization to the public.

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[8] During the site visits operator concern over safety and driver protection became readily apparent. There seemed to be wide consensus that transit systems should have reliable and rapid bus alarm systems.

As a closely related issue, our research disclosed a general concern expressed by drivers in many organizations that they take the brunt of the public's dissatisfaction with company policies, but they have no real voice in formulation or revision of those policies. Therefore, they are in a position of implementing and enforcing policies with which they disagree (or perhaps do not understand).

Here, then, we have two sides of the same problem. The transit literature emphasizes the importance of driver attitudes on customer satisfaction. Our own research indicates that organizational commitment, on the part of transit operators can explain a substantial amount of variance in some of the measures of efficiency and effectiveness of their organization. Our research also shows that the extent to which operators are committed to the organization is strongly related to the level of their satisfaction with the job. Both our subjective impressions from informal interviews with drivers and the more systematic job satisfaction survey indicate that drivers enjoy their relative independence on the job, but are not satisfied either with company policies and practices or the amount of recognition they receive. Several drivers to whom we talked indicated that their first-hand knowledge was largely a wasted organizational resource.

We began to appreciate how different the job of transit operator is, relative to many other occupations, when several drivers told us how their (non-transit) unions were sometimes slow to appreciate the unique concerns of transit operators. We believe it is incumbent upon transit management to recognize, also, that the specific job-related concerns of transit operators may hold one of the keys, for better or for worse, to the organization's basic effectiveness posture.

7. Using Employee Attitude Surveys as Diagnostic Devices: Focus for Joint Labor-Management Improvements

The foregoing sections highlighted some specific areas of employee dissatisfaction that had initially been hinted at during our site visits, and were later verified in the analysis of our survey data. It appears likely that management and labor might have been too close to the situation

to pick up some of the subjective impressions that we, as outsiders, got during the site visits. On the other hand, would it be possible for labor and management to conduct their own systematic attitude surveys, in order to "take the pulse" of the work force? It appears that the answer depends on some important contingencies.[9]

Attitude surveys can provide a ready means for employees to communicate their concerns to organizational leaders, but they are inherently impersonal devices. If they are used as a substitute for "warmer" means of communication, they may create a backlash. Such surveys are, of necessity, tightly structured. The ordinarily constrain responses to include only answers to the questions asked. This, in itself, can be an irritant if employees are frustrated by being asked only questions that appear to skirt the "real" issues.

Secondly, attitude surveys can prime employees to expect corrective actions to their expressed problems. If they see no such action, their morale may be seriously degraded. This is most likely to happen in an organization that takes repeated surveys, but neither provides feedback nor takes any apparent action. In short, attitude surveys should not be undertaken without a solid commitment to follow through, and surveys should be infrequent.

Thirdly, item-writing for attitude surveys is not a suitable project for the inexperienced. For an organization that intends to conduct a survey without the services of a qualified consultant (and by no means are all consultants qualified), the safest course of action is to use a standardized instrument that has already been subjected to reliability and validity analysis. The use of such standard instruments usually has the concomitant advantage of permitting comparison of one's own employees' responses with other employee groups.

Finally, surveys are self-report devices and depend, for accuracy, on the self-insight and candor of the respondent. An employee's motivation to

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[9]For some basic guidelines on the conduct of employee attitude surveys see Karlene H. Roberts and Frederick Savage, "Twenty Questions: Utilizing Job Satisfaction Measures," California Management Review, 15 (Spring, 1973), 82-90.

respond accurately and candidly may be influenced, in part, by her/his perception of who is sponsoring the survey, and for what reason. Even an anonymous survey conducted through the chain of command may activate employee defenses. It would not take a paranoid to be able to imagine that management might be able to piece together an idea of who in the organization filled out certain questionnaires. The possibility of management reprisals might incite some employees to soften responses, or even dissemble factual information.

One possible solution to the above dilemma might be a collaborative union-management survey effort, with the union taking primary responsibility for the survey. The administration of a survey under union auspices might circumvent some of the aforementioned difficulties, particularly with respect to threats to candor. The union should have some very good reasons for collaborating with management in an attitude survey. In the first place, the union gains visibility, in the eyes of the membership, as taking the lead in identifying problem areas in order to better represent membership concerns to management.

Secondly, there is reason to believe that, in the long run, satisfaction with the union tends to be related to satisfaction with the job. In our own data, correlation between job satisfaction and satisfaction with the union was about .55. The dual-loyalty literature tends to substantiate the view that the average worker tends to like both the company and the union, or he/she is dissatisfied and dislikes both. The reasons behind such congruence are obvious. If the union is the employee's agent for the redress of grievances or dissatisfactions, and if dissatisfaction persists, then the union may come to share the blame.

8. Reducing the Costs of, and Increasing the Benefits from, Turnover

Our research included an analysis of the potential cost savings incidental to various levels of personnel turnover in a transit organization. Several important contingent factors were included in the analysis, including the actual wage schedules, the time required for an employee to reach the top of the wage scale, and the extent to which employees' accrued retirement benefits can be transferred elsewhere.

The conclusions of our analysis run counter to the conventional wisdom, i.e. that turnover, per se, is costly and organizationally dysfunctional Hence, the preponderance of our presentation was devoted, not to the dysfunctional aspects of turnover with which most people are familiar, but to some of the cost-beneficial aspects. We do not, however, mean to argue that if a little bit of turnover is good, a lot is necessarily better. We do hold that some turnover is necessary to the health of any organization. Without occasional loss of personnel and their replacement, there is no organizational renewal. Without some turnover, there can be promotion only while the organization is growing larger.

Even the minimal turnover required for organizational renewal must be positively selective, in order to be organizationally benefical. That is, the members leaving must be preponderantly the less desirable or less organizationally-productive members. The members staying must be, if not the best performers, at least minimally adequate performers. Thus any organizational turnover analysis that is strictly quantitative, without qualitative consideration, would be shortsighted.

Beyond the foregoing analysis, which has general applicability to any organization, there are some specific situational factors that will influence the optimal turnover level for a given organization. One such consideration is the local labor market. Recruiting and hiring costs cannot be expected to be a linear function of the number of vacancies to be filled, over all parts of the range. Beyond some critical point, labor-pool limitations can be expected to inflict high marginal costs on additional hires.

There are also intangible costs associated with turnover -- costs which we are able to treat only superficially. Beyond a critical point, personnel turbulence undermines the network of informal working relationships, necessitating an increase in formalization and standardization. None but the most routine technologies, operating in the most placid environments, can effectively specify role prescriptions that will meet all contingencies.

There may be some intangible cost factors that are specific to the transit industry. One such candidate may be the relationship between experience and traffic safety. Though we have no actuarial data in support, it

seems reasonable that transit operators become safer drivers after some breaking-in period.

In summary, our point has not been that turnover is always either bad or good for the organization. Our point is that some turnover is potentially good for any organization, and many organizations can tolerate (or benefit from) a great deal more turnover than the conventional wisdom would suggest.

We advocate that transit management adopt a utility-analysis perspective on the issue of optimizing turnover levels.[10] While we acknowlege that such an approach often involves attaching dollar values to some rather abstract costs and benefits, we believe that it is the only approach suited to determining acceptable and optimal turnover levels in any given transit organization.

9. Reducing Absenteeism

In this research, we have viewed absenteeism as something fundamentally different from turnover. There is ample evidence, including the empirical results of the present research, that absenteeism and turnover have different antecedents and different consequences for the organization. In the preceding section we have argued that turnover is not necessarily dysfunctional for the organization; indeed, that a given transit organization will have some optimal level of turnover. We make no such argument for absenteeism.

We do not subscribe to the view, expressed by some experts, that a moderate amount of absenteeism is a safety valve for the workforce, providing temporary relief from work when the only alternative might be to quit the job. Absenteeism is an expense, and a costly one for public transit. For instance, we found absence rates to correlate .67 with operating expense per employee.

Certain technologies are particularly vulnerable to absenteeism. In general, assembly-line operations are hard hit by absenteeism, because

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[10] The utility-analysis perspective involves the (sometimes subjective) determination of expected institutional gain or loss anticipated to result from each of the potential outcomes to some contemplated action. By forcing the manager to convert all outcomes into dollar terms, this approach systematizes the decision process, and allows a clear comparison of alternatives. See Wayne F. Cascio, Applied Psychology in Personnel Management (Reston, VA: Reston Publishing Co., 1970).

failure to man one position on the line can disable the entire operation. Fixed-route transit systems provide another example of vulnerability. The buses must run, they all must run, and they all must meet a rigid timetable.

Most of the larger transit organizations employ an extra-board to buffer the organization against the uncertainty of absenteeism. While it may be necessary to provide some "slack" for the organization in this manner, we believe it to be a particularly costly coping mechanism. We do not believe it should be the only such mechanism.

In some of the larger organizations we visited, it appeared that the size of the extra board was considered to be simply one of the facts of life; in effect, a fixed cost. We do not agree. In an era of shrinking budgets, reductions in absenteeism, along with concomitant reductions in the size of extra boards, appears to be a necessity.

How then should a transit organization cope with the absenteeism problem? Our research clearly indicates that some of the traditional remedies will probably not work. The common-sense belief about absenteeism seems to be that workers absent themselves from their jobs because they are not happy at work (or would be happier somewhere else). Our research showed that job satisfaction and absenteeism were virtually unrelated.

The best strategy for control of absenteeism, then, is probably not one of improving the quality of working life. There is an alternative approach, however, which we believe can help stem the high absenteeism rates that our research found. That strategy is simply: Stop rewarding excess absenteeism!

We have interpreted our findings to indicate that absenteeism is often treated, de facto, as a fringe benefit--a benefit that must be used or will be lost. We found absence rates to be a direct function, for example, of the number of sick days allowed.

While we recognize that sick/leave provisions are a matter for collective bargaining, and not subject to management's unilateral action, we nonetheless hold that specific work-rule provisions that encourage absenteeism exist in several transit organizations, and that it is incumbent on management to review those provisions and to begin to take steps to bring

absenteeism under control.

This suggestion will require that public transit management become more proactive in its approach to negotiations. Our site visits indicated that management in public transit often takes an essentially passive approach to preparation for negotiations. For example, when we asked managers whether their organization presented any initial demands to the union during the most recent negotiations, there was a considerable polarity of opinion regarding the use of this procedure. A few managers believed management should always make preemptive demands at the outset, but others stated that management should never pursue this practice since it tends to begin negotiations with a conflictual tone. Our results indicate that transit managements must risk some conflict at the outset of negotiations in order to achieve some positive results through the negotiating process.

10. Adjustments to other Organizational Policies

In our analyses of absenteeism and turnover, we took the position that organizational policies sometimes have unanticipated consequences. In the case of absenteeism, excesses were probably being encountered by some transit organizations, because policy has provided, inadvertently, for the reward of such excesses.

Regarding turnover, each organization probably has some optimal level, depending on several factors. One of the most influential of those factors is the organization's policy regarding the rate of progress to maximum wage. If replacements reach maximum pay rate in a very short time, then many of the potential financial benefits of (moderate) turnover are largely nullified.

There are probably other unanticipated consequences of an early wage ceiling. If full advancement is reached within the first six months or so, the organization has no basis on which to use step promotions as incentives for high performance or faithful attendance. In addition, employees who have no wage raises to look forward to may grow sour early in their careers.

In such cases, the only advancement opportunity may be promotion into the supervisory ranks. How this can be accomplished, however, may not be clearly spelled out by the organization. Here again, there exists an area where organizational policy may need to be made explicit.

Some consideration should also be given to the relaxation of minimum guarantees and other contract provisions that restrict the work week to five consecutive days. The effects of such changes would be to create more flexibility in the assignment of employees and, in the long-run, to reduce staffing levels. Such changes are similar to current proposals calling for the use of part-time employees. Very modest changes in hours provisions for all employees would have an effect on savings in operating expenses similar to that realized by the utilization of part-time employees.

CONCLUSION

Although this study has run its course, labor-management relations will continue no doubt to be of great practical import for the efficiency and effectiveness of public mass transit. By fulfilling our original objectives, we have provided a basis for the development of more constructive labor-management relations in public transit. We began this study, which used a rigorous research design and data collection plan, intent upon developing valid generalizations about labor-management relations in public transit. During the research, we have defined and validated a variety of useful measures of productivity, efficiency, and effectiveness. They study has also identified and, in some instances, clarified the relationship of several aspects of the labor-management situation to the performance of transit properties. As our discussion in the previous section indicated, these results have been useful for generating ideas for controlling the costs of public mass transit and improving its effectiveness. Furthermore, we have demonstrated how these ends might be achieved without diminishing, but possibly increasing, the benefits of the labor-management relationship for any of its participants--the public, management, and labor.

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APPENDIX A

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APPENDIX B

ORGANIZATIONAL COMMITMENT: EXTENSION OF A CONCEPT TO URBAN MASS TRANSIT

Harold L. Angle
James L. Perry

At the organizational level, a set of transit performance indicators was available, as part of a large study, for the 24 transit organizations. Employee levels of commitment and job satisfaction in each organization were related to nine organizational performance indicators covering three broad areas of organizational effectiveness: service efficiency, organizational adaptability, and employee participation (turnover, absenteeism and tardiness).

RESULTS

Summarized below are conclusions drawn from the research. They are organized around the four broad research questions.

Organizational Commitment of Lower Level Employees of Public Transit Organizations

1. Transit employees can and do become committed to their transit organizations. Levels of commitment are generally comparable to those found in other industries. However, transit employees are generally less satisfied with their jobs than are employees in comparative occupations. Furthermore, there is an overall trend for job satisfaction levels to be lower for transit operators than for other non-supervisory transit employees. For operators and non-operators alike, company policies and practices stood out as the source of greatest dissatisfaction. Job factors that appeared generally as strong sources of transit employee satisfaction included independence, variety, security, social service, ability utilization, co-workers, and achievement.

2. Female transit employees reported higher levels of job satisfaction and substantially higher levels of organizational commitment than their male counterparts. These findings are at odds with virtually all published research on sex differences in work-related attitudes. It appears likely that the specific nature of transit work, as well as rapidly changing social norms for women, may be responsible for these results.

3. Although commitment and job satisfaction have common roots and are conceptually similar, they are not redundant concepts. Organizational commitment has utility, beyond that of job satisfaction, for the purpose of predicting and understanding transit employee behavior.

The Factor Structure of Organizational Commitment

1. Factor analysis revealed two interpretable factors: value commitment, which appeared related to the employee's identification with and positive regard for the transit organization; and membership commitment, which is the employee's instrumental concern with retaining membership in the transit organization.

2. While value commitment and membership commitment are conceptually and empirically differentiable, there is some overlap. It is suggested that value commitment will lead to membership commitment, but not necessarily the converse.

The Antecedents of Commitment

1. Both job satisfaction and structural variables (i.e., personal and situational factors related to investments in continued organizational membership) are associated with the employee's level of organizational commitment. However, structural variables show weaker relationships to commitment and, in combined analysis, account for little commitment variance, beyond that accounted for by job satisfaction.

2. Extrinsic job satisfaction relates more directly than intrinsic satisfaction to organizational commitment. In particular, satisfaction with organizational policies and rewards, and with the quality of supervision were found to be important..

The Consequences of Commitment for Transit Organizations

1. At the transit organization level, six of the nine transit performance indicators were found to be related to employees' value commitment, and three indicators to membership commitment. Value commitment was positively associated with adaptability and negatively associated with intent to quit, separation rate, tardiness, operating expense per revenue vehicle hour, and operating expense per employee. Membership commitment was positively related to adaptability and negatively related to intent to quit and separation rate.

2. Indicators of operating efficiency and adaptability were more highly correlated with value commitment, and indicators related to employee

turnover were more highly correlated with membership commitment. The direction of the difference was consistent for all but one performance indicator, and was statistically significant ($p < .10$, or better) for five of the nine indicators.

CONCLUSION

This study was undertaken to ascertain the usefulness of the concept of organizational commitment as it pertains to lower-level employees in the public mass transit industry. It concluded that employee commitment does indeed exist among transit operators as well as other public transit employees, and that such commitment makes a difference in the organization.

Evidence was presented that transit employees' organizational commitment co-varies with several factors that are well within the capability of the transit organization's management to influence, such as organizational policies and practices, the quality of transit supervision, and a number of extrinsic rewards. Thus, it appears that an organization whose employees are committed is a more effective organization.

It is appropriate, however, to express the caveat that traditionally appears in cross-sectional studies such as this. The direction of causality is not firmly established by the data. For instance, we know that more effective organizations have more committed employees. What we don't know is whether employee commitment leads to higher effectiveness, employees become committed to organizations that they see as effective, or even whether some exogenous factor or factors is/are influencing both commitment and transit organization effectiveness. Equivalent concern could be expressed regarding the relationships between satisfaction and commitment.

Of course, a logical case is made that organizational effectiveness is a result, rather than an antecedent of commitment, and that commitment is a result, rather than a precursor of job satisfaction. Based on our data and what appears to be sound theory, we see no reason to believe otherwise. Final verification of our belief, however, must await further research of experimental and/or longitudinal design, suited to test the causality of the relationships which study has uncovered.

INTRODUCTION

The attempt to establish reliable and meaningful linkages between employee attitudes and on-the-job behavior has been a long-term quest of behavioral scientists. This quest has been fraught with frustration, however, and efforts to find such linkages have often gone unrewarded. While early research in organizations tended to concentrate on job satisfaction as an attitudinal state which was proposed to relate systematically to relevant job behaviors (i.e. productivity, attendance and continuation of organizational membership), more recent emphasis has centered on a global, psychological attachment to the organization, usually called organizational commitment. This concept had engendered several recent research efforts, aimed primarily at the managerial/professional level of organizations. Much less has been accomplished, however, at lower organizational levels. The present research extends the concept of organizational commitment to a previously unexamined domain--hourly workers in urban mass transit organizations.

ATTITUDES AND BEHAVIOR I: JOB SATISFACTION

Early efforts to relate worker attitudes to work behavior focused on the concept of job satisfaction. The intuitive notion that a satisfied worker should also be a productive worker can be traced back at least as far as the famous Hawthorne studies, conducted by Elton Mayo and his associates in the late 1920's and early 1930's (Roethlisberger and Dickson, 1939). Whether the Hawthorne studies were actually responsible, or they occurred at the right moment in history, they appeared concurrently with a dramatic shift of managerial mood; from an emphasis on worker motivation by manipulation of wage incentives and environmental conditions, to a new approach centered on human relations.

Despite the fact that the Hawthorne researchers probably never stated unequivocally that satisfaction leads directly to performance, the following quote is typical of mid-century managerial thought: "... management has

at long last discovered that there is profit when workers are satisfied with their jobs. Improve the morale of a company and you improve production" (Parker & Kleemeir, 1951, p. 10).

On the other hand, a growing body of research was demonstrating that there was little empirical support behind the wave of a priori optimism regarding improvement of workers' performance through morale enhancement. Brayfield and Crockett (1955), in a capstone review of more than 50 carefully screened studies, questioned the assumptions that: satisfied workers will demonstrate their gratitude by increased output; increased satisfaction frees creative energies in the worker; and satisfied employees internalize management's goals. Although satisfaction and performance were often seen to co-vary, there was little reason, based on available evidence to assume any simple causal link. Herzberg, Mausner, Peterson & Capwell (1957) reviewed 26 studies that measured the purported effects of job attitudes on productivity, and reported that high morale was associated with high productivity in only 54 percent of the studies. In another 35 percent, no relationship was found, while in 11 percent an <u>inverse</u> relationship was reported. Furthermore, many of the correlations in the "positive" studies were low.

Vroom (1964) reviewed 20 studies which showed a median correlation of .14 between satisfaction and performance, both for individual, and group-levels of analysis. The range of correlations, however, was from -.31 to .86, indicating once again some inconsistency in results.

Worker performance is a complex concept. It is high probably that the disparity among findings in the previously cited research has been due, at least in part, to inter-study differences in the way that worker performance was conceptualized, operationalized and measured. If the linkages sought are those between employee attitudes and <u>behavior</u>, then it should be apparent that there are employee behaviors, apart from those leading directly to quality or quantity of output, that are relevant from the standpoint of the employing organization.

March and Simon (1958) provided perhaps the broadest categorization of relevant behaviors of organizational members, by partitioning worker motivation into the motivation to <u>produce</u> and the motivation to <u>participate</u>. Participation concerns a member's joining an organization and his/her

maintenance of organizational membership, over time. This has little direct bearing on production--channeling of the worker's energies toward organizational ends.

Vroom (1964) reported that, while the relationship between satisfaction and participation was by no means perfect, research findings were more consistent than for studies attempting to related satisfaction to productivity. Vroom's review indicated a consistent negative relationship between job satisfaction and voluntary turnover, along with a somewhat less consistent negative relationship between job satisfaction and absences (relationships were most clear when only unexcused absences were counted and when frequency of absence, rather than total days absent, was the measure used). These observations were consistent with those of Herzberg, et al. (1957), who summarized then-current research by concluding that positive job attitudes seemed more reliably related to the worker's tendency to stay with the job than to productivity.

Even so, the empirically demonstrated relationship between job satisfaction and such aspects of worker participation as voluntary turnover has been, while consistent, only moderate. Several factors probably combine to attenuate the relationship between satisfaction and turnover. In the first place, job satisfaction is a complex phenomenon, consisting of several dimensions. In its very simplest partitioning, the intrinsic-extrinsic dichotomy, satisfaction is anchored to two broad classes of rewards--those which are self-administered (intrinsic) as opposed to those that are administered by others or by an impersonal "system" (extrinsic) (cf. Dyer & Parker, 1975; Herzberg, Mausner & Snyderman, 1959). Several more complex taxonomies have been proposed including as few as five factors, as in the Job Description Index (Smith, Kendall & Hulin, 1969) or as many as 20 in the highly popular Minnesota Satisfaction Questionnaire (Lofquist & Dawis, 1969). Regardless of the specific set of facets, it has been found consistently that the strength of relationship between satisfaction and turnover varies widely from job aspect to job aspect (Atchison & Lefferts, 1972; Farris, 1971; Hulin, 1966, 1968; Kraut, 1975; Ronan, 1967; Smith & Kerr, 1953; Waters, Roach & Waters, 1976; Weitz and Nuckols, 1975). In addition, worker reaction to various job aspects tends to differ for separate segments of the working population. Personal characteristics such as higher-order need strength (Brief & Aldag, 1975; Hackman & Lawler, 1971;

Hackman & Oldham, 1976; Stone, Mowday & Porter, 1977; Wanous, 1974), belief in the Protestant ethic (Blood, 1969), and regional/familial/subcultural differences related to primary socialization (Arvey & Mussio, 1974; Goodale, 1973; Hulin & Blood, 1968; O'Reilly & Roberts, 1973; Paine, Deutsch & Smith, 1967), have all been found to influence the extent to which specific job aspects affect workers' overall satisfaction or dissatisfaction.

This combination of the multidimensionality of job satisfaction with the diversity of potential worker response patterns poses a two-headed dilemma. On the one hand, there is the danger that job satisfaction is treated simplistically, as if it were unidimensional (which it is not). On the other hand there is the danger that the calculus may become too specific (Katz & Van Maanen, 1977), leading to separate theories of satisfaction for several different classes of worker--hardly a practical solution.

Since job satisfaction seems to be related to specific and tangible aspects of the job--aspects which may be subject to frequent change--a worker's level of job satisfaction may be relatively transitory in nature (Porter, Steers, Mowday & Boulian, 1974), fluctuating as various facets of the job come to the worker's attention as sources of momentary satisfaction or dissatisfaction. Smith, et al. (1969) also alluded to the transitory nature of satisfaction. Such day-to-day fluctuations in satisfaction may not cause an employee to reevaluate his/her basic decision to participate in the organization, unless dissatisfaction were to stabilize at some subjectively low level. Measures of satisfaction/dissatisfaction taken at a singly point in time may not always accurately reflect the employee's <u>typical</u> level of job satisfaction, and thus may not relate very closely to the employee's propensity to quit a job.

Whether the relevant behaviors are those related to production or to participation, mainstream psychology would predict that the linkage between satisfaction and behavior would depend on the contingent nature of the behavior-satisfaction sequence. Though certain psychologists tend to differ in the particulars, there is general agreement today that human behavior is initiated, directed and maintained by something similar to Thorndike's Law of Effect (Hilgard & Bower, 1966). Behavior is regulated

by its (expected) consequences. Thus job satisfaction, presumed to be a state of affairs that the worker desires, is related to work behavior, to the extent that the worker sees the satisfaction as a result of that behavior.

Lawler and Porter (1967) proposed an alternative explanation for the low but pervasive correlations between satisfaction and performance. In contrast to the satisfaction-causes-performance hypothesis, they took the unorthodox stand that performance may cause satisfaction!

The Lawler-Porter model assumes that performance leads to rewards, and that at least some of these rewards are contingent on adequate performance. Rewards, in turn, are evaluated by the recipient in terms of his/her concept of equity, and lead to a state of satisfaction. Of the two broad classes of reward, intrinsic and extrinsic, it is proposed that the former has a much closer relationship to performance, because intrinsic (self-administered) reward contingencies (i.e. what leads to what) are much clearer to the individual.

Although there has been a recent trend toward adopting behavior modification principles to the work organization (Hamner & Hamner, 1976), organizations have been, historically, rather ineffective in gearing their extrinsic work rewards to actual performance. There are several contributory factors behind the general reticence to establish contingency-based organizational reward systems. The workplace is complex and it is sometimes difficult to monitor work behavior accurately enough to permit accurate and equitable reinforcement of desired work behaviors. Whatever the reasons, as long as the worker remains unable to discern a link between his/her performance and organizational rewards, the link between job satisfaction and work behavior will continue to be tenuous.

ATTITUDES AND BEHAVIOR II: ORGANIZATIONAL COMMITMENT

To some extent, the concept of organizational commitment has replaced job satisfaction as the focus of the search for linkages between employee attitudes and work behavior. Several reasons have been proposed why commitment has generated such interest. Theoretically, commitment should be a reliable predictor of certain employee behaviors, particularly turnover

(Koch & Steers, 1978). Secondly, the concept makes intuitive sense, and stems from a persistent historical concern with employee loyalty. Finally, behavioral scientists are interested in commitment in its own right, because exploration of the concept of commitment holds the promise of lending important insights into the way people make sense our of their relationship to their environment (Mowday, Steers, & Porter, 1978). It has been proposed that commitment is a more stable employee attribute than job satisfaction, and that this is a basis for assuming its closer relationship to actual behaviors (Porter, et al., 1974).

Organizations need to motivate their employees in three respects. First, they must be induced to join and remain in the organization. Secondly, they must be motivated to exhibit dependable role behavior, as prescribed by the organization. Finally, they must be motivated to emit spontaneous and innovative behaviors that go beyond the concrete role prescriptions (Katz, 1964). While system-wide rewared can accomplish the first requirement, and contingency-based rewards can accomplish the second, something further may be required for the elicitation of employee spontaneity and innovation. That "something" may be organizational commitment.

What is Organizational Commitment?

The term "commitment" has been endowed with a number of overlapping meanings. It is perhaps unfortunate that some other term, having less common-sense meaning, was not selected to describe the psychological linkage between individuals and their organizations. Most English-language dictionaries carry several related but distinct definitions for commitment, with meanings ranging from "perpetration," to "consignment," to "pledge," to "entrustment."

Even in the realm of the behavioral sciences, there have been a variety of approaches to defining commitment. These definitions have ranged from the calculative-rational ideas of the structuralists (Abramson, Cutler, Kautz & Mendelson, 1958; Becker, 1960; Stebbins, 1971), through the cognitive consistency approach of the social psychologists (Kiesler, 1971; Salancik 1977a, 1977b; Staw, 1974), to the motivational-affective treatment of commitment offered by current organizational behavior scholars (Porter,

Crampon & Smith, 1976; Porter, et al., 1974; Steers, 1977). While these three general approaches do not exhaust the ways that commitment has been conceptualized, they tend collectively to capture the principal elements of relevance of the commitment concept to the attitudes, performance and participation of organizational members. Accordingly, each "school" will be described, in order to allow comparison of what each has to offer of potential use to the management of transit organizations. In particular, emphasis will be placed on a comparison of assumptions as to the nature (i.e. dimensionality) of organizational commitment, the factors leading to high levels of employee commitment, and the behavioral outcomes expected to result. As will be seen, the three general conceptualizations of commitment have different implications with respect to organizations' ability to have committed members, as well as for the type of organizational behavior expected of committed employees.

The calculative-rational view. For this "school," the object of a member's commitment is not the organization, per se. Rather, it is future behaviors that become committed. Probably the most influential scholar of the calculative-rational persuasion is Becker (1960), who defined commitment as "consistent lines of activity," resulting from earlier personal investments that Becker called "side bets." A person rejects feasible alternative behaviors because he or she finds the cost of deviation from current behavior, in terms of forfeited investments, too high. The person feels obligated to pursue "committed lines" of behavior by force of penalty.

Under this concept, commitment is a structural phenomenon, which occurs as a result of individual-organization transactions which amount to alterations in side bets or investments over time (Hrebiniak & Alutto, 1972). Commitment in this sense is the result of a quasi-rational economic analysis. Concrete examples of the sort of side bets that would engender commitment to the behavior, for example, of keeping one's present job might include: investments in a company pension fund; investment of self in training that would be useful only in the present organization; or investment of a sizeable portion of one's own lifetime in service to the organization. Personal factors that would tend to predict commitment include length of service, non-transferability of job skills, age, job security, and attainment of high

position in the organization.

It should be readily apparent that not all side bets are placed consciously and deliberately by the individual. Side bets can be made via certain social mechanisms. One such mechanism is generalized cultural expectations. "People feel that a man ought not to change his job too often and that one who does is erratic and untrustworthy. Two months after taking a job a man is offered a job he regards as much superior but finds he has on the side, bet his reputation on not moving again..." (Becker, 1960, p. 36).

Side bets can also be made through impersonal bureaucratic arrangements (Becker, 1960). Reluctance to leave the organization because of loss of investment in a non-transferable pension fund has been mentioned as one instance of such an arrangement. Other side bets can be made via gradual adjustment to personal role behaviors, expected by an organization, which would make it difficult to adjust to a different organization's demands. A final class of unintentional side bet is the need to "save face." Goffman (1955) noted that people present images of themselves to others and, having once done so, they find themselves constrained to act in the future in a manner consistent with the earlier "front". To fail to do so would incur the cost of "losing face," by appearing to be an erratic person. Thus, once an individual has joined an organization and agreed to provide his/her services in exchange for organizational rewards, there is a psychological barrier to reneging on the agreement.

Thus, commitment to an organization is seen as a state which can arise, not necessarily through some crucial act on the part of the employee, but rather through the accumulation of a series of relatively trivial side bets--a process Becker (1960) termed "commitment by default." While not one of these represents sufficient potential loss to constrain behavior, in the aggregate they represent an investment of such magnitude that the employee becomes bound to the organization (or, more precisely, to future behavior as an organizational member).

It is apparent from the foregoing discussion that commitment, as conceived by the structuralists, is less than total. Kanter (1968, 1972) saw total commitment as consisting of three different kinds of commitment: continuance commitment is commitment to a social system role; cohesion commitment is commitment to organizational solidarity through development

of affective bonds; and control commitment is subordination of one's own values, norms and decision prerogatives to those of the organization.

It is apparent that the structuralists are describing a form of commitment very close to Kanter's first category. In fact, Kanter (1968) described continuance commitment, as the result of a cognitive evaluation, thusly: "When profits and costs are considered, participants find that the cost of leaving the system would be greater than the cost of remaining: 'profit' compels continued participation" (p. 500); and "The individual who makes a cognitive-continuance commitment finds that what is profitable to him is bound up with his position in the organization, is contingent on his participating in the system..." (p.504).

Kanter proposed two mechanisms whereby social systems (e.g. organizations) elicit continuance commitment from their members: sacrifice and investment. The process of sacrifice asks members to give up something as the price of membership. The more it "costs" someone to do something, the more valuable the act is considered, in order to justify the psychic expense involved. This device is well known in organizations that have severe initiation rites (cf. Aronson & Mills, 1962), for instance elite military units whose "rites of passage" are rigorous and painful. The "side bet" placed here becomes forfeit if the member then leaves the organization for which attainment of membership had exacted such a high cost.

Kanter's (1968) other mechanism, investment, can be a simple economic process involving tangible resources such as money, or it can involve such intangibles as time and energy. To the extent that such investments are seen as irreversible, they provide an individual with a personal stake in the fate of the organization, as well as making leaving costly.

Commitment as described thus far seems a sterile concept, endowed with an essentially negative connotation--the result of an insidious entrapment process. Stebbins (1971) specified commitment as a matter of forced behavior, as did Goffman (1960), who drew a careful distinction between commitment, one the one hand, and attachment, on the other. The committed individual becomes"...locked into a position and coerced into living up to the promises and sacrifices built into it" (Goffman, 1961, p. 89). Involvement in the organization is purely calculative, in Etzioni's (1975) sense of the term. Continued participation is weighed solely in

terms of costs and benefits. In fact, Etzioni held that involvement in utilitarian organizations (i.e. those in which the means of motivating and controlling members is material rather than psychological) is, by nature, calculative, based on a member's determination of the amount of involvement expected to profit him/her most. Such organizations tend to be impersonal and rational, and member's investment of self is only segmental, i.e. involves only a part of the person (Sheldon, 1971).

Furthermore, the relevant behavior seems limited, for the most part, to that of participation. Commitment, in the calculative-rational sense, appears to have little bearing on the decision to produce. Yet the committed worker does have a stake in the survival of the organization, as a necessary condition to permit continued membership. In a broad sense, the fate of the organization and that of the individual become as one. This is a major implication of the psychological concept of identification (Kagan, 1958). Perhaps this logic led Sheldon (1971), a structuralist, to treat commitment as "...an attitude or an orientation toward the organization which links or attaches the identity of the person to the organization" (p. 143). Sheldon saw this identification as leading to a positive evaluation of the organization, and a willingness to work toward organizational goals.

Such a departure from a purely rational-exchange concept of commitment, toward the consideration of less rational psychological dynamics, brings one close to the position taken by several social psychologists regarding commitment. It is to this approach that we now turn.

The cognitive consistency view. The social-psychological treatment of commitment (e.g., Kiesler, 1971) begins with consideration of the structural conditions that give rise to commitment, but takes a crucial additional step, by positing a new self-sustaining psychological state which results from the process of becoming committed. In essence, behavior is seen as the cause of new attitudes and beliefs (Kiesler, 1971; Salancik, 1977a 1977b). Social psychologists "...have primarily been concerned with the attitudinal consequences of making irrevocable behavioral commitments" (Staw, 1977, p. 8). "Commitment is a state of being in which an individual becomes bound by his actions and through these actions to beliefs that sustain the activities and his own involvement" (Salancik, 1977a, p. 62).

Two aspects of the social-psychological perspective differentiate it from the previously discussed calculative-rational approach. First, there is a much stronger component of volition in the social-psychological treatment. Unlike Becker's (1960) analysis, the social psychologists tend to consider as committing only those acts which the actor can attribute to the exercise of free will. This hypothesis stems from two broad bodies of social-psychological through: attribution theory, including self-perception theory (Bem, 1972; Kelley 1967, 1974), and cognitive dissonance theory (Festinger, 1957), which provide alternative explanations of people's tendency to behave sometimes in counterintuitive ways.

The attributional approach to the perception of self, simply stated, is that people make judgments about their own motivation and beliefs the same way they attribute such internal states to others--by observing behavior, i.e., "If I spent all week working on that project without visible reward, I must have done it for the enjoyment!"

Although there are technical differences, cognitive dissonance theory treats such phenomena in a similar way. A key aspect of dissonance theory is the principle of insufficient justification. When someone behaves in a way contrary to his/her own attitudes, and cannot find some extrinsic reason (e.g., some material reward) for the behavior, there results a change in the attitude to make it more nearly consonant with the behavior. The driving force behind the attitude change is a need for cognitive consistency. People are not comfortable with attitudes, beliefs and behavior that are not mutually consistent. When these become incompatible there is a force generated toward reconciliation. But since the behavior is past and irrevocable, something else must yield; hence a shift in attitude and/or belief. However, it must be emphasized that this tension is set up only when the individual cannot find some external cause on which to "blame" the behavior. A large body of research has demonstrated the existence of behavior that is consistent with the predictions of cognitive dissonance theory (e.g. Festinger & Carlsmith, 1959; Kiesler, Nisbett & Zanna, 1969).

Salancik (1977a) proposed that three characteristics of an individual's acts are critical, in the development of commitment: <u>visibility</u>, <u>irrevocability</u> and <u>volition</u>. Acts that are secret lack the force to commit because the person can deny or forget them. Salancik (1977a) noted that one means of committing individuals to organizations is to make their identification with the organization highly visible, by such tactics as announcements via

local news media, when individuals become members or change organizational status.

Irreversibility or irrevocability of behavior is committing, according to Salancik (1977a) because a person must either assert the wisdom of past acts or face up to regret over them, i.e. "A person who aims a loaded gun at someone, then fires, ends up either hating himself or hating his victim" (p.66).

Even more essential than either visibility or irrevocability is the aspect of volition. Whithout free choice, individuals can always dissociate themselves from their prior actions ("I'm doing this job for the money, but I hate the job"). Kiesler and Sakamura (1966) demonstrated the potent effect of volition in an experiment in which persons who made a speech expressing their belief on an issue were paid either one dollar or five dollars (randomly) for the speech. Later, all participants read a message attacking their belief. Those who had been paid only one dollar showed relatively little attitude change, while those who had been paid five dollars showed a great deal of change in attitude, in the direction advocated by the message that attacked their belief. This finding was interpreted as demonstrating that commitment is reduced, when persons have some reason other han volition (i.e. the relatively large payment) upon which to attribute their view of the nature of the committed state. While for the structuralists, committed behavior might be carried out grudgingly, the cognitive-consistency school considers this unlikely. Attitudes, behavior and belief must somehow be brought into consonance. If the behavior is fixed, then attitudes and/or belief must yield. Thus, the committed person <u>likes</u> being committed, and develops a favorable disposition toward, for example, his or her organization.

Stebbins (1970), a structuralist, termed such a positive affective state <u>value</u> commitment, to distinguish it from <u>continuance</u> commitment (Kanter, 1968), and took the position that when structuralists such as Becker referred to "commitment" it was always understood to mean continuance commitment. Goffman (1961), another structuralist, denied that value commitment. was really commitment at all, preferring the term <u>attachment</u>. Several scholars not necessarily structuralists, (Brown, 1969; Hall & Schneider, 1972; Lee, 1971; Rotondi, 1975) have treated this concept as identification. Whatever

the label, and whatever its origins, commitment, for the cognitive-consistency school, is a positive state of mind, and something that becomes a part of the basic psychological makeup of the individual.

This perspective on commitment is shared by several current organizational behavior scholars, although they may differ as to its origins, as will be seen in the following section.

The motivational-affective view. While the calculative-rational approach treats commitment as channelized behavior, constrained by the threat of loss of investments, and the cognitive-consistency school treats commitment as a state of mind resulting from rationalizing one's own earlier behavior, they generally share the view that the causes of commitment lie in one's own actions (whether active or passive). There is a third major stream of thought in the commitment literature, which places more emphasis on the organization as the source or initiation of members' commitment. This school of thought has its most obvious origins in the work of Porter and his associates (Porter & Smith, 1970; Porter, et al., 1974, 1976; Steers, 1977), and shows unmistakable conceptual linkages to earlier work of these scholars in the areas of work motivation and employee need satisfaction.

The definition of organizational commitment offered by Porter, et al. (1974) contains three major components: (1) a strong belief in and acceptance of the organization's goals; (2) a willingness to exert considerable effort on behalf of the organization; and (3) a definite desire to maintain organizational membership. Clearly, this notion of commitment encompasses both continuance commitment and value commitment. Commitment research, conducted under this framework has indicated that commitment is not only a predictor of employee retention (Koch & Steers, 1978; Porter, et al., 1974) but may also predict employee effort and performance (Mowday, Porter & Dubin, 1974).

Another contemporary organizational scholar, Buchanan (1974a), has defined commitment as a "...partisan, affective attachment to the goals and values of the organization for its own sake, apart from its purely instrumental worth" (p. 533). The psychological bond between individuals and their organizations was conceived by Buchanan as having three major components: (1) identification -- adoption as one's own the goals and

values of the organization; (2) involvement -- psychological immersion in one's work role; and (3) loyalty -- a feeling of affection for and attachment to the organization.

As does Porter's, Buchanan's concept of commitment portrays the committed employee as one who is satisfied with his or her lot, and who is highly motivated on behalf of the organization. Staw (1977), in a criticism of the approach represented by Porter and by Buchanan, stated that the organization's point of view may be overemphasized; that...

> a committed employee is highly motivated to serve organizational goals, work hard, serve long hours, is concerned about the job even when not physically present at work, and wants to remain in the organization. I think we can safely say that one has described the ideal employee! And, if the organizational commitment literature has missed some aspect of the ideal, I am sure it soon will also be incorporated into the definition (p. 3).

Steers (1977) developed and tested a model of the factors underlying commitment and also the results of commitment. He proposed three sets of factors, found throughout the work environment, as determinants of commitment. Personal characteristics expected to influence commitment included age, opportunities of achievement, education role tension, and central life interest. Job characteristics said to influence commitment were job challenge, opportunities for social interaction, and performance feedback. The third category was work experiences during an employee's tenure in the organization. Such experiences might include the learning of peer-group attitudes toward the organization; receipt of rewards from the organization (particularly with reference to the employees's expectations); personal investments; and self-perceptions of personal importance to the organization. Thus, while incorporating the structuralists' ideas of investments and involvements (Becker, 1960; Sheldon, 1971), Steers' model also places great importance on individual differences and on how the employee is treated by the organization.

In the empirical test of the model, based on hospital employees, scientists and engineers, all three of Steers' categories were shown to influence employee commitment. Thus, the antecedents of commitment are apparently quite diverse. A common theme running through many of the important variables is the notion of exchange (cf. Gouldner, 1960; Homans, 1968) or reciprocation (Levinson, 1965). Individuals bring needs and goals to an organization and exchange their skills and energies for organizational resources capable of meeting their needs (Porter, Lawler & Hackman, 1975). When the exchange is satisfactory to the employee, commitment levels tend to increase. When the organization fails to meet employees needs or is not dependable in holding up its end of the exchange, commitment may diminish.

Several likely results of employee commitment were proposed (Steers, 1977), including: desire and intent to remain an organizational member; attendance; and quantity and quality of job performance. Strong associations were found for all of the measures relating commitment to turnover but, while the relationships between commitment and absenteeism and performance were all in the expected direction, they were relatively weak.

In analyzing the reasons for the disappointing linkage between commitment and work performance, Steers noted that neither organization studied was profit-oriented, in the conventional sense. Furthermore, while managers in these organizations were sensitive to problems of turnover and absenteeism, they found it difficult even to specify appropriate criteria by which to measure employee performance.

Contemporary theories of leadership and work motivation take the position that employee performance does not depend on motivation alone. Also important are ability and role clarity (House, 1971; Porter & Lawler, 1968). That is, the organization must ensure that employees are capable of performing well, either by selection, training, or a combination, and the organization's expectations of what constitutes good performance are made clear to the employee.

In essence, it is implicit in the motivational-affective approach to organizational commitment that the organization bears prime responsibility for providing the conditions under which an employee will become committed. Clearly, in contrast to the calculative-rational and cognitive-consistency formulations, while much of the responsibility for developing employee commitment is in the hands of the organization, the potential

payoffs to the organization might surpass those of mere employee "continuance."

A comparison of approaches. The three mainstream approaches to commitment differ with respect to both the causes and the nature of commitment. Both differences carry important implications regarding the meaning of the commitment concept for work organizations

In a frequently cited study of personnel managers, Ritzer and Trice (1969a, 1969b) attempted to test Becker's side bet theory. Their conclusion was that commitment is a psychological phenomenon, as opposed to a structural phenomenon as proposed by Becker. Few variables that Becker would have considered indicators of side bets correlated significantly with commitment. Ritzer and Trice took the position that individuals have a need to become committed to something, in order to make working life meaningful. Commitment to the work organization was seen to occur when alternative targets of commitment (e.g. profession or union) are not suitable. Once psychological commitment has begun, however, side bets will serve to further that commitment.

Ritzer and Trice's research stirred something of a controversy during the ensuing decade. Hrebiniak and Alutto (1972) and Alutto, Hrebiniak and Alonso (1973) provided evidence, contrary to that of Ritzer and Trice, suggesting that commitment is an exchange and accrual phenomenon, based on accumulated investments and the perception of reward-cost ratios. These authors held that Ritzer and Trice's findings had been spurious, due to the way in which they measured commitment.

Conversely, Shoemaker, Snizek and Bryant (1977) found only partial support for Becker's hypothesis and determined that psychological factors (i.e. job satisfaction and fellings of solidarity) were better than structural factors as predictors of organizational commitment--a finding that they interpreted to be supportive of Ritzer and Trice. In an Israeli study, Aranya and Jacobson (1975) found more support for Ritzer and Trice than for Becker. Neither Shoemaker, et al. nor Aranya and Jacobson, however, rejected, out of hand, side bets or investments as sources of some commitment. Other studies have also supported the compromise approach to the development of commitment to, or identification with, an organization (Hall & Schneider, 1975; Hall, Schneider & Nygren, 1970; Stevens, Beyer & Trice, 1978).

The employee's career stage may also be instrumental in determining which specific factors enhance commitment (Buchanan, 1975a). In sum, it appears that the causes of commitment may be diverse, with identifiable antecedents in (1) the personal characteristics of individuals, (2) their behavior and experiences, and (3) organizational policies and practices.

The focus of both the calculative-rational and the cognitive consistency "schools" is clearly more on commitment's causes than its nature, and here both approaches may take too simplistic a stand. While both investments and rationalization must undoubtedly play large parts in the commitment process, it seems unlikely that they tell the whole story.

While the motivational-affective approach appears to allow for multiple causes of commitment, members of this school seem to have been more explicitly interested in commitment's nature and outcomes than in its antecedents (an exception to this generalization is Steers, 1977).

As to the nature of commitment, the motivational-affective approach seems to take a more nearly multidimensional stance than do the other two approaches. Implicit in Porter's definition of commitment (Porter, et al., 1974) are the dimensions of attachment, identification and motivation. Such an expanded view of commitment is probably the more realistic, as even those who have chosen to focus on only a singly aspect of commitment, have often recognized its complex nature (e.g. Stebbins, 1970).

Accordingly, it is our view that the general approach taken toward the study of commitment by the motivational-affective scholars encompasses important aspects of the other approaches, and is therefore most useful for a study of employee commitment in the work organization. It is that general framework, therefore, within which we attempt to extend the concept to the arena of public transit.

THE MEASUREMENT OF COMMITMENT

Approaches to the measurement of commitment have been early as diverse as approaches to its definition. Kanter (1968, 1972) inferred commitment by enumeration of the commitment-enhancing mechanisms used by the organization. Several scholars have attempted to measure commitment by asking employees questions related to their strength of resolve to remain members of their organization (Alutto, Hrebiniak & Alonso, 1973; Aranya & Jacobson, 1975; Card, Goodstadt, Gross & Shanner, 1975; Hrebiniak

& Alutto, 1972; Ritzer and Trice, 1969a 1969b; Shoemaker, et al., 1977; Stevens, et al., 1978). Wiener and Gechman considered extra effort on behalf of the organization to be a good "proxy" for commitment strength, and asked employees to keep diaries recording the amount of personal time they spent working on organizational matters after work. Still others have used multiple measures (cf. Buchanan, 1974a; Hall, et al., 1970). Occasionally, ostensible measures of commitment have been reported which bear little detectable relationship to commitment as it has been discussed in these pages (e.g., Grusky, 1966; Thornton, 1970).

Porter developed an instrument containing 15 items intended to tap the three aspects of commitment, as asserted by Porter and his co-workers (Mowday, et al., 1978). This scale has been named the Organizational Commitment Questionnaire (OCQ).

The OCQ has been used with various categories of employee, covering a wide range of educational/job levels. Employee types studies have included scientists and engineers (Steers, 1977), psychiatric technician trainees (Porter, et al., 1974), industrial managers (Steers & Spencer, 1977), hospital employees (Steers, 1977), bank employees (Mowday, et al., 1974), management trainees (Porter, et al., 1976) and telephone company employees (Dubin, Champoux & Porter, 1975; Stone & Porter, 1975). For the most part, these studies have concentrated on relatively sophisticated employee types. However Dubin, et al. (1975) and Stone and Porter (1975) demonstrated the feasibility of using the OCQ with blue-collar workers.

EMPLOYEE COMMITMENT IN URBAN MASS TRANSIT

Historically, the study of organizational commitment has concentrated on managerial and professional levels. For instance, studies of the "cosmopolitan-local" controversy (Gouldner, 1957) have typically concentrated on the potential loyalty conflicts of research scientists or academics (Abrahamson, 1965; Goldberg, Baker & Rubenstein, 1965; Kornhauser & Hagstrom, 1962; Lee, 1969; Pelz, 1956; Thornton, 1970) or other professional personnel (Blau & Scott, 1962; London, Cheney & Tavis, 1977). Studies of organizational identification and commitment have tended to concentrate on research and development personnel (Hall & Schneider, 1972; Rotondi, 1975; Sheldon, 1971), clergy (Hall & Schneider, 1972; Schoenherr & Greeley, 1974),

executives (Buchanan, 1974a, 1974b) military officers (Card, 1978), forest rangers (Hall, Schneider & Nygren, 1970; Shoemaker, Snizek & Bryant, 1977) and other skilled and professional-level employees (Brown, 1969).

Conspicuous by their relative absence have been studies of commitment of employees at lower organizational levels. However, several studies conducted with the OCQ, as discussed in the preceeding section, have sought to extend the commitment concept to a wider segment of the workforce.

Public-sector studies of commitment have been rate (cf. Buchanan 1974b; Stevens et al., 1978), and there has been no known commitment study conducted in public mass transit. The present research project sought to correct that deficiency.

In extending the concept of commitment to public transit employees, inevitable comparisons arise between commitment and job satisfaction, and their relative degree of association with work-related behaviors. The focus of the present investigation lay in a broad set of exploratory questions: (1) What is the nature of organizational commitment (i.e. how many separable facets or factors underlie the construct?); (2) How do levels of commitment and job satisfaction in public transit employees relate to each other and how do they compare with satisfaction and commitment in other occupations?; (3) What are the important correlates of job satisfaction and commitment among public transit employees?; (4) What are the antecedent conditions of employee commitment to transit organizations?; and, finally (5) What are the outcomes of employee commitment, in terms of transit organization effectiveness?

METHOD

Sample and Research Sites

The research was conducted as part of a larger study which investigated the impact of labor-management relations on organizational effectiveness in urban mass transit (Perry, Angle & Pittel, 1979). A total of 28 transit organizations (fixed-route bus systems) in the Western United States participated in the study. The extent of data collection differed among participant organizations depending, inter alia, on each associated labor organization's concurrence in having its members surveyed. Questionnaires

were administered to employees at 24 of these organizations. Archival and manager interview data were collected at all participating organizations.

The sample-pool criterion was membership in the bus operators' bargaining unit. Accordingly, a majority (91%) of respondents were bus operators. However, at some of the participating transit organizations, mechanics and/or clerical personnel were included in the operator's bargaining unit. In those instances, they were sampled, along with the operators.

Eighty-seven percent of respondents had at least a high-school education and seven percent were college graduates. Eighty-six percent had worked at their present organization for longer than one year.

Measures

Organizational commitment. Employee commitment to the transit organization was measured by Porter's Organizational Commitment Questionnaire (OCQ) (Porter, et al., 1974). Attachment 1 contains the 15-item scale. As can be seen, reading level demands are moderately high.[1] Respondents were asked to express extent of agreement or disagreement with each item on a seven-point Likert-type scale, having anchor points labelled from "strongly disagree" to strongly agree." Six of the 15 items are worded in a reversed-sense to counter response-set tendencies, and must be reverse-scored. This instrument has demonstrated good psychometric properties, with internal consistency (coefficient alpha, Cronbach, 1951) ranging from .82 to .93, with a median of .90 (Mowday, et al., 1978). In the present study Cronbach's alpha was .90

Job Satisfaction. The short form of the Minnesota Satisfaction Questionnaire (MSQ) (Lofquist & Dawis, 1969) was used to measure satisfaction with 20 aspects of the job. In the short form, each job aspect is measured by a single question. In addition, the MSQ provides intrinsic, extrinsic, and general satisfaction scores. Responses to each item were elicited on a seven-point Likert-type scale, with verbal anchors ranging from "very dissatisfied " to "very satisfied." Reliability coefficients reported for seven occupations range

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[1]Using Flesch's (1948) Reading Formula, the scale's reading ease index is 56, placing it in Flesch's fairly difficult" category. This level of difficulty was characterized as typical of "quality" magazines, but below the level of difficulty of academic journals.

from .87 to .92 (Weiss, Dawis, England & Lofquist, 1967). Scale reliability in the present study (Cronbach's Alpha) was .91. The 20-item form of the MSQ is reproduced in Attachment 1.

Personal characteristics. Measures of personal characteristics included sex, education level, marital stutus, organizational and job tenure, breadwinner status, age, and race. Self report measures were also obtained regarding absenteeism, intent to remain in the organization, perceived job opportunities in other organizations and perceived usefulness of personal skills to other organizations.

Organizational performance. As part of the larger study (Perry, et al., 1979), performance indicator data were obtained for respondents' transit organizations in four broad categories: service efficiency, service effectiveness, employee withdrawal and organizational adaptability. Service efficiency was represented by three measures: revenue vehicle hours per driver hour; operating expense per employee; and operating expense per revenue vehicle hour. Service effectiveness was measured by passengers per service area population; and passengers per revenue vehicle hour. Employee withdrawal measures included self-report and archival data on turnover self report data on absenteeism, and archival data on tardiness incidents. Adaptability was measured by manager and employee perceptions of organizational adaptability, by a modified version of Mott's (1972) questionnaire. Attachment 1 contains the 4-item adaptability measure. The rational for selection of the specific performance measures is discussed in Perry et al. (1979).

Data collection procedures. Archival data were collected, on-site, at the 24 participating transit organizations during the latter half of 1977. Site visits normally lasted two days. Administration of questionnaires took place during the site visits.

All sampling was by personal presentation of questionnaires to employees by a member of the research team. While the majority of the completed questionnaires were handed back to the researchers at the transit site, respondents who were unable to complete the questionnaires during the site visit were provided pre-addressed and stamped envelopes for mail return. The cumulative response rate was 64% with a 71% rate from on-site returns and a 32% rate via mail return, for a total sample N of 1244.

Probability questionnaire sampling targets were established separately for each transit organization, based on organization size. At the smallest organizations (less than 30 eligible employees) the target was 100%. This target declined, percentagewise, as organization size increased, so that the target was only 10% at organizations having greater than 1000 eligible employees. Little difficulty was encountered meeting sampling quotas at most organizations, except for those in the 100% category, and sampling was close to quota in those cases, as well.

Since participation was voluntary, true random sampling was infeasible. Researchers attempted, judgmentally, to stratify samples by age, race sex and tenure, in the process of contacting employees at work sites. However, there were clear discrepancies in proportional representation of certain groups. Blacks were under-represented (14% in sample/31% in population) and whites were over-represented. Women were over-represented (18% in sample/11% in population), as were employees over 50 years of age (18% in sample/6% in population). Employees having more than five years tenure in the organization were under-represented (30% in sample/38% in population). Other groups matched sampling targets reasonably well. Although an effort was made to administer questionnaires during all work shifts, the site visits, and therefore all questionnaire administration, took place on week days. This may have been partly responsible for the racial, age and tenure imbalances. The over-represented groups were probably present in greater numbers during these more desirable work days because of the seniority system in route bidding. It is also likely that females were available for questionnaire response in disproportionate numbers because of a high percentage of females on "extra boards" (i.e. operators who are brought on duty to fill in for absentees on bus routes). The large amount of time spent in operator's ready rooms by extra-board drivers may have increased the probability of their being asked to participate.

RESULTS

Organizational Commitment: Factor Structure

Factor analysis was carried out using the common-factor method and a varimax orthogonal rotation of factors (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975). This procedure yielded three factors, based on the usual convention of unrotated eigenvalues greater than or equal to one (Nunnally, 1978),

However, the third factor had an eigenvalue (1.004) that barely met the criterion, and only one item loaded on the factor under a stringent criterion suggested by Schwyhart and Smith (1972). This criterion for including an item in a factor scale was that its squared factor loading must be greater than the sum of that item's squared loadings on all other factors. In the present study, item allocation to factors followed that criterion.

Table B-1 presents two - and three-factor solutions and factor loadings above .30, after rotation. Only the first and second factors were interpreted, in veiw of the weak evidence for a third factor and the lack of multiple item loadings for that factor. A forced, 2-factor solution confirmed this factor structure.[2] The two valid factors were interpreted as: Factor 1 - value commitment; and Factor 2 - membership commitment.[3] Factor 1 contained 9 items and Factor 2 contained 5 items. Table 1 indicates which items belong with which factors. Table B-2 lists the items associated with each factor.

Factor 1 is a complex factor. Items loading on this factor connote pride in association with the organization; positive evaluation of the organization; motivation to perform well; concern for the fate of the organization; and congruence of individual and organizational values. This complex of attitudes is value commitment in the broadest sense, as defined by Stebbins (1970). A conceptual case could be made for subfactors of (1) identification; (2) functionally autonomous motivation; and (3) positive affect toward the organization. Empirically, however, these aspects cluster together as one factor.

The second factor relates clearly to membership commitment. Most of the items refer directly to attitudes toward establishment and maintenance of organizational membership.

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[2]Except, of course, the forced inclusion of the singly item (item # 12) that had not loaded on factors 1 and 2 in the original three-factor solution. In the two-factor solution, this item loaded on the second factor (membership commitment).

[3]Membership commitment is, conceptually, very close to Stebbins' (1971) notion of continuance commitment, but somewhat broader. Items loading on this factor relate to feelings about having established organizational membership, as well as maintenance of current membership.

TABLE B-1

FACTOR ANALYSIS RESULTS FOR THE ORGANIZATIONAL COMMITMENT QUESTIONNAIRE

Rotated Factor Loadings*

Item		3-Factor Solution			2-Factor Solution	
Factor:		1	2	3	1	2
1		.594			.565	
2		.716	.312		.738	.339
3	$		.482			.489
4		.509			.556	
5		.547		.483	.650	
6		.745	.336		.750	.362
7	$		.327			.340
8		.586		.502	.689	
9	$		.610			.623
10		.646			.651	.345
11	$		.689			.720
12	$		.375	.532		.407
13		.569	.325		.480	.306
14		.613	.323		.661	.364
15	$	.409	.555		.395	.561

* Only factor loadings above .30 are shown.

$ Reverse-scored items

Pre-Rotation Eigenvalues: Factor 1 - 6.354
Factor 2 - 1.363
Factor 3 - 1.004

TABLE B-2

ORGANIZATIONAL COMMITMENT FACTORS

Factor 1: Value Commitment

1. I am proud to tell others that I am part of this organization.
2. I talk up this organization to my friends as a great organization to work for.
3. I am extremely glad I chose this organization to work for over others I was considering at the time I joined.
4. For me, this is the best of all organizations for which to work.
5. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization to be successful.
6. This organization really inspires the very best in me in the way of job performance.
7. I really care about the fate of this organization.
8. I find that my values and the organization's values are very similar.
9. I would accept almost any type of job assignment in order to keep working for this organization.

Factor 2: Membership Commitment

1. There's not much to be gained by sticking with this organization indefinitely.
2. It would take very little change in my present circumstances to cause me to leave this organization.
3. Deciding to work for this organization was a definite mistake on my part.
4. I feel very little loyalty to this organization.
5. I could just as well be working for a different organization as long as the type of work were similar.

It should be pointed out that all items loading on Factor 2 were reverse-scored, while none of the reverse-scored items were loaded on Factor 1. Initial concern that the two factors were merely methodological artifacts was alleviated, however, when it was noted that the negatively worded items also tended to be those pertaining to attitudes toward organizational membership. Furthermore, as will be discussed later, at an organizational level of analysis the two factors appear to relate differently to different classes of transit performance measures. As will be seen, these observed differences have a sound theoretical rationale.

Mowday, et al. (1978) reported factor analysis results of the 15-item OCQ for three different employee groups (public employees bank employees and telephone company employees). Although their interpretation was that eigenvalues were too small to justify interpreting more than one factor, their raw data agree with these results for two of the three employee groups. This is considered strong evidence for the stability of the factor structure established in this study, as factor analyses are notoriously sensitive to differences between respondent groups (cf. Lee, 1971; Schwyhart & Smith, 1972). In addition, this provides further argument that the current factor structure was not a spurious result of transit employees' reactions to the reverse-scored items. Reverse-scoring does not ordinarily affect factor structure, and it appears highly unlikely that it would do so in three separate populations.[4]

Previous applications of the OCQ treated commitment as a single overall score, rather than as the two factors found in the present study. Mowday, et al. (1978) reported OCQ means and standard deviations for nine separate occupational groupings. Table B-3 provides comparison data between those occupational groupings and the public transit employees participating in the present study.

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[4]Further exploration of the OCQ's factor structure was carried out by re-analyzing this study's original data in a forced, two-factor solution, but this time with an oblique (direct oblimin) rotation. The factor structure, as had been derived by the orthogonal rotation, was confirmed. Accordingly, for all subsequent analyses, the 14-item factor structure shown in Table 2 was used.

TABLE B-3

OCCUPATIONAL COMPARISON: ORGANIZATIONAL COMMITMENT (OCQ)

Occupation*	N	OCQ Mean	Standard Deviation
Public Employees	569	4.5	.90
University Employees	243	4.6	.90
Hospital Employees	382	5.1	1.18
Bank Employees	411	5.2	1.07
Telephone Company Employees	605	4.7	1.20
Scientists & Engineers	119	4.4	.98
Auto Company Managers	115	5.3	1.05
Psychiatric Technicians	60		
Remaining in Organization		4.2	1.04
Quitting Organization		3.3	.94
Retail Management Trainees	59	6.1	.64
Public Transit Employees	1214	4.50	1.36
Bus Operators	1087	4.48	1.13
Supervisors	15	4.91	1.16
Maintenance Personnel	58	4.34	1.11
Non-operators, 1st level	104	4.57	1.10

* Non-transit data taken from Mowday, et al. (1978)

Job satisfaction. Intrinsic, extrinsic, and general satisfaction scores for transit employees and for six comparative occupations (Weiss, et al., 1967) are shown in Table B-4.

Although Weiss, et al. reported normative data on a 5-point scale, all scores in Table B-4 have been scaled, for the sake of comparability, to a possible range from 1 to 7. Thus, total dissatisfaction would be indicated by a value of 1, total satisfaction by a value of 7, and an intermediate or neutral point would be a scaled score of 4.

Table B-4 indicates that transit employees are generally less satisfied with their jobs than are employees in the comparative occupations. The only exception to this general rule is the electrical assemblers. For transit and non-transit employees alike, there is a persistent trend for intrinsic satisfaction to be higher than extrinsic satisfaction. that is, satisfaction with such aspects as the work itself is higher than with such job aspects as the way the organization rewards good performance. In addition, variability in satisfaction, as indicated by the standard deviations in Table B-4, is generally higher for transit personnel than for the comparative employees. It appears that transit employees are not particularly homogeneous with respect to job attitudes, showing a fairly wide range of satisfaction levels.

Each question on the MSQ (short form) represents one job factor, as derived from factor-analysis of the long form (Weiss, et al., 1967). Table B-5 list the the 20 factors and shows transit employee satisfaction levels (7-point scale) for each factor.

As was indicated in Table B-4, there is an overall trend for satisfaction levels to be lower for transit operators than for other non-supervisory transit employees. As Table B-5 indicates, however, there are reversals of this trend in specific job factors such as independence, social service, compensation and co-workers. For operators and non-operators alike, company policies and practices stood out as the source of greatest dissatisfaction. Job factors with which operators were dissatisfied, while non-operators seemed satisfied, included supervision advancement, and recognition.

Job factors that appeared generally as strong sources of transit employee satisfaction included independence, variety, security, social service, ability utilization, co-workers and achievement. Satisfaction with compensation was nearly as high--a finding somewhat at variance with the general body of research literature on job satisfaction (cf. Herzberg, et al., 1957).

TABLE B-4

ORGANIZATIONAL COMPARISON: JOB SATISFACTION (MSQ)

Occupation	N	Intrinsic		Extrinsic		General	
Transit:		Mean	S.D.	Mean	S.D.	Mean	S.D.
Transit Employees (total)	1224	5.24	1.05	4.19	1.36	4.82	1.08
Transit Operators	1093	5.22	1.04	4.15	1.34	4.79	1.06
Transit Supervisors	15	5.59	1.47	4.53	1.90	5.16	1.56
Transit Maintenance	58	5.48	1.01	4.30	1.45	5.01	1.08
Transit Non-Operator (non-supervisory)	106	5.39	1.09	4.47	1.44	5.02	1.13
Comparative Occupations:							
Engineers	290	5.66	.88	4.97	1.02	5.45	.84
Office Clerks	227	5.52	.90	4.52	1.16	5.21	.87
Salesmen	195	5.87	.88	4.99	1.11	5.59	.83
Janitors/Maintenance	240	5.73	.81	4.90	1.13	5.46	.81
Machinists	248	5.63	.81	4.59	1.18	5.31	.81
Electrical Assemblers	353	4.94	.91	4.21	1.13	4.72	.85

TABLE B-5

TRANSIT EMPLOYEES: SATISFACTION WITH 20 JOB FACTORS

Factor	Transit Operators		Non-Operators	
	Mean	S.D.	Mean	S.D.
Activity	5.56	1.33	5.82	1.20
Independence	6.15	1.15	5.47	1.61
Variety	5.40	1.63	5.45	1.71
Social Status	4.70	1.75	4.92	1.67
Supervision: Human Relations	3.90	2.12	4.37	2.14
Supervision: Technical	3.97	1.94	4.69	2.03
Moral Values	5.31	1.68	5.48	1.58
Security	6.18	1.19	6.17	1.20
Social Service	5.84	1.23	5.44	1.53
Authority	4.70	1.46	4.95	1.54
Ability Utilization	4.99	1.91	5.36	1.89
Company Policies & Practices	3.23	1.85	3.73	1.90
Compensation	4.88	1.89	4.79	1.95
Advancement	3.89	1.96	4.24	2.02
Responsibility	4.69	2.01	5.01	1.83
Creativity	4.12	1.89	5.15	1.80
Working Conditions	4.30	1.91	4.58	2.00
Co-Workers	5.24	1.64	5.02	1.84
Recognition	3.78	1.99	4.33	2.03
Achievement	4.92	1.80	5.38	1.69

Individual correlations of job satisfaction and commitment. Differences in levels of job satisfaction were found to be related to age, sex, education level and type of environment in which the employee grew up. In addition, marital status, racial/ethnic category and breadwinner status were all nearly significant as co-variates of job satisfaction. Table B-6 summarizes these relationships. Length of service was unrelated to job satisfaction ($r = .04$).

Employee commitment also differed for subsets of certain personal categories. Commitment differences, reaching conventional levels of statistical significance, were found for the variables: age, sex, and education level. Nearly significant differences were found for breadwinner status and racial/ethnic group. Table B-7 summarizes these differences. Length of service, marital status and community background were not significantly related to employee commitment.

Self-report measures of absenteeism and intent to quit the organization were obtained, as were self-estimates of usefulness of one's job skills to other organizations and availability of equivalent jobs in other organizations. These measures enable comparisons of job satisfaction and commitment levels with some of the attitudes, beliefs and behaviors that have frequently been associated with satisfaction and/or commitment in other research. Table B-6 lists correlation coefficients and significance levels for these measures, job satisfaction, and commitment.

In agreement with the general body of literature on turnover, both commitment and job satisfaction were significantly related to intent to quit the organization. Commitment correlated -.51 (26% common variance) with intent to quit, while job satisfaction correlated -.45 (20% common variance). The difference between these two correlations was significant ($t = 3.5$, $p < .001$).

Job satisfaction and commitment were correlated .76 (58% common variance). Mowday, et al. (1978) had reported correlations between employee commitment and intent to quit ranging from -.31 to -.63, in four occupational groups. Correlations between commitment and job satisfaction, as reported by Mowday, et al. (1978), had been lower than that found in the present study, ranging from .01 to .68 with a median of .41. However, Mowday, et al. took, as their job satisfaction measures, the five separate subscales of the job Description Index (Smith, et al., 1969), rather than the MSQ general satisfaction score used in the present study These alternative approaches may not be entirely comparable.

TABLE B-6

JOB SATISFACTION DIFFERENCES & PERSONAL FACTORS

Personal Variable	Relationship	Significance
Age:	r = .18	p < .001
Sex:	Female = 4.98 Male = 4.77	p < .02
Education:	Some Elementary = 5.50 Compl. Elementary = 5.24 Some H.S. = 5.14 Compl. H.S. = 4.88 Some College = 4.75 Compl. College = 4.55 Some Graduate Ed. = 4.44 Graduate Degree = 3.90	p < .0001
Socialization Environment:	Farm or Ranch = 5.07 Rural Area = 4.85 Suburb = 4.65 Small City = 4.80 Large City = 4.80	p < .03
Marital Status:	Married = 4.86 Single = 4.73	p < .07
Income is Primary Family Support?	No = 4.94 Yes = 4.78	p < .07
Racial/Ethnic	Black = 4.66 Oriental = 4.57 Amer. Indian = 5.15 Span. Surname = 4.76 White = 4.87	p < .09

TABLE B-7

DIFFERENCES IN ORGANIZATIONAL COMMITMENT AND PERSONAL FACTORS

Personal Variable	Relationship	Significance
Age	r = .17	p < .001
Sex	Female = 4.75 Male = 4.44	p < .0003
Education	Some Elementary = 5.44 Compl. Elementary = 4.82 Some H.S. = 4.80 Compl. H.S. = 4.54 Some College = 4.46 Compl. College = 4.13 Some Graduate Ed. = 4.16 Graduate Degree = 3.75	p < .0001
Income is Primary Family Support?	No = 4.64 Yes = 4.47	p < .06
Racial/Ethnic	Black = 4.41 Oriental = 4.60 Amer. Indian = 4.78 Span. Surname = 4.30 White = 4.56	p < .09

TABLE B-8

CORRELATION MATRIX: JOB SATISFACTION, COMMITMENT, ABSENTEEISM, INTENT TO QUIT AND PERCEIVED JOB ALTERNATIVES

	1	2	3	4	5	6	7	8	9	10
Job Satisfaction:										
1. (overall)	1	.93	.90	.76	.76	.50	-.10	-.45	-.13	.23
2. (intrinsic)		1	.68	.67	.69	.45	-.09	-.46	-.08	.29
3. (extrinsic)			1	.72	.70	.49	-.09	-.36	-.17	.13
Commitment										
4. (overall)				1	.94	.80	-.09	-.51	-.18	.19
5. (value)					1	.57	-.10	-.50	-.15	.19
6. (membership)						1	-.06	-.38	-.19	.13
7. Absences							1	.03	.01	.00
8. Intent to Quit								1	.18	-.18
9. Perceived Job Alternatives									1	.16
10. Skill Usefulness to Other Organizations										1

Notes: Correlations $> \pm .08$, $p < .001$
Correlations $> \pm .06$, $p < .01$
Correlations $< \pm .04$, $p > .05$

In order to assess the degree of redundancy between job satisfaction and commitment, partial correlations of each with turnover (i.e. self report intent to quit) were computed, with the other treated as the covariate. With job satisfaction partialled out, the correlation between commitment and turnover dropped from -.51 to -.29. Explained variance thus dropped from 26% to 8%. On the other hand, the correlation between job satisfaction and turnover, with commitment partialled out dropped from -.45 to -.12. In this case, explained variance dropped from 20% to 1%. In terms of the partial correlations, commitment holds a substantial advantage over job satisfaction as a co-variate of turnover.

Two additional points bear emphasis. As Table B-8 indicates, intrinsic job satisfaction is more highly correlated with turnover (i.e. intent to quit) than is extrinsic job satisfaction ($t = 4.82$, $p < .001$). Secondly, membership commitment is less highly correlated with the same turnover measure than is value commitment ($t = 5.15$, $p < .001$).

The antecedents of commitment. Multiple regression analysis was used to assess the relative power of structural factors and satisfaction to account for variance in organizational commitment. Eight structural factors were selected as having the potential to contribute to investments or "side bets" either directly or indirectly. These were: educational level, marital status, tenure in the organization, sex, breadwinner status, age, perceived job alternatives, and perceived usefulness of job skills to other organizations. These eight factors were entered in regression equations as independent variables to predict organizational commitment, as well as each of the two commitment factors, value commitment and membership commitment. Table B-9 summarizes those regression analyses.

The structural variables, age, perceived job alternatives, usefulness of job skills, and tenure in the organization stood out as relatively powerful structural correlates of commitment. A surprising finding was that usefulness of job skills to other organizations was related to commitment in the opposite direction to that predicted by structural commitment theory (e.g., Becker, 1960). In the present findings, the more one's job skills were believed to be of use to other organizations, the more committed the employee to the present organization.

Marital status and breadwinner status had virtually no impact on commitment, and educational level had negligible impact on membership commitment. Total variance explained for commitment was a modest 12 percent and, for membership commitment, an even lower seven percent.

TABLE B-9

MULTIPLE REGRESSION ANALYSIS: COMMITMENT AND STRUCTURAL VARIABLES

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Organizational Commitment	Sex	-.082	.0092	**7.13
	Education	-.074	.0261	*6.16
	Marital Status	.011	.0296	.13
	Tenure	.169	.0307	***24.37
	Breadwinner Status	-.020	.0318	.46
	Age	.204	.0637	***35.24
	Perceived Job Alternatives	-.203	.0898	***47.53
	Skill Usefulness	.192	.1246	***43.75
Value Commitment	Sex	-.070	.0070	*5.24
	Education	-.111	.0333	***13.67
	Marital Status	.001	.0356	.00
	Tenure	.174	.0370	***25.62
	Breadwinner Status	-.014	.0377	.22
	Age	.213	.0722	***38.26
	Perceived Job Alternatives	-.172	.0897	***33.94
	Skill Usefulness	.188	.1230	***41.92
Membership Commitment	Sex	-.088	.0096	**7.75
	Education	-.008	.0123	.08
	Marital Status	.027	.0151	.75
	Tenure	.099	.0154	*7.91
	Breadwinner Status	.002	.0154	.01
	Age	.093	.0227	**6.97
	Perceived Job Alternatives	-.207	.0525	***46.68
	Skill Usefulness	.153	.0747	***26.37

* $P < .05$
** $P < .01$
*** $P < .001$

Multiple regression analyses were also performed, using the 20 job satisfaction factors as independent variables. Tables B-10, B-11 and B-12 contain the results of those analyses.

The 20 job satisfaction factors accounted for nearly five times the variance in commitment as did the eight structural variables, both for generalized organizational commitment and each of the two commitment factors (i.e., value commitment and membership commitment). As was the case with the regressions on structural variables, variance accounted for in both overall commitment and value commitment was nearly twice as great as variance accounted for in membership commitment.

For overall commitment, supervision-human relations was the most potent job satisfaction factor in explaining variance. Other salient factors included company policies and practices, achievement, social status, and working conditions. Except for working conditions, this cluster of factors was also salient for value commitment, although their order of precedence was altered. The configuration of the top 4 factors relative to value commitment was somewhat different, consisting of supervision-human relations, advancement, supervision-technical, and security.

Examination of Tables B-10, B-11, and B-12 discloses a preponderance of extrinsic job factors among those accounting for relatively large amounts of variance in commitment, while the intrinsic factors seem to predominate among the factors having little apparent impact on commitment. This counterintuitive finding led to a second set of multiple regression analyses, using intrinsic job satisfaction and extrinsic job satisfaction as the two independent variables. These analyses are presented in Table B 13. In all instances, extrinsic job satisfaction appears to have a more powerful association with commitment than does intrinsic satisfaction. As in previous analyses, membership commitment is not "predicted" as well by the set of independent variables as are value commitment and overall commitment.

In an effort to ascertain whether the structural variables and job satisfaction are redundant in their relationship to commitment or, alternately, whether they each account for unique portions of variance, regression analyses were conducted using all eight structural variables, plus job satisfaction as independent variables The first of these analyses is shown in Table B-14.

TABLE B-10

MULTIPLE REGRESSION ANALYSIS: ORGANIZATIONAL COMMITMENT AND JOB SATISFACTION FACTORS

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Organizational Commitment	Activity	.056	.1474	*6.57
	Independence	-.006	.1662	.07
	Variety	-.007	.2146	.09
	Social Status	.104	.3204	***15.53
	Supervision - Human Relations	.151	.4876	***22.79
	Supervision - Technical	.099	.5026	**10.03
	Moral Values	.031	.5207	1.64
	Security	.057	.5311	**6.76
	Social Service	.085	.5425	***12.73
	Authority	-.021	.5428	.81
	Ability Utilization	.074	.5553	**6.71
	Company Policies & Practices	.122	.5724	***19.22
	Compensation	.086	.5846	***14.15
	Advancement	.088	.5912	***11.96
	Responsibility	.003	.5915	.01
	Creativity	.006	.5918	.05
	Working Conditions	.104	.5980	***15.42
	Co-workers	.006	.5981	.09
	Recognition	.000	.5985	.00
	Achievement	.123	.6052	***18.26

* P < .05
** P < .01
*** P < .001

TABLE B-11

MULTIPLE REGRESSION ANALYSIS: VALUE COMMITMENT AND JOB SATISFACTION FACTORS

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Value Commitment	Activity	.052	.1485	*5.47
	Independence	-.002	.1675	.01
	Variety	.003	.2238	.02
	Social Status	.107	.3372	***16.05
	Supervision - Human Relations	.105	.4739	**10.75
	Supervision - Technical	.094	.4924	**8.76
	Moral Values	.036	.5077	2.17
	Security	.038	.5151	3.23
	Social Service	.080	.5283	***10.91
	Authority	.007	.5298	.09
	Ability Utilization	.079	.5444	**7.43
	Company Policies & Practices	.131	.5633	***21.78
	Compensation	.095	.5759	***16.91
	Advancement	.068	.5806	**7.06
	Responsibility	-.027	.5806	.75
	Creativity	.022	.5816	.52
	Working Conditions	.079	.5857	**8.80
	Co-workers	.023	.5865	1.18
	Recognition	.032	.5889	1.45
	Achievement	.155	.5994	***28.59

* $P < .05$
** $P < .01$
*** $P < .001$

TABLE B-12

MULTIPLE REGRESSION ANALYSIS: MEMBERSHIP COMMITMENT AND JOB SATISFACTION FACTORS

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Membership Commitment	Activity	.050	.0754	3.00
	Independence	-.008	.0867	.07
	Variety	-.015	.1065	.23
	Social Status	.073	.1501	*4.37
	Supervision Human Relations	.161	.2447	***14.87
	Supervision Technical	.079	.2524	3.67
	Moral Values	.023	.2601	.52
	Security	.074	.2712	*6.44
	Social Service	.065	.2752	*4.22
	Authority	-.069	.2766	*5.16
	Ability Utilization	.062	.2831	2.66
	Company Policies & Practices	.007	.2843	.03
	Compensation	.065	.2929	*4.65
	Advancement	.114	.3016	***11.56
	Responsibility	.065	.3032	2.53
	Creativity	-.027	.3034	.46
	Working Conditions	.104	.3087	**8.81
	Co-workers	-.019	.3089	.48
	Recognition	-.073	.3109	*4.41
	Achievement	.064	.3127	2.81

* P < .05
** P < .01
*** P < .001

TABLE B-13

MULTIPLE REGRESSION ANALYSIS: COMMITMENT
AND INTRINSIC VERSUS EXTRINSIC JOB SATISFACTION

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Organizational Commitment	Intrinsic Satisfaction	.345	.453	*180.16
	Extrinsic Satisfaction	.480	.575	*348.85
Value Commitment	Intrinsic Satisfaction	.391	.476	*232.74
	Extrinsic Satisfaction	.438	.579	*293.11
Membership Commitment	Intrinsic Satisfaction	.216	.199	*40.45
	Extrinsic Satisfaction	.337	.260	*98.52

* $P < .001$

TABLE B-14

MULTIPLE REGRESSION ANALYSIS: COMMITMENT
AND STRUCTURAL VARIABLES PLUS 20 TOTAL SATISFACTION FACTORS

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Organizational Commitment	Sex	-.039	.0083	3.25
	Education	-.015	.0207	.47
	Marital Status	.018	.0242	.66
	Tenure	.086	.0257	***12.47
	Breadwinner Status	.016	.0264	.58
	Age	.051	.0561	*4.28
	Perceived Job Alternatives	-.079	.0831	***13.54
	Skill Usefulness	.042	.1235	*3.82
	Activity	.047	.2191	*4.33
	Independence	.009	.2397	.14
	Variety	-.007	.2765	.09
	Social Status	.106	.3599	***14.49
	Supervision Human Relations	.137	.5024	***17.78
	Supervision Technical	.095	.5197	**8.53
	Moral Values	.038	.5352	2.22
	Security	.051	.5440	*4.92
	Social Service	.084	.5544	***11.82
	Authority	-.014	.5548	.34
	Ability Utilization	.060	.5645	*3.96
	Company Policies & Practices	.113	.5798	***15.76
	Compensation	.085	.5913	***11.97
	Advancement	.083	.5971	**9.62
	Responsibility	.004	.5974	.02
	Creativity	.000	.5976	.00
	Working Conditions	.111	.6047	***16.59
	Co-workers	.014	.6050	.42
	Recognition	.006	.6056	.05
	Achievement	.114	.6112	***14.55

* P < .05
** P < .01
*** P < .001

Adding the eight structural variables to the 20 job satisfaction factors adds less than one percent to the variance explained in overall commitment. Thus, there appears to be little commitment variance unique to structural "predictors." However, two structural variables (tenure and perceived job alternatives) related to commitment more strongly than 12 of the job satisfaction factors.

A second approach was taken toward sorting out the unique proportions of commitment variance explained by structural factors vs. job satisfaction. This was done in an attempt to avoid common-method problems that might have contributed to a spuriously high relationship between questionnaire measures of job satisfaction and commitment. This analysis substituted two proxy measures of job satisfaction, grievances and intent to quit, for the 20 self-report job satisfaction factors. Multiple regression analysis employed the two job satisfaction proxies plus the eight structural variables as independent variables, and commitment as the independent variable. Results of this analysis are summarized in Table B-15.

This multiple regression accounts for 34 percent of the variance in commitment, with 26 percent having been explained by the pair of job satisfaction proxies and only eight percent by the eight structural variables.[5]

Organizational level analyses. Employee job satisfaction and commitment scores were aggregated for each participating transit organization in order to determine the relationships between these employee attitudes and several attributes of the employing organizations. In particular, this analysis emphasized the relationships between commitment and job satisfaction, and several organizational-level variables that had been used as proxy measures of organizational effectiveness.

Full explication of the transit performance indicators utilized in this study is contained in Perry, et al. (1979). For ready reference, Table B-16 provides brief definitions of the indicators used in this study. The sample size listed with each indicator shows the number of participating transit properties for which that datum was available.

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[5]An additional regression analysis was conducted using the eight structural variables to predict organizational commitment, while holding the overall level of job satisfaction constant. The aggregate of the structural variables explained five percent of the variance in commitment, in this analysis. This is compared to the 12 percent of commitment variance explained by these structural variables, without controlling for overall job satisfaction.

TABLE B-15

MULTIPLE REGRESSION ANALYSIS: COMMITMENT
AND STRUCTURAL VARIABLES, PLUS JOB SATISFACTION PROXIES

Dependent Variable	Independent Variables	Standardized Coefficients	Cumulative R Square	F - Ratio
Organizational Commitment	Sex	-.076	.0097	**6.80
	Education	-.039	.0273	1.88
	Marital Status	-.022	.0288	.59
	Tenure	.161	.0292	***23.14
	Breadwinner Status	-.014	.0293	.24
	Age	.017	.0534	.23
	Perceived Job Alternatives	-.140	.0676	***24.69
	Skill Usefulness	.115	.0801	***17.28
	@ Intent to Quit	-.483	.3184	***259.14
	@ Filed Grievance in Past 2 Years?	.148	.3399	***30.20

@ Job Satisfaction Proxies

* P < .05
** P < .01
*** P < .001

TABLE B-16

TRANSIT PERFORMANCE INDICATORS

Indicator	Definition
Adaptability (TM) (N = 24)	Transit managers' responses to the aggregate of 4 questions, re. their transit organization's adaptability, adapted from Mott (1972)
Adaptability (E) (N = 24)	Transit employees' responses to the identical set of questions used for Adaptability (TM)
Absenteeism (N = 24)	Employee questionnaire responses to the single question "How many workdays were you absent from work in the last year (do not count vacation)?"
Intent to Quit (N = 24)	Employee questionnaire responses to the single question "What are your plans for staying with this organization?" Response options were: 1. I intend to stay until I retire. 2. I will leave only if an exceptional opportunity turns up. 3. I will leave if something better turns up. 4. I intend to leave as soon as possible.
Separation Rate (N = 24)	Voluntary turnover (excluding retirements) divided by mean number of employees during fiscal year 1976-77.
Stability Rate (N = 20)	Number of employees having organizational tenure of 5 years or longer, divided by total number of employees (non-managerial, only).
Tardiness (N = 24)	Ratio of the number of tardiness incidents to the mean number of employees during fiscal year 1976-77.

TABLE B-16 - continued

TRANSIT PERFORMANCE INDICATORS

Indicator	Definit
Operating Expense per Revenue Vehicle Hour (N = 22)	Total operating ... fiscal year 1976-77, divided ... total revenue vehicle hours during that period.
Operating Expense per Employee (N = 20)	Total operating expense for fiscal year 1976-77, divided by mean number of employees during that period.

cional analysis was the principal method used to assess organiza-
el relationships. Pearson correlation coefficients were computed
pairs of variables in which both marginal distributions appeared to
the important data assumptions, i.e. were symmetrical and unimodal
uilford, 1965). However, several variables were skewed, and some of these drastically so. Accordingly, nonparametric (Spearman) correlations were substituted for Pearson correlations wherever necessitated by the data. Intercorrelations among the transit performance indicators are provided in Table B-17.

The variables in Table B-17 were measured at the organizational level. Thus, all the self-report measures are average responses to questionnaires, within each transit operation. Sample sizes, therefore are not large, as can be seen in Table B-16. This results in modest levels of statistical significance, even where correlations are substantial. Sample size for the tardiness measure was particularly small (N-14).

The nine indicators actually represent three aspects of organizational effectiveness, as modelled by Perry, et al. (1979); service efficiency (operating expense per revenue vehicle hour and per employee); employee withdrawal (measures of absenteeism, turnover and tardiness); and organizational adaptability (manager and employee perceptions). Both within and between categories, several of the correlations fell well below statistical significance.

Two aspects of the intercorrelations shown in Table B-17 bear emphasis. The correlation between transit managers' and transit employees' perceptions of organizational adaptability was a surprisingly low .23. It appears that the two groups may have used different criteria by which to make their judgments.

Secondly, the intercorrelations between various measures of employee withdrawal indicate that "withdrawal" is not a unitary phenomenon. In particular, absenteeism is negatively correlated with the two more immediate measures of turnover (i.e., intent to quit and separation rate). This disparity is not unique to the present study (cf. Price, 1977). There is ample evidence that these two behaviors differ with respect to their proximate causes as well as their impacts on organizations (Jeswald, 1974; Porter & Steers, 1973).

The low intercorrelations between some pairs of performance indicators is reflected in the pattern of correlations between the indicators and both commitment and job satisfaction (Table B-18). Again, small sample size resulted in low statistical significance, except where correlations were rather large. This is particularly evident for the correlations with

TABLE B-17

INTERCORRELATIONS AMONG TRANSIT PERFORMANCE INDICATORS

(Pearson correlation coefficients are underlined; all others are Spearman rho)

		1	2	3	4	5	6	7	8	9
1.	Adaptability (TM)	1	.23	.11	-.08	-.04	-.31	-.16	-.19	-.32
2.	Adaptability (E)		1	-.16	-.48**	-.26	-.14	-.53*	-.19	-.18
3.	Absenteeism			1	-.25	-.26	.48*	.37	.50*	.67***
4.	Intent to Quit				1	.64	-.31	.48*	.14	.02
5.	Separation Rate					1	-.44*	.05	-.15	-.05
6.	Stability Rate						1	.26	.54*	.55*
7.	Tardiness							1	.42	.43
8.	Operating Expense/ Revenue Vehicle Hour								1	.43*
9.	Operating expense/ Employee									1

* P < .05
** P < .01
*** P < .001

TABLE B-18

CORRELATIONS BETWEEN TRANSIT PERFORMANCE INDICATORS AND (AGGREGATED) COMMITMENT AND JOB SATISFACTION

(Pearson correlation coefficients are underlined; all others are Spearman rho)

Performance Indicator	Commitment	Job Satisfaction
Adaptability (TM)	.16	.18
Adaptability (E)	.75***	.57**
Absenteeism	.05	.22
Intent to Quit	-.65***	-.69***
Separation Rate	-.48**	-.40*
Stability Rate	.07	.02
Tardiness	-.48*	-.58*
Operating Expense/ Revenue Vehicle Hour	-.28	-.37
Operating Expense/ Employee	-.21	.13

* P < .05
** P < .01
*** P < .001

tardiness.

Commitment and job satisfaction were strongly related to organizational adaptability, as seen by transit employees [$r = .75$ ($p < .001$) and $r = .57$ ($p < .01$), respectively]. On the other hand, there was little relationship between these measures and adaptability as seen by transit managers. This disparity is consistent with the low correlation (.23) between the two adaptability measures (Table B-17). It may also be the result of common-methods bias, since the employee adaptability, commitment, and job satisfaction scores were derived from the same questionnaire.

The measures of service efficiency were not significantly related either to commitment or job satisfaction. Also unrelated were the "participation" measures, absenteeism and stability rate.

Short-term turnover, as measured by self-report and by single-year archival data (i.e. separation rate), was significantly related to both commitment and job satisfaction. In contrast to the individual-level data (Table B-8), the self-report measure of tornover did <u>not</u> relate more strongly to commitment than to job satisfaction ($\underline{t} < 1.0$, n.s.).

The two commitment factors, value commitment and membership commitment, related differently to several transit performance indicators, as shown in Table B-19. Adaptability (E) and both operating expense ratios were correlated more highly with value commitment than with membership commitment. Absenteeism showed a nonsignificant negative correlation with value commitment and a nonsignificant positive correlation with membership commitment. The difference was significant ($P = <.05$), with the direction of the difference indicating that value commitment is related to lower absenteeism than is membership commitment.

The directional trend for all three turnover measures showed membership commitment to be associated with lower turnover than was value commitment, however, only one turnover measure, separation rate, showed a significant difference ($p < .10$) and the level of significance was below traditional criteria.

In the aggregate, the pattern of results in Table B-19 is striking. Low organizational turnover seems principally related to membership commitment while measures of adaptability (from employees' perspective) and service efficiency are more closely related to value commitment. This rather consistent configuration lends support to the construct validity of value commitment and membership commitment.

TABLE B-19

CORRELATIONS BETWEEN (AGGREGATED) VALUE COMMITMENT AND MEMBERSHIP COMMITMENT, AND TRANSIT PERFORMANCE INDICATORS

(Pearson correlation coefficients are underlined; others are Spearman rho)

Performance Indicator	Value Commitment	Membership Commitment	Absolute Difference
Adaptability (TM)	.15	.17	.02
Adaptability (E)	.80***	.59****	.21** (t_{21} = 2.64)
Absenteeism	-.03	.23	.26** (t_{21} = 2.47)
Intent to Quit	-.60****	-.74****	.14 (t_{21} = 1.53)
Separation Rate	-.44**	-.64****	.20* (t_{21} = 1.96)
Stability Rate	.00	.17	.17
Tardiness	-.46*	-.35	.11
Operating Expense/ Revenue Vehicle Hour	-.34*	-.06	.28** (t_{17} = 2.15)
Operating Expense/ Employee	-.35*	.05	.40*** (t_{16} = 3.45

* P < .10
** P < .05
*** P < .01
**** P < .001 (all t tests, 2-tailed)

Table B-20 contains correlations between the set of transit performance indicators and intrinsic and extrinsic job satisfaction. In the only instance in which intrinsic and extrinsic job satisfaction relate differentially to a performance indicator (adaptability), the level of significance is low ($p < .10$). In this instance, extrinsic satisfaction is the stronger correlate of adaptability. The relationships with respect to tardiness and the two measures of service efficiency are suggestive, but fall far short of statistical significance.

DISCUSSION

EMPLOYEE COMMITMENT IN PUBLIC TRANSIT ORGANIZATIONS

Lower-level employees in public transit organizations do develop psychological bonds to their transit organizations, and these individual-organization linkages appear to have important implications for transit organization effectiveness. Mayntz (1970) had been explicit in denying the likelihood of commitment to, or identification with, formal organizations, on the part of lower-ranking organizational members. Two basic reasons were cited. First, because subordinate roles in organizations are highly specific and "programmed," they offer little basis for a positive self-image. This was said to lead to work roles' being seen as intrinsically unattractive and therefore pursued mainly for their instrumental payoffs.

Secondly, the individual in the subordinate role is seldom afforded the opportunity to make personal decisions about either the organizational purposes toward which he/she contributes, or the means used to attain those goals. The choice is only whether to comply or to refuse compliance. Thus, the employee feels little "ownership" or responsibility for his/her actions in terms of organizational outcomes.

In a comparison of public and private sector managers, Buchanan (1974a, 1974b, 1975) isolated personal significance reinforcement as a prime determinant of managers' commitment to their organizations. In effect, "...managers who feel they work they do makes real contributions to organizational success are more likely to develop commitment than those who lack this feeling" (Buchanan, 1974b, p. 341). Buchanan (1975) cited "goal crispness" as one factor leading to higher commitment in private, goal-oriented organizations, than in public agencies where individual contributions to ultimate goals were less visible.

TABLE B-20

CORRELATIONS BETWEEN (AGGREGATED) INTRINSIC/EXTRINSIC JOB SATISFACTION AND TRANSIT PERFORMANCE INDICATORS

(Pearson correlation coefficients are underlined; all others are Spearman rho)

Performance Indicator	Intrinsic Satisfaction	Extrinsic Satisfaction	Absolute Difference
Adaptability (TM)	.11	.22	.11
Adaptability (E)	.36**	.64****	.28* (t_{21} = 1.75)
Absenteeism	.20	.09	.11
Intent to Quit	-.61****	-.60****	.01
Separation Rate	-.32*	-.38**	.06
Stability Rate	-.11	.08	.19
Tardiness	-.67	-.32	.35 (t_{10} = 1.56)
Operating Expense/ Revenue Vehicle Hour	-.53***	-.25	.28 (t_{17} = 1.42)
Operating Expense/ Employee	.19	-.14	.33 (t_{16} = 1.47)

* $p < .10$
** $p < .05$
*** $p < .01$
**** $p < .001$ (all t tests, 2-tailed)

One possible reconciliation of such views as those of Mayntz and Buchanan, with the present study's finding that many transit employees seem to be committed to their organizations, may lie in the basic nature of lower-level work in public transit. Although other categories of transit employee were included, the principal focus of the study was on the transit operator. More than 90 percent of the non-supervisory participants were transit operators.

By contrast to the routinized, over-supervised nature of lower-level organizational work, as characterized by Mayntz (1970), the transit operator performs, within general limits, as a relatively antonomous agent of the organization. He or she is what Adams (1976) called an organizational boundary-role person. To the individual passenger, the operator is the transit organization, and the operator seems aware of this. The specific job factor satisfaction means in Table B-5 indicate that such job aspects as independence, variety, authority and responsibility are relatively well-satisfied among transit operators. Furthermore, except for responsibility, there is less variability in satisfaction with these factors than with the great majority of other factors (Table B-5).

If Mayntz (1970) and Buchanan (1974a) are correct in their assertion that something akin to personal significance reinforcement is a prime determinant of organizational commitment, one would expect such factors as independence, variety, responsibility and authority to be salient in a multiple regression of MSQ job factors on organizational commitment. Examination of Table B-10, however, shows that such is not the case. On the contrary, these four factors are prominent by their lack of salience. Standardized regression coefficients are, for all practical purposes, zero.

It appears then either that Mayntz's emphasis on unprogrammed jobs and decentralized authority as necessary conditions underlying organizational commitment is invalid, or that the relatively high satisfaction levels and limited variance in the sample of transit employees have somehow masked the effect, thereby allowing other job factors to assume preeminence. It may be that the job aspects related to employees' identification of personal performance with organizational outcomes comprise a necessary but not sufficient condition for organizational commitment. Looked at in this way, these job factors may be tantamount, relative to commitment, to what

Herzberg and his co-workers called "hygienes"[6] (Herzberg, et al., 1959). The hygienic factors must be present (i.e. satisfied) in order for other factors to be able to positively influence satisfaction.

The multiple regression analysis (Table B-10) indicates that these "other" (i.e. influential) factors are largely those related to quality of supervision, organizational policies and practices, personal achievement, social status related to the job, compensation, advancement and working conditions. Unlike the former, nonsalient set of job factors. most of the salient factors are clearly extrinsic, in nature.

The implications for transit management are interesting. The factors that appear not to differentiate committed from uncommitted employees seem to be automatic aspects of the transit operator's job., i.e. resident in the nature of the work itself, and largely outside the control of the organization. Unless extraordinary measures were to be taken by management to modify the way mass transit operations are conducted, the transit operator's job will characteristically be high in those job aspects. On the other hand, several of the job factors that do appear to relate directly to commitment are subject to considerable variability, from job-to-job, depending on the way the transit organization treates its employees. For the most part, these controllable job aspects relate to supervision (both technical and interpersonal), company policies and practices, working conditions, promotion practices and wages and benefits.

Wages and benefits represent the only relevant controllabe factor for which this study's transit employees appear relatively well satisfied. The other five factors are among the seven lowest job satisfaction scores for transit operators (Table B-5). Clearly, there is room for improvement in areas that could have significant organizational payoffs in terms of employee commitment.

Besides the job satisfaction factors, this study investigated a second broad category--structural factors--as potential contributors to employee commitment to their transit organization. While the eight factors chosen

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[6]Herzberg's "hygienes" related to job satisfaction, not commitment. Interestingly, the four factors herein proposed as commitment hygienes are all intrinsic, in nature, while for Herzberg it was extrinsic, not intrinsic, factors that were considered hygienes.

for this study do not exhaust the potential list of structural factors, it is a reasonably inclusive set and includes the two factors (age and length of service) that seem to have appeared most often in other studies of the structural determinants of commitment.

By and large, the structural factors included in this study are beyond the direct control of the organization. Rather than being influenced by the way the organization treats the employee, many structural factors are under organizational control only to the extent the organization controls whom it selects for membership.

The obvious exceptions to the above generalization are tenure and perceived skill usefulness to other organizations. The organization can exercise certain options regarding personnel retention policies and practices as well as the extent to which employee training and development programs equip employees to go to work for a competitor. Even here, however, organizational options are severely constrained. Provided that performance is not clearly unsatisfactory, it is the employee, rather than the organization, who largely controls the length of service. This generalization seems particularly valid in the organized-labor environment in which the present study was conducted.

Secondly, the transferability of job skills seems more a function of the nature of the job and its similarity to jobs in nearby organizations (as well as local economic conditions), than a matter subject to control by the organization. After all, the organization has little choice but to staff its job positions with employees capable of at least minimal job competence. In essence, then, the structural factors relate to the characteristics that employees bring to the organization, and what they do, rather than what happens to them (cf. Porter & Miles, 1974).

The eight structural variables selected for this study did account for a modest amount of variance in organizational commitment (12.46%, Table B-9). There were some surprises, however, in the data relating personal/structural factors to commitment in Tables B-7 and B-8.

Sex of the employee related significantly to commitment, with women more committed to the organization than their male counterparts. This finding is at variance with conventional wisdom. Historically, women have been considered less involved than men in their work (Department of Health, Education and Welfare, 1973; Hearn & Stoll, 1975; March & Simon, 1958; Taveggia & Ziemba, 1978). A frequent argument encountered in the above-cited literature is that it is the essentially menial nature of the jobs

that women hold that underlies their lack of work involvement. The job satisfaction findings of the present study, however, clearly suggest that women (as well as men) do not perceive transit jobs to be menial.

Rapid social change may also partially explain the reversal of past findings, with respect to women and work, encountered in the present study. The job of transit operator has been dominated in the past (though certainly not exclusively) by male employees. During the site visits for the present study, managers of several transit organizations noted a rapid increase in the number of female transit operators, both recent and projected. It may be that the arena of public transit, at the time in history in which the present occurred, represents an aspect of a social revolution, in which the relationships between women and work organizations are changing.

A second surprise in the present study's findings was that the relationship between perceived usefulness of job skills and commitment was in a direction opposite to that expected with respect to structural commitment theories. Rather than being less bound to their present organization, employees who believed their job skills would be useful to other organizations were more highly committed to their present organization. This finding appears to strike a blow at the "side bet" notions of Becker (1970) and others, who would certainly have predicted the opposite. The costs of leaving an organization, all else being equal, would seem higher to someone unable to "take it with him." Perhaps the present finding is indicative of employee gratitude to the organization for having provided her or him with a valuable job skill. This finding might also reflect a tendency for employees with few job skills useful to other organizations to "rationalize" their attitudes. Thus, employees with no choice but to stay with the transit organization develop beliefs, over time, that their skills are useful in other organizations. At this point, of course, such notions are pure conjecture.

Other findings relative to the structural variables were quite conventional. As expected, age, perceived job alternatives, tenure and education level were significantly related to commitment, in ways consistent with the general body of commitment research.

One other finding merits comment. In Table B-9 it is seen that "side bets" account for more variance in the factor "value commitment" (12.3%)

than in the factor "membership commitment" (7.5%). This finding is noteworthy because membership commitment is tantamount to continuance commitment and it is continuance commitment that Becker's (1970) theory addresses (Stebbins, 1970). With the present data, a rather weak case, at best, can be made for structural factors as antecedents of membership or continuance commitment.

In the aggregate, the amount of variance in overall commitment, or in either commitment factor, associated with the structural variables was unimpressive, when compared with the commitment variance associated with job satisfaction. This should not, however, be interpreted as evidence that commitment has not structural antecedents. On the contrary, by behavioral science standards, 12 percent of the variance explained is a fairly respectable figure.

In part, the research methodology may have tended to "stack the deck" in favor of job satisfaction in the search for commitment antecedents. In the first place, the 20 job-satisfaction factors were intended to be seen, by the respondents, purely as non-structural. However, there are some factors (e.g., pay) which may actually be complex, having both structural and organizational reward connotations to the individual employee.[7] Thus the job satisfaction measures might have been slightly contaminated by structural factors.

It is also rather likely that common-method variance was responsible for some of the rather high correlations between job satisfaction and organizational commitment. Both were measured by questionnaires having considerable resemblance in style. However, it is unlikely that common-method variance tells the whole story.

The two factors that were selected as "proxies" for the questionnaire measure of job satisfaction were the only ones available among the study

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[7] Dilemmas of this sort have historically plagued job satisfaction research. For instance, Herzberg, et al. (1959) acknowledged that their "extrinsic" factor, pay, may be intrinsic to the employee who uses pay as an indicator of his/her worth. Nonetheless, beyond a certain point, the problem becomes metaphysical and the researcher has to settle for the best objective evidence at hand.

data, but we acknowledge that these were certainly inadequate to "capture" the essence of job satisfaction.[8] These were both self-report measures, but aimed at actual behavior rather than unverifiable attitudes. The two behaviors that they represent, filing a grievance and quitting, would, however, fail to capture the richness of job satisfaction, even were it is possible to devise perfect measures of these two behaviors. Even in view of the theoretical inadequacies of the two job satisfaction "proxies," they accounted for 26 percent more variance in commitment than the eight percent of variance uniquely explained by all the structural variables combined.

The employee's reaction to the way he or she is treated by the transit organization appears critical to his/her level of organizational commitment, and this holds true whether overall commitment is considered, or whether either of the two commitment factors (value commitment or membership commitment) is the focus. Treatment of employees is clearly reflected in their levels of extrinsic job satisfaction. Table B-8 shows that, while intrinsic satisfaction correlates well with commitment, extrinsic satisfaction has higher correlations with overall commitment and both commitment factors. The importance of extrinsic satisfaction is further borne out by the regression analysis in Table B-13. Job satisfaction, and particularly extrinsic job satisfaction, is a powerful co-variate of employee commitment to the work organization.

Job Satisfaction in Public Mass Transit

Although the research did not focus on job satisfaction, per se, the use of a standard job satisfaction instrument (MSQ) provided an opportunity not only to assess overall levels of satisfaction and satisfaction with several specific job factors, but also to compare those levels with measured satisfaction in other industries. Several points merit discussion.

As Table B-4 indicates, overall levels of job satisfaction are lower for transit employees than for five of the six comparative occupations. Within the transit industry, transit operators tend to be less satisfied than other non-supervisory transit personnel.

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[8] Job satisfaction correlated with intent to quit only -.45. The point-biserial correlation between whether or not a grievance was filed in the past 24 months and job satisfaction was only .24.

In Table B-5, it is seen that the differences between operator and non-operator job satisfaction is largely attributable to a small set of job factors. To a great extent, the pattern in Table B-5 verifies the subjective impressions that had been gained by the researchers during the site visits

Informal conversations with many bus operators had repeatedly highlighted the quality of supervision as a frequent irritant. This was manifest in two ways: (1) the tendency for supervisors to cut themselves off from informal communication with drivers (a situation sometimes aggravated by physical barriers such as glass partitions); and (2) a perceived tendency for some road supervisors to interpret their role as that of a disciplinarian rather than a helper. The factor "company policies and practices" was represented by a single question worded in such a way that we suspect it, too, reflects this general syndrome (See Attachment1).

Another general irritant that had been detected during field visits was a perceived lack of receptivity to drivers' suggestions for procedural improvements, accompanied by a lack of recognition feedback, whenever driver suggestions had been implemented. The driver/non-driver disparity, for the factor "recognition," seems wholly consistent with our earlier subjective impression.

The Complexity of Commitment

This study has presented evidence that commitment is not a unitary phenomenon, but is composed of at least two underlying factors. These factors were labelled value commitment and membership commitment.

Initial evidence was derived from a series of factor analyses which yielded a relatively strong first factor, along with at least one, somewhat less definite, additional factor. In the original three-factor solution (Table B-1) the eigenvalue for the second factor was 1.36. Factor analysis is not an entirely mechanical process and some analysts would not consider eigenvalues below 1.5 or perhaps even 2.0 to substantiate the existence of a valid factor. In the present study, however, the second factor was interpreted, having well exceeded the theoretical minimum eigenvalue of 1.00 suggested by Guttman (1956), Kaiser (1960, 1970)

and Nunnally (1978).[9]

One of the four criteria cited by Kaiser (1970) for selecting the optimal number of factors was that of psychological interpretability The interpretability criterion was particularly persuasive to the researchers in the present study. There is ample theoretical precedent for a distinction between one aspect of organizational commitment which is a sort of an affective bond with the organization, and a second aspect which is an instrumental reluctance to forfeit accrued value by leaving the organization.

A possible third factor was rejected for three reasons: (1) the eigenvalue was not greater than one, in any practical sense, but was almost exactly one; (2) there was only one item that loaded on that factor; and most important, (3) the third factor was not readily interpretable.

While value commitment and membership commitment are distinguishable the data also indicate considerable overlap between the two. Table B-8 shows that organizational commitment (overall) correlates .94 with value commitment and .80 with membership commitment. The two factors correlate .57 with each other indicating that they share 32 percent common variance.

Two possible contributors to this overlap are suggested. The first involves cognitive simplicity. Respondents may not be able to introspect accurately enough to make the fine discriminations necessary in order to respond reliably and differentially to a mixed set of questions on two conceptually similar themes. Respondents' general lack of facility in making such discriminations is commonly seen in the "halo effect" that plays havoc with efforts to obtain multi-dimensional employee performance ratings.

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[9]Kaiser (1960) compared two alternative decision rules proposed by Guttman (1956) for determining the appropriate number of factors and concluded that only one of Guttman's rules, i.e. selection of the set of factors having eigenvalues greater than one, met all important criteria. Kaiser's (1970) four bases of comparison were on grounds of statistical criteria of reliability and psychological criteria of meaningfulness. Assigning primary importance to the last two criteria, Kaiser stated that ...it is necessary and sufficient that the associated eigenvalue be greater than one--a finding corresponding exactly to Guttman's algebraic lower bound" (1960, p. 145). Kaiser also observed that, in his experience, the eigenvalue-greater-than-one criterion invariably led to the number of factors which psychologists were able to interpret.

Secondly, the two factors may actually be dependent, but assymetrically so. If an employee develops membership commitment to his/her organization, it seems reasonable that the attachment could be strictly instrumental, having no implications whatever for the development of any positive affective regard for the organization.[10] Looked at from the starting point of membership commitment, value commitment should be relatively independent.

If, on the other hand, an employee develops a positive affective bond with the organization, it is not logical to assume that he/she should be indifferent to leaving. Membership commitment must certainly follow closely after value commitment. Looked at in this way, although these two forms of commitment may be conceptually distinct they may not be empirically independent. Nevertheless, some rather striking differences in organizational outcomes were found, relative to value vs. membership commitment; differences which will be discussed in the following section.

Implications of Organizational Commitment for Public Transit Organizations.

Although the present study was structured in a way as to preclude the collection of objective performance data on an individual level, organizational performance data were obtained. This permitted the comparison of each transit property's performance, as measured by a set of performance indicators, with the aggregated levels of employee commitment in the organization.[11]

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[10]This is a position we would expect many social psychologists to dispute. Kiesler (1971) represents the social-psychological position well in asserting that behavior leads to re-evaluation of one's beliefs (and presumably one's values as well).

[11]It is acknowledged that this approach has its shortcomings. The richness of the data tends to become obscured in the aggregation process. For example, an organization in which half of the employees are totally committed and the other half totally alienated would appear much the same an another organization in which all employees' commitment is at a relatively moderate level. While we have no reason to suspect such anomalies in the present data, we are aware that relationships may have become somewhat distorted. Although it is ordinarily expected that relationships are attenuated in aggregated data, it is possible to go in the opposite direction, e.g. the correlation between intent to quit and job satisfaction was stronger for aggregated data (Table B-18) than for individual data (Table B-8). The most plausible reasons may be either (1) the suppression of extremely deviant cases, in data aggregation, which may have obscured relationships in the individual data, or (2) a more nearly linear relationship in the aggregated data.

Table B-18 compares aggregated organizational commitment with aggregated job satisfaction, as correlates of several measures of transit performance. In most instances, the differences are not great. Job satisfaction is nearly as strong a correlate of performance as commitment in most cases, and actually (marginally) better in four. An exception is operating expense per employee. Here, expense actually rises moderately with increasing job satisfaction, while it declines as expected, with increasing commitment.

In Table B-19, value commitment is contrasted with membership commitment. as correlates of the same performance indicators. With the exception of adaptability (M) (in which the difference was trivial but in the wrong direction) all the differences were in the direction that would have been predicted by theoretical notions of value and continuance (i.e., membership) commitment.[12]

All three measures of turnover tended to favor membership commitment over value commitment,[13] though only of of these measures was significant beyond the $p < .10$ level. These differences seem important, even without consideration of traditional significance levels, as do most of the differences for the other indicators, which favor value commitment. Although statistical significance is extremely sensitive to sample size, and is rather difficult to attain with sample sizes in the range of those used in the aggregated data, the consistent pattern of relationships in this study argues strongly against sampling error as the cause of these findings.

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[12]Note that all t tests were 2-tailed. One-tailed tests would have yielded higher levels of statistical significance, across-the-board. Two-tailed tests were used, not because directional hypotheses were inappropriate, but in the interest of conservatism.

[13]It will be noted that this holds true only for aggregated data. In the individual data (Table B-8) value commitment was more highly correlated with intent to quit and with absenteeism, as self-reported. This disparity points up the frequent non-comparability of individual-level and organizational-level analysis.

Finally, the relationships between employee attitudes and organizational performance constitute a "noisy system." It is not difficult to imagine many other influences on transit organization performance, which are independent of the attitudes of lower-level employees, simultaneously impacting the organization. Situational factors, as well as managerial differences, should logically be exerting their own influences on transit performance. The existence of differences as large as those shown in Table B-19, without having controlled for those other factors, seems noteworthy. This research has significantly extended earlier work by Mowday, et al. (1974) and by Wiener and Gechman (1977), that has shown organizational commitment to have important implications for performance.

Absenteeism, tardiness, adaptability (E) and both operating expense ratios seem conceptually closer to March and Simon's (1958) motivation to produce than the motivation to participate. Although they frequently have common roots, absenteeism and tardiness may be rather different behaviors from turnover (Hill & Trist, 1955; Muchinsky, 1977; Nicholson & Payne, 1978; Nicholson, Wall & Lischeron, 1977; Rice & Trist, 1952). The temporary withholding of one's services from the organization seems equivalent to malingering, rather than renunciation of organizational membership. Thus, we did not find it surprising that absenteeism correlated significantly with operating expenses (Table B-17,) or that both absenteeism's and tardiness' negative relationships with commitment seemed slightly more pronounced for value commitment than for membership commitment.

Perry, et al. (1979) had noted that transit employees and transit managers had differing perspectives on their organization's adaptability ($r = .23$). In the current study, using the same data, these differences were readily apparent in terms of the way the two measures of adaptability correlated with other variables. Much of the strength of the measured relationship of adaptability (E) with commitment can probably be attributed to non-independence of measures. While the strength of the overall relationship between adaptability (E) and commitment, and the direction of the value vs. membership commitment difference was consistent

with other measures, these in isolation would not be particularly persuasive. It would probably be best to reserve judgment in this area pending other, less method-dependent, research.

Results seem most impressive in the service efficiency measures, i.e. the two operating expense ratios. In the non-profit public sector, such ratios are very close to what might be considered a "bottom line." Here, the differences between value commitment and continuance commitment are significant, not only statistically, but practically speaking, as well. Organizations whose employees' commitment tends toward value commitment enjoy definite financial advantages over those whose employees' commitment is more instrumental in nature.

CONCLUSION

This study was undertaken to ascertain the usefulness of the concept of organizational commitment as pertains to lower-level employees in the public mass transit industry. It is concluded that employee commitment does indeed exist among transit operators as well as other public transit employees, and that such commitment makes a difference to the organization. At the organizational level of measurement, several performance indicators were shown to co-vary with concomitant levels of employee commitment.

This study, then, joins a small but growing body of research (cf. Mowday, et al.; 1974; Wiener & Gechman, 1977) that has found evidence that organizational commitment has important implications for worker motivation. In addition, this research has shown that commitment is at least a bidimensional construct, and that one dimension relates directly to the motivation to participate, while the other pertains to the motivation to produce (March & Simon, 1958). In a broad sense, then, it appears that an organization whose employees are committed is an effective organization.

The study has also presented evidence that transit employees' organizational commitment co-varies with several factors that are well within the capability of the transit organizations management to influence, such as organizational policies and practices, the quality of transit supervision, and several types of extrinsic rewards. At this point, however, it would seem appropriate to express the caveat that traditionally appears

in cross-sectional studies. The direction of causality is not firmly established by the data. For instance, we know that more effective organizations have more committed employees. What we don't know is whether employee commitment leads to higher effectiveness, employees become committed to organizations that they see as effective, or even whether some exogenous factor or factors is/are influencing both commitment and transit organization effectiveness. Equivalent concern could be expressed regarding the direction of the relationship between satisfaction and commitment.

Of course, a logical case has been made that organizational effectiveness is a result, rather than an antecedent of commitment, and the commitment is a result, rather than a precursor of job satisfaction. Based on our data and what appears to be sound theory, we see no reason to believe otherwise. Final verification of our belief, however, must await further research of experimental an/or longitudinal design, suited to test the causality of the relationships which this study has uncovered.

As a final word, organizational commitment has been presented implicitly in this research as something having positive social value. Within the middle range, we believe this to be so. In the context in which commitment has been presented, committed employees are not those who have been entrapped or exploited by their organizations, but tend to be fulfilled by their organizational participation--to meet some of their personal goals through helping the organization to meet its goals. In turn, organizations have been presented as more effective, to the extent that they can create and sustain commitment on the part of their members

One word of warning, however, seems in order. As Salancik (1977) put it, commitment is a strikingly powerful and subtle form of cooptation--of bringing the individual around to the point of view of the organization. Janis (1977), in describing the "groupthink" phenomenon, highlighted some of the dangers to organizational effectiveness of individuals' suspension of judgment in favor of the judgment of the collectivity.

In its most extreme form, this phenomenon of the suspension of individuality, in totally committed members, has been tragically demonstrated, recently, in the mass suicides enacted in a religious cult in Guyana (Kilduff & Javers, 1978). In more insidious forms, the phenomenon is

manifest in the behavior of the corporate executive who acts to the public detriment, suspending his own moral judgment in the interest of "what's best for the firm."

There are many roads to commitment. This study has touched on but two of the paths. It seems unlikely that the particular antecedents of commitment addressed in this study could lead to forms of commitment so extreme as to be dysfunctional for the individual or the organization. Yet, there may be more powerful techniques available to organizations; particularly in the framework of the social-psychological, or cognitive-consistency approach to commitment. Certain chains of employee behaviors can permanently alter their belief systems.

The ability to inculcate commitment on the part of one's employees is akin to a two-edged sword. Once again, to quote Salancik (1977a, p. 80), "The tools are there; use them as you will."

ATTACHMENT 1

COMMITMENT, JOB SATISFACTION AND ORGANIZATIONAL ADAPTABILITY MEASURES

Organizational Commitment Questionnaire (OCQ)

1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organization to be successful.

2. I talk up this organization to my friends as a great organization to work for.

3.* I feel very little loyalty to this organization.

4. I would accept almost any type of job assignment in order to keep working for this organization.

5. I find that my values and the organization's values are very similar.

6. I am proud to tell others that I am part of this organization.

7.* I could just as well be working for a different organization as long as the type of work were similar.

8. This organization really inspires the best in me in the way of job performance.

9.* It would take very little change in my present circumstances to cause me to leave this organization.

10. I am extremely glad I chose this organization to work for over others I was considering at the time I joined.

11.* There's not much to be gained by sticking with this organization indefinitely.

12.* Often, I find it difficult to agree with this organization's policies on important matters relating to its employees.

13. I really care about the fate of this organization.

14. For me, this is the best of all organizations for which to work.

15.* Deciding to work for this organization was a definite mistake on may part.

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* Reverse scored item

Minnesota Satisfaction Questionnaire (MSQ), Short form.

Job Factor	Item
1. Activity	Being able to keep busy all the time.
2. Independence	The chance to work alone on the job.
3. Variety	The chance to do different things from time to time.
4. Social Status	The chance to be "somebody" in the community.
5. Supervision: Human Relations	The way my boss handles his/her employees.
6. Supervision: Technical	The competence of my supervisor in making decisions.
7. Moral Values	Being able to do things that don't go against my conscience.
8. Security	The way my job provides for steady employment.
9. Social Service	The chance to do things for other people.
10. Authority	The chance to tell people what to do.
11. Ability Utilization	The chance to do something that makes use of my abilities.
12. Company Policies and Practices	The way organizational policies are put into practice.
13. Compensation	My pay and the amount of work I do.
14. Advancement	The chance for advancement on this job
15. Responsibility	The freedom to use my own judgment.
16. Creativity	The chance to try my own methods of doing the job.
17. Working Conditions	The working conditions.
18. Co-Workers	The way my co-workers get along with each other.
19. Recognition	The praise I get for doing a good job.
20. Achievement	The feeling of accomplishment I get from the job.

The following scales of the short-form MSQ consists of the following items:

Intrinsic: 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16, 17, 20
Extrinsic: 5, 6, 12, 13, 14, 19
General: All items

Organizational Adaptability

1. People in this organization do a good job anticipating problems.
2. People in this organization do a good job in keeping up with changes in new equipment and new ways of doing things.
3. When changes are made in routines and equipment, people adjust to these changes quickly.
4. People in this organization do a good job coping with emergency situations brought on by accidents, equipment and labor problems, or other factors that might cause temporary work overloads.

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APPENDIX C

EMPLOYEE TURNOVER AND ABSENTEEISM: IMPACT ON THE EFFECTIVENESS AND EFFICIENCY OF URBAN MASS TRANSIT

Dan R. Dalton
James L. Perry
Harold L. Angle

EXECUTIVE SUMMARY

Industrial psychology has attempted, for many years, to establish firm linkages between employees' job-related attitudes and their work behavior. Traditionally, the attitudinal focus of this effort has been job satisfaction. Recently, there has been a discernible shift of interest toward a related, yet distinguishable type of employee attitude--commitment to the work organization. Most research on commitment has been directed toward the managerial level of organizations. There have been few rank-and-file studies, fewer still in the public sector, and none in public mass transit. This study extends the concept of organizational commitment, by considering its nature, its causes, and its consequences for public mass transit organizations, with particular focus at the level of the transit operator.

NATURE OF THE RESEARCH

The study utilized standard measures of organizational commitment and job satisfaction, with 1224 lower-level employees (1093 bus operators) in 24 West Coast public transit organizations, in order to determine: (1) the viability of the concept of organizational commitment in this setting, and whether organizational commitment adds explanatory power beyond that provided by job satisfaction; (2) whether organizational commitment is a unitary concept or a composite of separate attitudes; (3) the personal and situational factors that lead to employee commitment; and (4) the consequences for transit organizations of having committed employees.

Analyses were conducted at two levels: individual and organizational. At the individual level, extent of commitment and job satisfaction were determined for public transit employees and compared with several other employee populations. The factor structure of organizational commitment was determined, and multiple regression was used to identify the relative contributions of a set of personal/structure variables and job satisfaction to commitment. The relationship of both commitment and satisfaction to self-reported behaviors and behavioral intentions was ascertained. The voluntary and anonymous nature of the research design precluded any individual-level comparison of organizational commitment with objective performance measures.

INTRODUCTION

Absenteeism and turnover have been the subject of managerial concern and extensive research over the years. These so-called "withdrawal" behaviors are "relatively clear cut acts...that have potentially critical consequences for both the person and for the organization" (Porter & Steers 1973, p. 151). This paper, which is divided into four sections, examines these potentially criticaly behaviors for several purposes.

Turnover, the subject of the first section, will be viewed within a cost-benefit perspective. Both the positive and negative ramifications of turnover will be carefully considered. The literature on turnover will be critically reviewed and the antecedents and/or determinants discussed at some length. Some models will be offered which reveal an interesting approach to employee turnover.

Absenteeism is the topic of the second section. Again, a cost-benefit perspective will be used whereby both the positive and negative implications of employee absenteeism are discussed. The literature in this area will be subjected to close scrutiny as well. This section will also examine why less is know about absenteeism than turnover.

The third section addresses three alternative formulations of the associations between absenteeism and turnover. For instance, do organizations characterized by frequent employee absenteeism suffer from excessive levels of turnover as well? As an alternative view, perhaps absenteeism is a coping behavior which serves as a mechanism limiting organizational turnover. While the former notion would treat absenteeism and turnover as positively related, the alternative view would posit a negative relationship between the two. Some employees may not especially like their jobs. However, because they have a certain flexibility with respect to their hours, (i.e., they "take off", call in sick, etc. as they wish) their jobs are tolerable. For such individuals, absenteeism is a mechanism which prevents turnover. Presumably, if stringent control procedures were adopted to limit absenteeism, these employees would leave the organization.

Lastly, although not as intuitively appealing as the others, a third possible relationship between turnover and absenteeism may be suggested. Absenteeism and turnover may be separate, distinguishable phenomena which are not related but are independent. The data collected in this investigation will be analyzed to determine which, if any, of these potential associations between absenteeism and turnover can be supported.

The concluding section considers the problem of controlling turnover and absenteeism in the organization. Is turnover subject to control? If so, should it be controlled? Is absenteeism subject to control? Under what circumstances? Appropriate literature will be reviewed which addresses these and related topics.

METHOD

Sample and Research Sites

This research was conducted as part of a larger study which investigated the impact of labor-management relations on productivity and efficiency in urban mass transit (Perry, Angle, & Pittel, 1979). Twenty eight transit properties were examined as part of this research.[1] Employee data were collected at twenty four properties. Archival and transit manager interview data were collected at all participating organizations.

In order to be considered for the employee survey, an organizational member had to be a member of the coach operator's bargaining unit. This restricted the survey sample primarily to coach operators (91%). However, in some cases mechanics and/or clerical personnel were members of the operator's bargaining unit. In such cases, these employees were included in the survey.

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[1]Actually, 28 properties originally agreed to participate. However, in two cases labor leaders did not allow the collection of data on employee attitudes. In two other instances, management preferred that rank and file employees not be surveyed. In each of these instances, the wishes of the parties were respected and these properties were not totally involved in the research project. Therefore, in only 24 properties were questionnaire data collected from rank and file employees.

Measures

Turnover. Two measures of turnover were collected at the participating sites. The first measure of turnover was collected from the archival records of the transit properties. The percentage of turnover was determined by a ratio of the number of employees who voluntarily left the organization to the number of total employees for the same period.

A second measure of turnover was obtained in those organizations (24) in which individual employees responded to questionnaires. This measure is referred to as "intent to remain."[2] The response to this question is often used as a measure of organizational turnover (Nichols. 1971; Mitchell & Albright, 1972; Mangione, 1973; Shenk & Wilbourn, 1971; Kraut, 1975; Atchison & Lefferts, 1972).

Absenteeism. Two measures were collected for this dimension. First, the archival records of the transit properties were examined and a ratio determined. The absence rate is defined as the ratio of total number of absent hours for all the operators to the total number of hours worked. It merely asked the following, "How many workdays were you absent from work in the last year (do not count vacation)?"

Demographic Characteristics. Demographic characteristics collected from the employee questionnaire were sex, educational level, marital status, tenure, age, and racial/ethnic background.

Efficiency and Effectiveness. Service efficiency was determined by three measures: revenue vehicle hours per driver hour, operating expense per employee, and operating expense per revenue vehicle hour. Service effectiveness was measured by passengers per service area population and passengers per revenue vehicle hour.[3]

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[2]The specific questionnaire item read: "What are your plans for staying with this organization?

1. I intend to stay until I retire.
2. I will leave only if an exceptional opportunity turns up.
3. I will leave if something better turns up.
4. I intend to leave as soon as possible."

[3]For a full explanation of these measures and their justification as legitimate measures of transit efficiency and effectiveness see Perry, et al., (1979).

Data Collection Procedures

Archival data were collected at the participating properties during the summer of 1977 by researchers associated with this study. These on-site visits ordinarily lasted for two days. Questionnaires were also distributed at this time. For the most part, questionnaires were returned to the researchers at the site. However, in some cases, it was necessary that questionnaires be returned by mail. In these cases, respondents were provided with pre-addressed and pre-stamped envelopes in which to return the questionnaire. The total number of questionnaires received from employees was 1244. This represents a 71% return rate on-site and a 32% rate by mail for a cumulative response rate of 64%. This is considered a good return rate for survey research (Babbie, 1973).

Probability sampling targets were established for the participating properties based on their size. For smaller properties (less than 30 employees) 100% response rate was the target. This target declined as the size of the organization increased. For organizations with more than 1000 employees, the target rate was established at 10%

This sampling design is, by no means, a random probability sample. Inasmuch as participation was voluntary, such a design was infeasible. However, the sample does represent a broad base of employees in the transit industry which varied by age, sex, tenure, race, etc.

TURNOVER

Turnover is an ubiquitous phenomenon in organizations. No organization operates without its employees, perhaps frequently, leaving. At the limit, every member of any organization will eventually leave. This separation may be voluntary or involuntary, a cause for despair or celebration, proactive or reactive. It has been said that "one of the most serious and persistent problems confronting the personnel manager is that of selecting employees who will render a long period of service to the organization (Schuh 1967, p. 133). This is not a novel point of view. References to turnover in the organizational literature began to appear around 1900 (Price, 1977). Soon thereafter a trend emerged which emphasized both the cost of turnover and how these costs might be reduced (Alexander, 1915a 1915b, 1916; Dennison, 1916; Fisher, 1916; Mayo, 1924; Sheridan, 1916).

Nonorganizational scholars, notably economists, have shared an interest in turnover (Slichter, 1919). Interestingly, these early studies have much in common with more current views of organizational turnover and its implications. Recent reviews of organizational turnover (Brayfield & Crockett, 1955; Herzberg, et al., 1957; Vroom, 1964; Schuh, 1967; Hinrichs, 1970; Porter & Steers, 1973) continue to emphasize the dysfunctional aspects of turnover in the organization.

The negative connotations of turnover have become axiomatic. In its most visible form turnover tends to be associated with short term disturbances imposed upon the organization. These may include interruptions of normal operations, training replacement employees, cost of recruitment, and scheduling difficulties. Obviously, the departure of any employee amounts to at least a minor irritation to his/her supervisor. More substantially, it has been suggested that for large organizations the "reduction of absenteeism by a singly percentage point would result in real cost savings of several millions of dollars annually...(and)...often higher costs are incurred in the case of turnover" (Jeswald, 1974).

As impressive as the costs appear at first glance, they may be misleading. Evidence is easily marshalled which describes the costs (usually monetary) of turnover to the organization (Gaudet, 1960; Lawler, 1973; Mirvis & Lawler, 1977; Moffatt & Hill, 1970; Tuchi & Carr, 1971). Ordinarily, these costs include recruitment, replacement, and training of personnel. A more inclusive documentation of costs has been offered which outlines differential costs associated with turnover for fringe benefits, terminal vacation pay, severance pay, overtime, administrative costs, employment, training, and loss of productivity (Jeswald, 1974).

An essential qualification must be made to these analyses, however, as they fail to consider both sides of the balance sheet. Investigations of this nature mislead the reader since only the <u>costs</u> of turnover are reported. In order to accurately evaluate the consequences of turnover, both the costs and the <u>benefits</u> should be assessed. The turnover literature is replete with reports of costs; the benefits are generally ignored. This tendency systematically biases the consideration of turnover as an organizational phenomenon. For example, to know that a firm's sales for a given period were one million dollars is necessary, but insufficient, information to evaluate the firm's performance. Correspondingly, to know that a firm's

costs were x dollars, however great, does not provide sufficient information to responsibly assess its performance. Obviously, both the costs and benefits need to be reported.

There are a variety of benefits to be derived from organizational turnover. Some are difficult to quantify in dollar terms; others are direct business costs which are identifiable and calculable. Several of the more difficult to quantify may be quickly offered at which point a rather extensive model of the direct costs savings of organizational turnover will be developed.

The perception that turnover has generally negative impacts for the organization may be accounted for by the belief that turnover is inversely related to organizational effectiveness (Price, 1977). Establishing empirical support for this view, however, is problematic. Available evidence does not indicate a consistent relationship between measures of production and turnover (March & Simon, 1958; Mueller, 1977; Tuchi & Carr, 1971). Moreover, there is evidence that turnover increases, not decreases, organizational effectiveness (Guest, 1962; Jennings, 1967; Torrence, 1966; Wells & Pelz, 1966; Ziller, Behringer & Goodchilds, 1962).

Certainly, innovation has clear implications for organizational effectiveness. This particularly true of the dynamic, expanding organization. Recent studies (Baldridge & Burham, 1975; Moch, 1976) concluded that organizational size is positively related to innovation in organizations. Innovation may be a key diagnostic variable for transit operations (Dalton, Fielding, Porter, Spendolini & Todor, 1978). The demand for transit service is changing and the manner in which transit organizations innovate and react to new demands may affect their performance. The importance of innovation under such circumstances can hardly be overstated. Turnover (labor factor mobility) has been cited by many as a force by which innovation is moved from firm to firm (Dubin, 1970; Grusky, 1960; Kirshenbaum & Goldberg, 1976). Grusky (1960) suggested that turnover is a process which brings "new blood" and new ideas to the organization. This process vitalizes the organization and enables it to adapt adequately to both internal demand within the organization and the external demands of the environment. Dubin (1970) suggested that immobility, i.e., lack of turnover, has important dysfunctional consequences for the organization. The immobile work career leads to that which Thorstein Veblen referred to as "trained incapacity."

Dubin posits that "trained incapacity" is the inability to conceive of, or utilize, new ideas. Immobility, then, is dysfunctional to innovation and may reduce organizational effectiveness.

Recent work in the area of institutional management also suggested the importance of personnel movement (Aldrich & Pfeffer 1976). Institutional management is an intriguing concept. Parsons (1960) notes that there are three levels in the hierarchical structure of organizations: (1) a technical level where resources are processed to provide goods and services; (2) an administrative level which coordinates, controls, and supervises the technical level; and (3) the institutional level whose major function relates to coping with the organization's lack of independence. The institutional level may be thought of as an agent of the organization-environment linkage.

Organization and management theory has primarily concentrated on problems at the administrative level (Pfeffer, 1976). Theory, research, and education in the fields of organizational behavior and management have been dominated by a concern for the management of persons <u>within</u> the organization. The problem of how to make workers more productive has been at the foundation of management theory and practice since Frederick Taylor (Pfeffer, 1976). While managing people within the organization may be critical to the success of the enterprise, the management of the organization's environment, i.e. competitors, government regulatory agencies, creditors, public-at-large, suppliers, etc., may be at least as critical. The management of organizations <u>outside</u> their normal confines has been referred to as institutional management. This dimension of "boundary spanning activity" may be especially critical in the transit industry. The relationships which transit properties enjoy (or otherwise) with their boards, citizen groups, counties, municipalities, state and federal agencies are of utmost importance to their operations (Dalton et al., 1978). Movement of individuals from firm to firm is a mechanism for the transfer of innovation. In addition, these movements are essential to the development of interfirm organizations, believed to be a critical element of institutional management (Pfeffer & Leblebici, 1973).

Turnover may also be seen as a coping mechanism. As living organisms, individuals can respond to both benign and noxious environmental stimuli (Howard & Scott, 1965; Dubos, 1965). Coping behavior has been carefully

discussed in the organizational literature (Kahn et al, 1964). Simply, turnover may be a behavior to escape noxious stimuli in the environment (leave a job that causes stress). The literature abounds with references which support the notion of movement (turnover) as a response to stress (Brown & Moore, 1970; Golant, 1971; Howard & Scotte, 1965; Human, 1970; Lazarus, Deese, & Oster, 1962; Lee, 1966; Leslie & Richardson, 1961; Parnes & Spitz, 1969; Speare, 1974; Wolpert, 1965; 1966). Ritchey's (1976) discussion adequately summarizes this view. When the stress threshhold is exceeded, it produces the decision to move.

Organizations do not benefit from preventing, or reducing, turnover caused by environmental stress. Just because an individual has been induced not to leave does not mean he or she will not engage in other behaviors which are stress related (Dalton & Todor, 1979). For the extreme case, there is substantial evidence that turnover may be the end product of the somatic conversion to stress (Ferguson, 1973; Kahn et al, 1964; Kasl & Cobb, 1964; Staw & Salancik, 1977; Taylor, 1968). In this case, turnover is a positive action, not only for the individual but, ultimately, for the organization as well.

Individuals may engage in a variety of "adjustment" behaviors as an alternative to turnover which are dysfunctional to the organization. True, the organization may succeed in reducing turnover, but other withdrawal behaviors may arise. As a response to stress the employee may answer with alcoholism, drug abuse, accidents and other non-productive behaviors (Hill, 1975; Mangione & Quinn, 1975; Argyris, 1960; Lundquist, 1959). Even worse, Chung (1977) suggested that dissatisfied individuals who do not leave the organization may express their dissatisfaction by means of apathy, sabotage, absenteeism, and other counterproductive behaviors. Perhaps the organization is better served not to prevent turnover in these cases.

These benefits of turnover are admittedly difficult to quantify. How are hard dollar amounts attached to such factors as innovation, institutional management, and coping turnover? Nonetheless, their impact on the organization may be real. However, the exact impact is largely conjectural. The discussion which follows is neither conjectural nor difficult to calculate, and is expressed in dollars. Two hypothetical cases are discussed.

The first case represents the financial savings realized in an organization with a 15% per year turnover rate (Table C-1). The second presents the financial impact (cost savings in dollars) of an individual at top pay in a wage schedule leaving the organization and being replaced by an entry-level new hire.[4]

This model is based on several fundamental observations: new hires are not as expensive in terms of salary and fringe benefits as more senior employees; when certain employees leave the organization, the pension contributions paid by the organization are recovered; and money which is not expended in a given period may be used for other purposes. The dollar savings which are enjoyed by an organization based on its employee turnover is the sum of these amounts.

A few very modest assumptions have been made to operationalize this model. For instance, the following explain the major variables utilized:

Regular pay: The figure of 2080 is based on 40 hours per week times 52 weeks = 2080 hours. While employees do not ordinarily work 52 weeks per year, vacation pay is paid at the same rate as regular pay. The total costs of straight wages for an employee, therefore, may be computed on the basis of a 52 week year.

Overtime: This figure of 100 hours per year has been based on a modest 5% per year of total hours worked. Only 2000 hours were used to compute this however as vacation time (2 weeks) was excluded. All overtime pay is based on 1-1/2 times the basic rate.

With these variables, the computation of the total savings realized by the organization is straightforward. The total savings in straight salary is the difference between a top paid person's yearly salary and the entry level salary of a new hire times 15 (the number of people in the top pay

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[4]The wage schedule which has been used for this analysis was not developed merely to illustrate this point. The schedule is a reproduction of one in actual use in a large Western public utility. In the final section of this paper, transit property wage schedules are utilized and compared. The variance in their structure (amounts, time interval between increases in pay, etc.) will be shown to <u>significantly</u> affect the impact of turnover on organization.

TABLE C-1

HYPOTHETICAL SAVINGS FOR 15% TURNOVER RATE

		5th Yr.	4th Yr.	3rd Yr.	2nd Yr.	Entry Level
	Full pay $8.67	7.61	6.67	5.86	5.13	4.51
Regular pay (2080 hrs)	18033	15828	13873	12188	10670	9380
Overtime (5% per year, based on 2000 hrs = 100 hrs)	1300	1141	1000	879	769	676
Subtotal	19333	16969	14873	13067	11439	10056
Pension contribution (5%)	966	848	743	653	571	502
FICA (6.13%)	1185	1040	911	801	701	156
TOTAL	21484	18857	16527	14521	12711	11074

ASSUMPTIONS:
15% turnover rate (annual)
200 employees (30 turnover annually)
75% of employees at top rate
50% of turnover occurs at top level
50% of turnover evenly distributed among rates

IMPACT	Salary Savings		Recovered Pensions		Interest on Recovered Capital	
15 top pay	156,150		36,743		$ 19,257	Single year savings for 15% turnover rate = $294,271
3 @ 7.61	23,349		9,951			
3 @ 6.67	16,359	+	7,407	+		
3 @ 5.86	10,341		5,178			
3 @ 5.13	4,911		3,219			
3 @ 4.51	0		1,506			
	211,110		64,004			

TABLE C-1 (continued)
ASSUMPTIONS

Pension Contribution:	This percentage (5%) is based on a conservative estimate of pension contributions by employers. For an employee making $20,000 per year, a pension contribution of $1,000 (or 5% of the total) is not excessive.
Social Security:	This is based on the required employer's share of FICA. For 1979 this amount is 6.13% of all wages paid an employee to a ceiling of $22,900.
15% turnover rate per year:	This is the rate of turnover per year in this wage classification for the company which we are using for illustration.
200 employees:	There are many more employees than this in the wage schedule shown. The figure 200 was chosen strictly for illustrative purposes.
75% of employees at top rate:	This is an accurate representation of employees in this wage classification.
50% of turnover occurs at top rate:	This is an assumption chosen for this illustration. However, inasmuch as 75% of all employees are at the top rate, an assumption that merely 50% of turnover occurs at this level is modest.
50% of remaining turnover is evenly distributed over the remainder of the schedule:	An assumption made for this illustration. This is, of course, an empirical question.
NOTE:	One additional and critical assumption was made. It is assumed that one half of those employees at the top rate who leave the organization have vested rights to their pension. In other words, for these employees there is no recovery of pension payments. Any employee with more than ten years service would fall into this category. Therefore, the assumption is made for this illustration that of the 15 employees at top pay who leave, 7 are not vested and their pension funds are recovered by the organization. We have assumed that these individuals who are not funded have 7 years seniority. To state that no employees are vested with pension rights would add $40,000 to the organization's savings.

area who have been replaced by entry level employees). This is not an unusual occurrence. We would think it rather common in the transit industry. When coach operators at the top of the wage scale leave the organization they are replaced with entry level (trainee) drivers. The remainder of the salary savings figure is derived by obtaining the difference between the salary ofthe individual who left the organization and the new hire and multiplying that figure by the number of such individuals who left. As you can see the total is $211,110.

The second major savings is realized in the category "recovered pensions." When top paid employees who have not established the minimum seniority to guarantee their pension contributions leave, a large amount of money is recovered. In order to determine the exact amount saved by pension recovery, consider the case of an employee with full pay leaving the organization at the end of her seventh year. In the first year, she will have paid $502, the second $571, the third $653, and so on. At the end of seven years, she will have paid a total of $5,249, all of which is recoverable by the organization. If seven such people leave the organization in a given year (one of the fundamental assumptions of this model based on a 15% turnover rate), $36,743 will have been recovered by the organization. The remainder to the total of recovered pensions is calculated by determining the amount of money each has in his pension account according to his time with the company.

The last column merely illustrates the total value of the money saved in salary and pensions. This amount may be considered simply as interest on this money for a given year. A conservative seven per cent has been used for an annual return on recovered capital. This amounts to $19,257 for the year.

The total savings for the organization for they year is $294,371. Its impact may be stated in terms that amplify its importance. The amount saved per year because of the turnover of 15% of the employees is sufficient to fund the hiring of over 13 full-time, full-pay employees or 26 entry-level employees. For this organization, this amounts to increasing the work force by 13% with the savings associated with this hypothetical case of turnover.

Returning to the original premise about a balanced view of turnover, it was suggested that both the costs and benefits of turnover should be weighed before assessing its consequences for the organization. With this admonition in mind, the analytical question is a simple one. Does it cost $294,371.00 per year to recoup the losses associated with the 30 employees who left? Whether it costs more or less than this amount is not the point of our example. Its purpose is simply to illustrate that benefits from turnover can be overlooked. To reach the optimal organizational decision about how to cope with turnover, benefits must be weighed against costs.

It should be noted that there are a variety of benefits which the organization may receive from the retention of experienced employees in the transit industry. What is the financial value of the commitment and loyalty of an employee when such an employee decides to leave the organization? What, exactly, is experience worth? Obviously, these dimensions are difficult, if not impossible, to quantify. We wouldn't presume to do so. They are a matter of individual judgment by the management of the organization. We merely wish to suggest that there are definite benefits to be realized by an organization which has turnover in its workforce on a somewhat regular basis. The object is to consider both the costs and the benefits of turnover before deciding that it is desirable to reduce it.

Obviously, there are high and low limits of acceptable turnover in organizations. The implications of having every member of the workforce at top pay, receiving maximum benefits, and having vested pension rights are extreme. The costs to maintain such a workforce are immense. Conversely, there is a level at which turnover becomes unmanageable. Naturally, this varies from industry to industry. Is 5% too much? 10%? 25%? 75%? It depends on a variety of factors. Lawler (1973) has suggested that organizations should adopt policies to reduce turnover. This position may be subject to several important exceptions. Clearly in the case of seasonal industries and/or seasonal employment, the costs of employment stability are enormous. For example, maintaing a year-long labor force in the fruit picking and canning industry would incur a prohibitive expense.

Our earlier example presents an interesting alternative to the traditional view of turnover and its dysfunctional impact on the organization. Yet, it too ignores a fundamental aspect of the judgment of the turnover,

phenomenon. It was noted earlier that the absolute level of turnover, ordinarily expressed as a percentage, is difficult to interpret. There are several reasons for this difficulty. First, an unusually high percentage of turnover would not be especially meaningful in a seasonal industry or in seasonal employment as has been discussed. Second, and possibly more important, is the fact that raw turnover percentages are difficult to evaluate without considering the individual component; i.e., the person who has terminated. A relatively low percentage of turnover of one or two percent could have critical consequences for an organization if those individuals who have chosen to leave had essential and/or exclusive skills or knowledge. Similarly, a rather large percentage rate would have little impact on an organization if the individuals who left the organization have no such exclusivity or essentiality. To compare one organization's twenty percent turnover rate with another's thirty-five percent rate on the basis of the raw percentage alone would, therefore, be hazardous. There is simply not enough information for an adequate comparison.

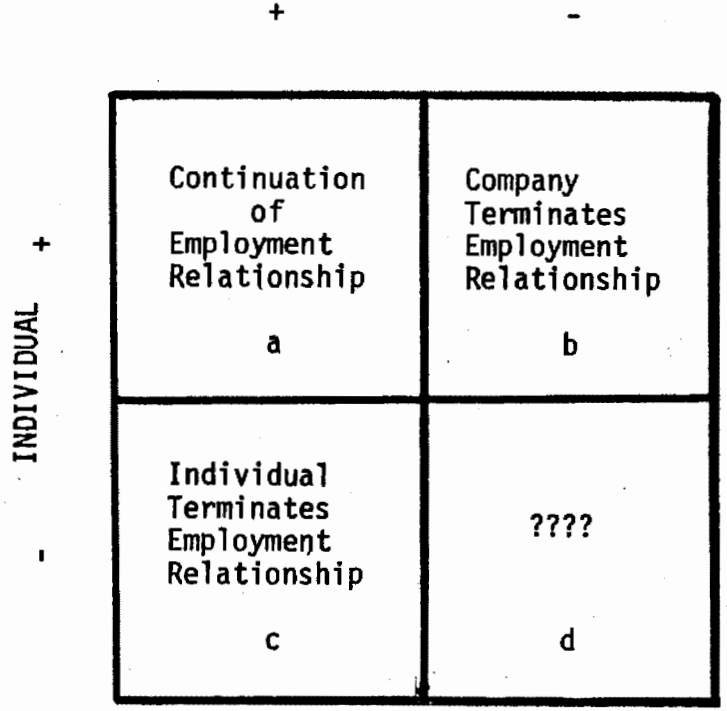
This leads to an important point in the consideration of turnover and its consequences for an organization. Raw turnover figures quoted by organizations are often substantially misleading. Figure C-1 illustrates this point.

In cell "a" we have a condition in which the organization is positively disposed toward the employee and the employee is similarly disposed towards the organization. This cell represents the situation in which both parties are content to maintain the employment relation.

In cell "b" we have the situation in which the individual would like to maintain the employment relationship with the employer. However, the organization has no such inclination. The organization is negatively dis posed towards the individual; sufficiently so to terminate the employment relationship with the employee.

Cell "c" is the case in which the organization should truly be concearned about turnover. Here, the organization is favorably disposed towards the employee, but the employee is negatively disposed towards the organization.

FIGURE C-1: A TAXONOMY OF TURNOVER IN ORGANIZATIONS



In other words, the employee will quit.[5] To the extent that the organization is favorably disposed. it prefers that the employee not terminate the relationship.

The last cell, "d", is an interesting case which will go without a label. It is not labeled because it is not addressed in the turnover literature and rarely considered in the evaluation of turnover. The cell represents the case in which the employee is inclined to terminate. This may be a marginal employee. Every organization is marked by employees whose withdrawal would be welcomed by the organization. The question could be posed as to why the company would not terminate such a person. There are a variety of reasons, not the least of which may be the existence of a labor union.

The point is that cells "b", "c", and "d" are all organizational turnover. In each of these cases an employee leaves the organization. If, however, the turnover percentage is based on the sum of the separations in these cells, the figure is, at best, misleading. In the case of cell "b", the company instigated the turnover. In the "d" case, there is no reason for concern. Only in cell "c" is the organization likely to be meaningfully inconvenienced by turnover. Yet, very often, organizations do not attempt to separate these cells.

In concluding this section on turnover, two points deserve reiteration. First, turnover is not inherently a negative phenomenon. There are a variety of positive consequences of turnover. Many of these positive consequences can be quantified while others are more difficult to quantify. There are sometimes economies to be realized from reasonable levels of employee turnover. Second, turnover rates are subject to misinterpretation. Types of turnover other than those involving good performers are generally not dysfunctional for the organization.

Having developed a somewhat more balanced perspective of turnover,[6] we

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[5]Clearly, not all employees who are "negatively disposed" towards their employer will quit; at least not in the short run.

[6]For a more detailed discussion of the positive aspects of turnover, not only from an organizational persepctive, but from a sociological, economic, and psychological/social psychological perspective as well, see Dalton & Todor (1979).

can meaningfully discuss its antecedents. In the course of this research thorough review of the appropriate literature was undertaken. The next section discusses the more well established determinants of turnover

Antecedents of turnover: A Review of the Literature

The issue investigated in this section involves some variables which are commonly believed to precede or perhaps cause turnover. Several such associations have been identified and have received reasonably consistent support. Other associations, while the subject of extensive investigation, cannot be said to have received consistent support. Each, in turn, will be reviewed and discussed.

Sex of the Employee and Turnover. Table C-2 is a compendium of the research that has examined the relationship between the sex of an employee and turnover. Early beliefs that women were more likely to quit the work-force because their salaries were not the main contribution to the family income, because of marriage, because of child bearing, etc. has not stood the test of empirical investigation. The association between the sex of employees and turnover cannot be stated with authority. Of some 37 studies which have examined this relationship, 14 have reported no association, 7 reported males have higher rates of turnover, and 17 have reported women as leaving organizations more often (see Table C-2). The findings are inconsistent; it is fair to state that the association between sex of an employee and turnover is undetermined at this time.

Organization Size, Size of the Work Unit, and Turnover. The question is a simple one: do employees of large or small organizations or organizational subunits have higher propensities to leave? Unfortunately, this question is more easily posed than resolved. The evidence of a substantial amount of empirical research is mixed. More than forty studies have examined this question (see Table C-3). Eighteen of these studies reported no relationship. Such varied reports do not lend themselves to generalization.

In the present study, data were collected from 24 transit properties. Turnover rate and the size of the transit property were examined. There was no statistically significant relationship between size and turnover. It should be noted that size of the organization was defined as the number of revenue vehicles. This is somewhat different from the traditional manner in which organizational size is calculated. The organizational literature

TABLE C-2

SEX & TURNOVER

Investigation	ASSOCIATION
Mangioni 1973	Zero
Silcock 1954	Women Higher
Behrend 1955	Women Higher
Hedberg 1960	Women Higher
Charters 1964	Women Higher
Harris 1964	Women Higher
Young 1965	Women Higher
Life Office Management Assoc. 1968	Women Higher
Azumi 1965	Women Higher
Charters 1970	Women Higher
Moffatt & Hill 1970	Women Higher
Singer 1970	Women Higher
MacKay et. al. 1971	Women Higher
Marsh & Mannari 1971	Women Higher
Young 1971	Women Higher
Armknecht & Early 1972	Women Higher
Institute of Manpower Studies 1972	Women Higher
Archibald 1973	Women Higher
Marsh & Mannari 1977	Women Higher
Cook 1951	Zero
Long 1951	Zero
Tollen 1960	Zero
Knowles 1964	Zero
OECD 1965	Zero
Young 1965	Zero
Bureau of Labor Statistics 1967	Zero
Charters 1967	Zero
Clowes 1972	Zero
Fry 1973	Zero
Mangione 1973	Zero
Pettman 1973	Zero
Mattila 1974	Zero
March & Simon 1958	Male Higher
Tollen 1960	Male Higher
Office of State Merit Systems 1968	Male Higher
UK National Economic Development 1969	Male Higher
Wales 1970	Male Higher
Katzell et. al. 1971	Male Higher
Goodman et. al. 1973	Male Higher

TABLE C-3

ORGANIZATION SIZE, SIZE OF THE WORK UNIT AND TURNOVER

Investigation	Association
Woytinsky 1942	Negative
Cook 1951	Zero
Long 1951	Zero
Kerr et. al. 1951	Positive
Greystoke et. al. 1952	Zero
Silcock 1954	Zero
Charters 1956	Zero
Mandell 1956	Positive
Levine 1957	Positive
Argyle et. al. 1958	Zero
March & Simon 1958	Negative
Ross 1958	Negative
Dodge 1960	Positive
International Labor Review 1960	Negative
Tollen 1960	Zero
Indik & Seashore 1961	Positive
Taira 1962	Negative
Knowles 1964	Zero
Marshall 1964	Negative
OECD 1965	Negative
Georgopoulos & Matijko 1967	Negative
Russell 1968	Zero
Azumi 1969	Negative
Burton & Parker 1969	Positive
Wieland 1969	Positive
Charters 1970	Negative
Charters 1970	Zero
Ingham 1970	Zero
Moffatt & Hill 1970	Zero
Pencavel 1970	Zero
Yett 1970	Positive
MacKay et. al, 1971	Zero
Marsh & Mannari 1971	Negative
Cole 1972	Negative
Dore 1973	Negative
Fry 1973	Zero
Goodman et. al. 1973	Zero
Kasarda 1973	Negative
Pettman 1973	Zero
Anderson 1974	Zero
Granovetter 1974	Negative

generally defines size as the number of persons employed by the organization. This method may be misleading, particularly in the transit industry. Some transit properties operate as departments of municipalities. The property may use city personnel and purchasing facilities, among others. To use number of personnel as an indicator of size for such a transit property would be misleading. The tendency would be to understate the number of personnel. It is difficult, if not impossible, to properly allocate that percentage of time which is spent by persons in non-transit support agencies (city personnel department) in the maintenance of transit operations. The number of revenue vehicles operated by a property was selected, therefore, as an indicator of size. In any case, no relationship between the size of the transit properties and their turnover rates can be reported from this research.

Age of Employees and Turnover. An examination of the literature which addresses the relationship between age and turnover (Table C-4) leaves little question about its direction. The overwhelming preponderance of studies indicate a negative association between age and turnover. It appears that younger employees are more likely to leave the organization than older or, if you prefer, that older employees are less likely to leave the organiza tion This may be a mixed blessing. It tends to foster employment stability for the organization. It may also create a situation in which promotional opportunities for younger organizational members are restricted as more senior employees do not vacate these positions.

Tenure (length of time on the job). Not surprisingly, a similar association is found in the case of tenure and turnover. Ordinarily a person with greater tenure with the company is likely to be older than an employee with less tenure. Naturally, there are exceptions. Even a cursory review of Table C-5 reveals a consistent inverse relationship between length of time on the job and turnover; the more tenure a person has, the less likely he or she is to leave the organization.

Education and Turnover. The majority of the studies examining this relationship have reported positive associations (Table C-6). There is a tendency for employees with more education to have a higher propensity to leave the organization.

TABLE C-4

TURNOVER AND AGE

Investigation	Association
Slichter 1919	Negative
Long 1951	Negative
Silcock 1954	Negative
Behrand 1955	Negative
Andrew 1957	Negative
March & Simon 1958	Negative
Minor 1958	Negative
Ross 1958	Negative
Fleishman & Berniger 1960	Negative
Hedberg 1960	Negative
Shott, Albright & Glennon 1963	Zero (Men) Negative (Women)
Harris 1964	Negative
Knowles 1964	Negative
Knowles 1964a	Positive
Kitson 1925 (in Knowles 1964b)	Positive
Ley 1966	Negative
Bassett 1967	Negative
Down 1967	Positive (Training period) Negative (Post-training period)
Hedberg 1967	Negative
Azumi 1969	Negative
Stone & Athelstan 1969	Negative
Weiland 1969	Negative
Farris 1971	Negative
Katzell et. al. 1971	Negative
Robinson 1972	Negative
Archibald 1973	Negative
Dore 1973	Negative
Fry 1973	Negative
Goodman 1973	Negative
Hellriegel & White 1972	Zero
Mangione 1973	Negative
Pettman 1973	Negative
Porter & Steers	Negative
Van der Merwe & Miller 1973	Positive
Anderson 1974	Negative
Porter et. al. 1974	Negative
Federico et. al. 1976	Negative
Waters et. al. 1976	Negative
Mobley et. al. in press	Negative

TABLE C-5

TURNOVER WITH TENURE

Investigation	Association
Slichter 1919	Negative
Woytinsky 1942	Negative
Cook 1951	Negative
Silcock 1954	Negative
Behrend 1955	Negative
Silcock 1955	Negative
Ross 1958	Negative
Herzberg et. al. 1959	Negative
Fleishman & Berniner 1960	Negative
Hedberg 1960	Negative
Shott et. al. 1963	Negative
Harris 1964	Negative
Knowles 1964	Negative
OECD 1965	Negative
Young 1965	Negative
Charter 1967	Negative
Hedberg 1967	Negative
Lefkowitz 1967	Negative
Eaton 1968	Negative
Azumi 1969	Negative
Weiland 1969	Negative
Lefkowitz 1971	Negative
MacKay et. al. 1971	Negative
Hill 1972	Negative
Robinson 1972	Negative
Fry 1973	Negative
Mangione 1973	Negative
Pettman 1973	Negative
Porter & Steers 1973	Negative
Anderson 1974	Negative
· Mowday, Porter & Stone	Negative
· Waters et al. 1976	Negative
Mobley et al., in press	Negative

TABLE C-6

EDUCATION AND TURNOVER

Investigation	Association
March and Simon 1958	Positive
Tollen 1960	Zero
Bucklow 1963	Positive
Life Office Management Assoc. 1968	Positive
Office of State Merit System 1968	Positive
Berg 1970	Positive
Irzinski and Hylbut 1970	Positive
Katzell et. al 1971	Positive
Sheck-Wilbourn 1971	Positive
Gross 1972	Positive
Goodman et. al. 1973	Positive
Hellriegel and White 1973	Zero
Kasarda 1973	Zero
Mangione 1973	Zero
Pettman 1972	Positive
Federico et. al. 1976	Positive

The reason for this relationship is clear. Virtually all labor market studies have shown that the labor market is segmented in some sense (Osterman, 1975; Reynolds, 1951). Segmentation separates labor markets into primary and secondary sectors. Individuals ordinarily begin their employment in the secondary market. Vertical mobility from the secondary market to the primary market is difficult and in most cases impossible. Orderlies do no usually become doctors through vertical mobility. Mail room clerks do not become attorneys through promotion. More likely, individuals must "quit" their jobs in the secondary market,[7] obtain the necessary educational requirements, and reenter the labor market in the primary sector. Under these circumstances, the tendency for more educated employees to have a higher propensity to leave is easily understood.

Level of Employment and Turnover. An association between level of employment and turnover is well known (Table C-7); the more opportunities for work in the environment, the more likely a person is to quit. A person is not very likely to quit his/her job voluntarily when there is little opportunity for alternate employment. The availability of alternate employment is an important consideration for those employees who might consider leaving the organization. Individuals do not leave the organization, except in extreme cases, without assessing the market (Hyman, 1970; Mattila, 1974; Parsons, 1973). A large percentage of workers who leave the organization have already made arrangements for new employment before they leave.(Mattila, 1974). Individuals tend to leave their jobs as their perception of opportunity increases (Bowey, 1975; Burton & Parker, 1969; Fry, 1973; Marsh & Mannari, 1971; Pettman, 1973).

Task Repetitiveness and Turnover. This relationship, as suggested by Table C-8, also appears to be well established in the organizational literature. Thre is a tendency for those involved in rather routine jobs to leave the organization more often. As a generalization, it may be stated that craft occupations generally have a lower degree of routinization than semi-skilled or unskilled; managerial and professional occupations are less

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[7]One need not necessarily "quit" present employment, attain the requisite levels of education, and reenter the market. Many employees pursue these requirements while maintaining their membership in the organization. However, having attained the appropriate requirements, they are likely to leave the organization to utilize their new skills elsewhere.

TABLE C-7

LEVEL OF EMPLOYMENT AND TURNOVER

Investigation	Association
Slichter 1919	Positive
Woytinsky 1942	Positive
Cook 1951	Positive
Long 1951	Positive
Ross 1951	Positive
Pearce 1954	Positive
Silcock 1954	Positive
Behrend 1955	Positive
March & Simon 1958	Positive
Hedberg 1960	Positive
Knowles 1964	Positive
Knowles 1965	Positive
Lefkowitz 1967	Positive
Burton and Parker 1969	Positive
Hyman 1970	Positive
Moffatt and Hill 1970	Positive
Wales 1970	Positive
Katzell et. al. 1971	Positive
Mackay et. al. 1971	Positive
Marsh & Mannari 1971	Positive
Fry 1973	Positive
Lawler 1973	Positive
Pettman 1973	Positive
Anderson 1974	Positive
Bowey 1974	Positive
Dansereau et. al. 1974	Positive
Woodward 1976	Positive
Mobley et. al. in press	Positive

TABLE C-8

TASK REPETITIVENESS (ROUTINIZATION) AND TURNOVER

Investigation	Association
Baldamus 1951	Positive
Guest 1955	Positive
Argyris 1960	Positive
Kilbridge 1961	Positive
Lefkowitz and Katz 1969	Positive
Taylor and Weiss 1969a	Positive
Taylor and Weiss 1969b	Positive
Wild 1970	Positive
Goodman 1973	Positive
Lawler 1973	Positive

repetitive than clerical or secretarial. The data indicate that successively higher degrees of routinization probably lead to higher rates of turnover in the organization (Price, 1977).

Role Clarity and Turnover. The association between role clarity and turnover is also well established. The research results are consistent and indicate an inverse relationship between role clarity and turnover. "Role clarity" is actually a misnomer for the phenomenon investigated in many of the studies reported in Table C-9. Seminal work in the area (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) presented a rather sophisticated view of those factors that impact role clarity: overload, ambiguity, conflict, organizational change, complexity, etc. For the purposes of the research which has investigated the association between "role clarity" and turnover, the meaning has been somewhat altered and refers to the matching of an individual's expectations, prior to entering a job, with organizational reality. The conclusion that may be drawn from these investigations suggest that, to the extent original expectations are not met, turnover may be the expected consequence. Porter and Steers (1973) summarized this position:

> "...where individuals were provided with a realistic picture of the job environment--including its difficulties--prior to employment, such subjects apparently adjusted their job expectations to more realistic levels. These new levels were then apparently more easily met by the work environment, resulting in reduced turnover (p. 153).

This type of turnover may be a response to expectations not met or expectations not well developed. In this case, turnover may simply be the result of judgmental error by an employee. People entering the job market are theoretically free to choose an occupation of their choice. However, very often they have no mechanism for choosing among multiple occupational opportunities and matching these with their aptitudes or interests. Individuals who seek employment usually have little market information and relatively few resources with which to sustain themselves during the search (Gallaway, 1971; Ritchey, 1976). Often, an individual's choice of initial occupation is based more on circumstances than knowledge, experience, or a rational approach to

TABLE C-9

ROLE CLARITY AND TURNOVER

Investigation	Association
Weitz 1965	Negative
Youngberg 1963	Negative
Lyons 1968	Negative
Macedonia 1969	Negative
Dunnette et. al. 1973	Zero
Farr et. al. 1973	Negative
Goodman et. al. 1973	Negative
Graen et. al. 1973	Negative
Lawler 1973	Negative
Porter and Steers 1973	Negative
Wanous 1973	Negative
Ilgen & Seeley 1974	Negative
Ilgen & Dugioni 1974	Negative
Graen & Ginsburgh 1977	Negative
Marsh & Mannari 1977	Negative

the labor market (Taylor, 1968). Dubin (1976) suggested that, for a large portion of the population, the decision about the choice of work is made at the time the choice becomes necessary, namely, when the labor market is entered. Such a strategy leads to error. Individuals enter the labor market with little information and have a large degree of ignorance about future outcomes (Dunkerely, 1975). They do not have well-developed expectations. Under these circumstances, turnover, as a response to error in judgment by job seekers, is inevitable as a consequence of such work-search behavior.

It should be noted that unmet expectations are not restricted to relatively new employees in an organization. Pavalko (1971). In the course of an individual's tenure with an organization, expectations held by individuals about their present and future occupational activities may become inconsistent with the reality they face within the organization. For such individuals, turnover may be expected (Fry, 1963; Lawler, 1973).

Family Size and Turnover. Generalization is difficult with respect to this association. Most recent evidence, reported in Table C-10, indicates an inverse relationship between size of family and turnover; the larger the family of an employee, the less likely he or she is to leave the organization However, this evidence is contrary to the majority of earlier work which suggests just the opposite. It is probably safe to say that this relationship has not been consistently reported and is not determined at this time.

Commitment/Involvement/Attachment and Turnover. The associations between commitment, involvement, and attachment toward the organization are complex. For present purposes, it is sufficient to say that an inverse relationship has been fairly well established (Table C-11); the higher an individual's commitment, level of involvement, and/or attachment to the organization, the less likely he or she is to leave the organization.

Behavioral Intention and Turnover. "Behavioral intention" refers to an individual's expressed intent to remain in the organization." An employee may be asked to respond to a question such as:

What are your plans for staying with this organization?

1. I plan to stay until I retire.
2. I will leave only if an exceptional opportunity turns up.
3. I will leave if something better turns up.
4. I intend to leave as soon as possible.

TABLE C-10

FAMILY SIZE, FAMILY RESPONSIBILITY, AND TURNOVER

Investigation	Association
FAMILY SIZE AND TURNOVER	
Knowles 1964	Negative
Stone and Athelstan 1969	Positive
FAMILY RESPONSIBILITIES	
Guest 1955	Positive
Minor 1958	Positive
Saleh et. al. 1965	Positive
Fleishman and Berniger 1969	Positive
Robinson 1972	Positive
Mangione 1973	Negative
Federico et. al. 1976	Positive
Waters et. al. 1976	Zero
Marsh and Mannari 1977	Negative with number of dependents

TABLE C-11

COMMITMENT/INVOLVEMENT/ATTACHMENT AND TURNOVER

Investigation	Association
Porter et. al. 1974	Negative
Porter et. al. 1976	Negative
Marsh and Mannari 1977	Negative
Mirvis and Lawler 1977	Negative
Steers 1977	Negative
Koch and Steers 1978	Negative

As Table C-12 indicates, an employee who expresses an intent to remain is less likely to leave the organization. This association is usually quite strong.

Amount of Pay and Turnover. An inverse relationship between amount of pay and turnover has been referred to as a truism (Ingham, 1970). Porter and Steers (1973) are somewhat less emphatic but have suggested that pay is a significant factor in the termination decision. A review of the appropriate literature, presented in Table C-13, supports this basic premise. It is a reasonable proposition that employees who are content with their pay are not likely to leave the organization.

It is fashionable today to suggest that pay (extrinsic rewards) is not as important, as meaningful to employees, as intrinsic rewards, such as autonomy, responsibility, participation in decision making processes, etc. However, there is substantial evidence that when an individual leaves his or her present job, he or she ordinarily gets more money at the new job. For all categories of employment studied by Wertheimer (1970), the income difference attributable to migration is positive. There is not evidence that migrators get more authority, more autonomy, more participation in decision making or any other intrinsic dimension; the evidence is that they get more money.

Promotion, Advancement, and Turnover. The evidence for this association is mixed. Early reports were consistently negative; i.e., less satisfaction with promotion or advancement or perceived opportunities for promotion and advancement was associated with higher rates of turnover. Recent evidence does not support the inverse relationship. Six of the seven recent investigations examined the relationship between promotion/advancement and turnover found no association. This may be the result of a perceived lack of opportunity to obtain promotion and advancement in alternative organizations. In recent years the employment market has been somewhat tight. Therefore, discontent with present opportunities for advancement and promotion might not be a sufficient condition for turnover (see Table C-14).

Job Satisfaction and Turnover. The belief that turnover is a natural consequence of job dissatisfaction is widespread among both practitioners and theorists (Nicholson, Brown, & Chadwick-Jones, 1976). Tables C-15

TABLE C-12

BEHAVIORAL INTENTION AND TURNOVER

Investigation	Association
INTENT TO REMAIN	
Mangione 1973	Negative
Newman 1974	Negative
Kraut 1975	Negative
Waters et. al. 1976	Negative
Marsh and Mannari (1977)	Negative

TABLE C-13

AMOUNT OF PAY AND TURNOVER

Investigation	Association
Hill 1962	Negative
Ulman 1965	Negative
Goldthorpe et. al. 1968	Negative
Stoikov and Raimon 1969	Negative
Singer and Morton 1969	Negative
Burton and Parker 1969	Negative
Ingham 1970	Negative
Pencavel 1970	Negative
Wlaes 1970	Negative
Archibald 1971	Negative
Mackay et. al. 1971	Negative
Armknecht and Early 1972	Negative
Blau 1973	Negative
Fry 1973	Negative
Goodman 1973	Negative
Helreigel and White 1973	Negative
Lawler 1973	Negative
Mangione 1973	Negative
Porter and Steers 1973	Negative
Allison 1974	Negative
Bowey 1974	Negative
Newman 1974	Zero
Kraut 1975	Zero
Federico et. al. 1976	Negative
Waters et. al 1976	Zero
Koch & Steers 1978	Zero
Mobley et al. in press	Zero

TABLE C-14

PROMOTION, ADVANCEMENT WITH TURNOVER

Investigation	Association
Friedlander and Walton 1964	Negative
Knowles 1964	Negative
Saleh et. al. 1965	Negative
Bassett 1967	Negative
Ronan 1967	Negative
Telley et al. 1971	Zero
Conference Board 1972	Negative
Hellriegel and While 1973	Zero
Newman 1974	Zero
Kraut 1975	Zero
Waters et al. 1976	Zero
Marsh and Mannari 1977	Negative
Koch and Steers 1978	Zero
Mobley et. al. in press	Zero

through C-18 generally support the popular notion that there is an inverse relationship between job satisfaction and turnover. Overall job satisfaction (Table C-15), satisfaction with supervision (Table C-16), cohesion/satisfaction with co-workers (Table C-17), satisfaction with work itself, job content, autonomy and responsibility (Table C-18), generally display this association with turnover. However, a recent, ambitious study has cast serious doubt on the job-dissatisfaction theory of turnover and absence from work. Nicholson et al. (1976) concluded that such a theory is empirically unsupportable.

This is a serious charge. Can it be that there is no relationship between job satisfaction and turnover in the organization? Obviously many people are currently working in jobs for organizations which they do not especially like, yet they have not intention of leaving. Others who are very satisfied with their current job would leave without remorse if an acceptable alternative were presented. Thus, it is probably best to review the research results reported in Table C-15 through C-18 with some caution.

Organizational Effectiveness, Efficiency and Turnover. If turnover does not affect the efficiency or the effectiveness of the organization, it ceases to be a meaningful issue. Price (1977) has described three general models in which turnover has a negative impact on effectiveness.

The first describes various costs that are associated with turnover. The rationale is clear; to the extent that turnover costs the organization money, it is dyfunctional to the organization. We have suggested that this is not a productive approach to the question of organizational effectiveness as it ignores the possible benefits of turnover. Many of the inverse associations between turnover and effectiveness in Table C-19 (Gaudet, 1960; Tuchi & Carr, 1971; Moffatt & Hill, 1970; Lawler, 1973; Mirvis & Lawler, 1977) are in the category not addressing the benefits of turnover; they represent discussions of costs only.

The second approach includes those studies that state that organizational effectiveness is reduced by turnover with no mention of costs. There are several such studies in the literature (Burling et al, 1956; Christensen, 1953; Grusky, 1963; Kahne, 1968; Revans, 1964). It is difficult to generalize these findings, however, as they are counterbalanced by similar studies

TABLE C-15

JOB SATISFACTION AND TURNOVER

OVERALL JOB SATISFACTION WITH TURNOVER

Investigation	Association
Weitz and Nuchols 1955	Negative
Weitz 1956	Negative
Talacchi 1960	Zero
Youngberg 1963	Negative
Hulin 1966	Negative
Hulin 1968	Negative
Katzell 1968	Negative
Miles & Hulin 1968	Negative
Macedonia 1969	Negative
Taylor and Weiss 1969a	Negative
Taylor and Weiss 1969b	Negative
Wild 1970	Negative
Waters and Roach 1971	Negative
Atchison and Lefferts 1972	Negative
Mangione 1973	Negative
Waters and Roach 1973a	Negative
Waters and Roach 1973b	Negative
Newman 1974	Negative
Ilgen and Dugoni 1977	Negative
Marsh and Mannari 1977	Negative
Koch and Steers 1978	Negative
Mobley et al. in press	Negative

OVERALL SATISFACTION

Investigation	Association
Herzberg et al. 1957	Negative
March and Simon 1958	Negative
Vroom 1964	Negative
Fournet et al. 1966	Negative
Schuh 1967	Negative
Lyons 1968	Negative
Miles and Hulin 1968	Negative
Weiland 1969	Negative
Katzell et al. 1971	Negative
Lefkowitz 1971	Negative
Waters and Roach 1972	Negative
Taylor and Weiss 1972	Negative
Lawler 1973	Negative
Pettman 1973	Negative
Porter and Lawler 1973	Negative
Quinn et al. 1974	Negative

TABLE C-16

SATISFACTION WITH SUPERVISION AND TURNOVER

Investigation	Association
Fleishman and Harris 1962	Curvilinear
Saleh et. al. 1965	Negative
Ley 1966	Negative
Hulin 1968	Negative
Skinner 1969	Curvilinear
Taylor and Weiss 1969a	Zero
Taylor and Weiss 1969b	Zero
Telley et al. 1971	Negative
Hellriegel and White 1973	Negative
Dansereau et al. 1974	Negative
Newman 1974	Zero
Waters et al. 1976	Zero
Graen and Ginsburgh 1977	Negative
Ilgen and Dugioni 1977	Negative
Koch and Steers 1978	Zero
Mobley et al. in press	Zero

TABLE C-17

COHESION, SATISFACTION WITH COWORKERS AND TURNOVER

Investigation	Association
Shils and Janowitz 1948	Negative
Burlinger et al. 1956	Negative
Blau 1957	Negative
Evan 1963	Negative
Knowles 1964	Negative
Marshall 1964	Negative
Schuh 1967	Negative
Goldthorpe et al. 1968	Zero
Hulin 1968	Negative
Taylor and Weiss 1969a	Zero
Taylor and Weiss 1969b	Zero
Farris 1971	Negative
Lefkowitz 1971	Negative
Telley et al. 1971	Negative
Van der Merwe and Miller 1971	Negative
Waters and Roach 1971	Zero
Hellriegel and White 1973	Negative
Hines 1973	Negative
Lawler 1973	Negative
Mangione 1973	Zero
Pettman 1973	Negative
Porter and Steers 1973	Negative
Van der Merwe and Miller 1973	Negative
Gow et al. 1974	Negative
Granovetter 1974	Zero
Newman 1974	Zero
Kraut 1975	Zero
Waters 1976	Zero
Ilgen and Dugioni 1977	Zero
Marsh and Mannari 1977	Zero
Koch and Steers 1978	Negative
Mobley et al. in press	Zero

TABLE C-18

MISCELLANEOUS SATISFACTION DIMENSIONS AND TURNOVER

SATISFACTION WITH WORK ITSELF

Investigation	Association
Waters and Roach 1973	Negative
Newman 1974	Zero
Porter et. al. 1974	Negative
Kraut 1975	Negative
Waters 1976	Negative
Koch and Steers 1978	Negative
Mobley et al. in press	Negative

SATISFACTION WITH JOB CONTENT

Investigation	Association
Saleh et al. 1965	Negative
Hulin 1968	Zero
Katzell 1968	Zero
Taylor and Weiss 1969a	Negative
Taylor and Weiss 1969b	Negative
Karp and Nickson 1973	Negative
Mangione 1973	Negative
Mirvis and Lawler 1977	Negative
Telley et al 1971	Negative
Waters and Roach 1973	Negative
Wild 1970	Negative

JOB AUTONOMY AND RESPONSIBILITY

Investigation	Association
Guest 1955	Negative
Ross and Zander 1957	Negative
Taylor and Weiss 1969a	Negative
Taylor and Weiss 1969b	Negative
Waters and Roach 1971	Negative
Kraut 1975	Negative
Ilgen and Dugioni 1977	Negative

TABLE C-19

ORGANIZATIONAL EFFECTIVENESS/EFFICIENCY WITH TURNOVER

Investigation	Association
Christensen 1953	Negative
Burling et. al. 1956	Negative
Kirshenbaum & Goldberg 1956	Positive
Gaudet 1960	Negative
Grusky 1960	Positive
Trow 1960	Zero
Carlson 1962	Curvilinear
Guest 1962	Positive
Ziller et. al. 1962	Positive
Grusky 1963	Negative
Gamson and Scotch 1964	Zero
Revans 1964	Negative
Trow 1964	Zero
Torrence 1965	Positive
Wells & Pelz 1966	Curvilinear
Bassett 1967	Curvilinear
Jennings 1967	Positive
Pomeroy and Yahr 1967	Zero
Kahne 1968	Negative
Office of State Merit Systems 1968	Negative
Mueller 1969	Zero
Dubin 1970	Positive
Moffatt and Hill 1970	Negative
Tuchi and Carr 1971	Negative
Eitzen and Yetman 1972	Curvilinear
Eitzen and Yetman 1972	Zero
Lawler 1973	Negative
Hydenbrand 1973	Curvilinear
Allison 1974	Curvilinear
Jeswald 1974	Positive
Goldberg 1976	Positive
Mirvis and Lawler 1977	Negative

studies which describe benefits in non-monetary terms (Dubin, 1970; Grusky, 1960, 1970; Kirshenbaum & Goldberg, 1956; Gamson & Scotch, 1964; Eitzen & Yetman, 1972).

The third approach investigates the differences in the performance levels of those who leave the organization versus those who stay. Unfortunately, there is very little research in this important area. As we noted earlier, if those who leave the organization are high performers, turnover is obviously dysfunctional. Conversely, if those who leave are low performers, there is no cause for concern. Three empirical studies (Allison, 1974; Bassett, 1967; Office of State Merit System, 1968) have examined this question. All agree that the tendency is for higher performers to leave the organization.

This tendency, for high performers to be more likely to leave, is understandable. High performers probably have greater opportunities for alternative employment. Clearly, the retention of high performers in the organization should be a high priority goal. But, at what cost? The notion of increasing the "net attractiveness" of the organization has been discussed earlier. How much does it cost to retain these people? Or, indeed, can they be retained at all?

In the present research the turnover rates of 24 transit organizations were compared with three measures of organizational efficiency and two measures of effectiveness. We found no evidence that the amount of short-term turnover in a transit property affects either efficiency or effectiveness. The association between revenue hours per driver hour, operating expense per employee and operating expense per revenue vehicle hour (measures of service efficiency) were not related to the turnover rate for the current year. Similarly, there were no statistically significant relationships found between measures of service effectiveness and organizational turnover.

Interestingly, however, we found that stability rate (percentage of members having 5 years' tenure in the organization) was related to two measures of service efficiency, but in a direction indicating that low turnover may <u>lower</u> efficiency! Spearman correlation coefficients between stability rate and operating expense per revenue vehicle hour, and operating expense per employee were .54 and .55 respectively--both statiscally significant ($p < .05$). Stability rate also correlated .48 with absenteeism

($p < .05$), indicating that organizations having a higher proportion of senior employees also suffer greater absence rates. These findings are supportive of the notion that some turnover may be necessary for organizational renewal.

In the aggregate, the findings of this research suggest rather clearly that turnover, per se, is not dysfunctional for the organization; certainly not for the transit properties participating in this research.

Summary: Turnover's Impact on Transit Effectiveness

In summarizing the major propositions developed in this section, several points should be noted. First, turnover is not inherently a negative, dysfunctional phenomenon for an organization. In fact, it might have positive implications for operation of the organization. This is particularly true of organizations with relatively low training requirements for its employees. Where the replacement and training costs are relatively low, a moderate amount of turnover is probably acceptable. This may well be the case in the transit industry.

Second, there is no evidence from this research that the turnover rates of transit properties are negatively related to service effectiveness or service efficiency. Under these circumstances, it is difficult to argue that turnover is an important determinant of organizational effectiveness in the transit properties that have been examined.

Lastly, we are inclined to concur with findings (Table C-19) of several investigators who have suggested that the effect of turnover on organizational effectiveness is curvilinear (Carlson, 1962; Eitzen & Yetman, 1972; Heydenbrand, 1973; Wells & Pelz, 1966; Allison, 1974). The existence of such a relationship suggests that there may be an optimal level of turnover. While it is possible to have too much turnover, it is also possible to have too little. Too much turnover may well be disruptive. Too little may be reflected in the expense of maintaining the labor force, loss of flexibility, innovation, etc. Judging from the lack of negative association between turnover and service effectiveness and service efficiency in the transit properties examined, it may be safe to say that at this time the turnover rates are well within the parameters, i.e., the rate of turnover is neither too high nor too low.

ABSENTEEISM

Less is known of absenteeism--its antecedents, determinants, and correlates--than turnover. In the previous section an attempt was made to present a balanced view of turnover, presenting both its positive and negative ramifications. Although the same general approach is appropriate here, the costs of absenteeism are large, and few (if any) benefits offset these costs. When an employee is absent fromw work the organization's payments for the maintenance of the employee are not reduced. When employees receive sick pay, fringe benefits are not reduced; contributions to retirement continue at their normal rate; contributions to medical insurance continue at their normal rate; the organization continues to pay social security; state and federal unemployment insurance costs accrue even when the employee is using sick leave.

The organization may pay, in addition to these costs, a premium (1-1/2 pay in overtime) to the individual who has been enlisted to replace the employee who is temporarily absent. Transit properties maintain extra boards for the purpose of managing absenteeism. Therefore, a portion of the cost of maintaining this extra board may be directly applied to those cost imposed on the organization for absenteeism. Additional costs may be expected as a consequence of what has been referred to as the "overtime-absenteeism cycle" (Jeswald, 1974). Employees who work a lot of overtime may take time off. When they do so, other employees work overtime in their place and they in turn take time off, and so on, and so on. Overtime begets absenteeism which begets overtime. The costs of absenteeism to the organization are apparently large. What are the benefits?

We are not aware of any dollar savings associated with employee absenteeism. However, there are two approaches to the consideration of absenteeism which may ameliorate its negative impact on the organization. First, absenteeism may be considered to be a cost of doing business. Seen in this manner, its expense has already been calculated and its costs considered. For instance, fringe benefits are a real expense of doing business. The amount which is to be contributed by the organization for the benefit of employee in terms of pensions, vacation accrual, paid holidays, medical insurance, among a host of others is, presumably, taken into account when

the budget of a transit property is proposed. These costs, among others, are considered as a factor in such decisions as the extent of service which can be delivered to the public, the fare structure, amounts of support funds, wage scales and schedules for employees, etc. The only benefit which is likely to accrue as a result of these fringe benefits is an ability to attract and, at least to some extent, maintain a work-force. In addition, these are items which are subject to collective bargaining. It is probably true that a reduction in the fringe benefit packages of transit employees would decrease overhead for the property. Efficiency would be increased; the recovered dollars could, at least in principle, be directed toward improving transit service (effectiveness). Nonetheless, fringe benefits are not usually subject to reduction. Management doesn't talk of decreasing vacation time for employees; no one seriously considers reducing the number of paid holidays; organizational medical insurance payments for employees are not likely to be eliminated.

Is the "right" to be absent a fringe benefit? If the contract provides for ten days of vacation after two years service, no one seriously expects any employee to take less. If there are eight paid holidays per year, no employee is expected to take five. There is little question that the right to be absent is a fringe benefit. It is part of the collective bargaining agreement. The particular rules which govern the "absence procedure" are usually enumerated in the contract. How many days a year will be accrued? Must an employee present medical certification upon returning? What happens to sick pay which has accrued and remains unused when an employee leaves the organization. How many sick days can an employee accrue? These features are normally part of the collective bargaining agreement. Under these circumstances, it is very difficult to argue that some "right to be absent" is not a fringe benefit.

It should be noted that this "right to be absent" is limited or, at least, management thinks it should be. This fringe benefit is to be used only if the employee is sick. We are not aware of any general "right to be absent." Management would argue that as a fringe benefit absenteeism is more potential than absolute. If an employee is sick, then, and only then, would the fringe benefit be operational. This is not unlike other insurance type fringe benefits. Medical insurance payments may provide for coverage of $50,000 per year for an employee. This does not, however, suggest that

the employee has the absolute right to collect $50,000 in cash if they do not require it for illness during the year. However, there is evidence that this is not the manner in which all employees operate. There is strong evidence that employees treat sick pay as an "absence right".

There may be in issue of equity involved here. Suppose the contract provides for the accumulation of one day of sick pay per month. One employee always takes twelve days off per year; another employee takes none. It is an undeniable fact that one employee is receiving more fringe benefits than the other. Potentially, the former employee has 12 days more "vacation" than the latter.

The inequity of this situation could be minimized if the employee who does not regularly take the time off eventually receives some benefit from the accrued sick leave. This rarely happens. The single exception is the situation, one for which no employee hopes, in which the employee becomes very sick at some time in the future. In this case, an accumulation of 180 days of sick leave would be a substantial benefit and one which the employee truly earned. Employees who have unwisely squandered their sick time would now be "sorry" if they became very ill.

The analytical question, of course, is how often do employees actually "collect" their benefit through a prolonged illness. Although it is an empirical question for which we have no answer, we are inclined to believe that this happens rarely. So what really becomes of accumulated sick leave? One, the employee leaves and "donates" the accumulated time to the organization. Two, the employee, whether leaving or not, reaches the maximem days which are allowed to accumulate, and "donates" the additional time to which he would otherwise be entitled. The bottom line is fundamental--the employee never receives the fringe benefit. This fact is not lost to all transit, or any other organization's employees. This simplistic observation can be rather well documented by this research. Consider the following relationships.

First, there is an association between having to establish proof of illness (doctor's certification) and absenteeism. The relationship between not having to certify illness and the amount of absenteeism is .3634 (Pearson product moment correlation), significant at the 0.48 level. In other words,

when certification of illness is not required, employees are much more likely to be absent.

Second, there is an association between the amount of pay received by employees and their absence rate. The more money an organization pays to operators (the higher the top rate) the more absenteeism. The strength of this relationship is .5069 (Pearson product moment correlation), significant at the .027 level. One would have to wonder if employees are "buying" leisure time. This is an intriguing association. It is sufficient to say that a positive relationship between the top rate of pay for employees and their absences is not intuitive. Why would people who make more money be sick more often?

Lastly, for the properties examined in this research, there is an association of .6689 (Pearson product moment correlation), significant at the .002 level, between the amount of sick time that accumulates and absence levels. Succinctly, in properties which have generous provisions for sick leave accumulation, there is a much higher rate of absenteeism. Again, it isn't intuitive why people with more sick leave would necessarily be sick more often. Does this not suggest that people are "using" their absence right?

These relationships between absence and proof of illness, amount of wages, and rate of accumulation can be interpreted as support for the "absence as a fringe benefit" hypothesis. The fundamental point is not subtle. Is, in fact, absenteeism a cost of doing business? As a fringe benefit, absenteeism is expensive. But, then, so are medical insurance and vacation pay. If management considers "the right to be absent" as a fringe benefit, it is a cost of doing business and less a matter of substantive concern.

A second way of "re-interpreting" absenteeism is to consider it a coping behavior. It has been suggested that a certain flexibility (the ability to take time off, call in sick," etc.) allows an employee to withdraw temporarily from the organization. It is argued that this "temporary withdrawal" is somehow better than a permanent withdrawal (quitting). The benefits which may arise from this view of absenteeism are based on the premise that to reduce turnover is of benefit to the organization. As the first section to this paper on turnover strongly suggested, there is some question

about that premise. Certainly, if turnover is not necessarily beneficial (cost effective) to the organization, then to allow absenteeism because it purportedly reduces turnover would seem somewhat shortsighted. As in our discussion of turnover, we have attempted to present a balanced view of absenteeism. A fair assessment of both the costs and benefits of absenteeism was undertaken. However, the scale is tilted radically to one side. The costs of absenteeism are enormous (its approximate costs are calculated in the section which follows under the discussion of "Effectiveness, Efficiency and Absenteeism"), the benefits, if any, are elusive.

With this perspective in mind, antecedents and determinants of absenteeism which have been regularly identified in the organizational literature can be discussed. In the course of the research, a thorough review of the appropriate literature on absenteeism was undertaken. The following is an outline and review of these associations.

Antecedents of Absenteeism: A Review of the Literature

As in the case of turnover, there are several variables which are believed to precede or even cause absenteeism. Other associations, although the subject of examination, are not as clear. Each, in turn, will be reviewed and discussed.

In comparison to the rather voluminous research conducted in the area of turnover, relatively little empirical work has examined absenteeism. Certainly, one of the reasons for this tendency is the difficulty in measuring "absenteeism." Turnover is an easy dimension to measure; individuals either maintain the employment relation with the employer or they do not. Those who terminate this relationship are said to have "turned over "

The measurement of absenteeism is not as simple conceptually and, as a result, has been subject to a variety of interpretations in research. What exactly constitutes "absenteeism?" Gaudet (1963) stated that at least 41 different measures of absenteeism have been employed in empirical research. Some of the problems implicit in the measurement of absenteeism may be quickly reviewed.

Is there a difference between the total number of times a person is absent and the total number of days absent? Which one should be used as an index of absenteeism? Very clearly, an individual who is absent for 14

days on a single occasion is different from an individual who is absent 14 times for a single day. It may be, and probably is safe to say, that these absences do not share the same correlates, determinants, or antecedents.

Should excused time be counted as employee absence? An employee absent with the consent of management (not an unusual occurrence) is unlike the employee who calls twenty minutes after work has begun to inform management of his inability to attend. Again, the antecedents of the one behavior may be altogther different than those of the other.

Both of these examples may be referred to as "absenteeism." However, they do not describe the same behaviors. This makes the interpretation of any study which examines "absenteeism" very difficult because very often researchers do not report the absenteeism index which they have used (Muchinsky, 1977). In addition, both the reliability and validity of the various measures of absenteeism have been subjected to severe criticism (Muchinsky, 1977; Lyons, 1972; Huse & Taylor, 1962; Chadwick-Jones et al, 1971).

In the collection of scientific data it is essential that the data be both relevant and consistent. The consistency of any measurement tool in scientific inquiry is its reliability. If a rule is used to determine distance from one point on a desk to another, we expect that several measurements using the same ruler would give consistent results; the distance measured should be about the same. The same can be said for any instrument which purports to measure "absenteeism"; it should give reasonably consistent results. Unfortunately, the traditional measures of absenteeism do not meet this criterion very well. Muchinsky (1977) has reported the reliability of the absenteeism measures of 17 studies. These so-called reliability measurements range from .00 (absolutely no reliability) to .74 (reasonable reliability) with a mean value of .36 (very poor reliability). For an example of the practical meaning of the "reliability coefficient," we may return to our ruler. If the distance on the desk were measured twice by the same ruler and <u>exactly</u> the same distance was reported, the reliability coefficient would be 1.00. In other words, the measurement is totally consistent. If the measurement is very close to the same, the

reliability coefficient will be high (near 1.00); if the measurements are far apart, the reliability coefficient will be low (near 0.00). The mean value of .36 (median .38) is very poor. It strongly suggests the most measures of absenteeism are not consistent.

Validity is a somewhat more complex notion which involves several distinct concepts. For our purposes, it need merely be noted that just because a measurement is consistent does not mean it is valid. Returning again to our ruler. If the ruler itself is not accurate, i.e., it is not actually 12 inches long, it doesn't matter how often we measure the distance on the top of the desk, or how consistent the measurements, the results will not be accurate. The answer we get for the distance on top of the desk is not correct. Obviously, this is an important concept, not only for the measurement of desks but, for the measurement of any attitude or behavior (such as absenteeism).

No study has ever directly addressed the validity of absenteeism measures (Muchinsky 1977). Muchinsky places this oversight into its proper perspective:

> "The validity of a measure is directly related to its reliability; based on the magnitude of the reliability coefficients reported..., estimates of validity cannot be very encouraging" (1977, p. 319).

The results of the research which has examined absenteeism must, therefore, be interpreted with some caution. We know that "absenteeism" is not a unitary concept; there are many forms which absenteeism may take. It is very difficult, sometimes impossible, to determine which index of absenteeism may have been used in specific study. In addition, the reliability of the measures of absenteeism are likely to be low or unreported.

Size of the Organization or Work Unit and Absenteeism. This association, as reflected in Table C-20, has been reported consistently as positive. Larger organizations and/or larger work units are characterized by higher absence rates. It may be that larger organizations have more "slack." That is, the absence of a single employee is not an especially serious matter. Another important factor may be that the larger organizations have a built-in

TABLE C-20

SIZE OF THE ORGANIZATION OF WORK UNIT AND ABSENTEEISM

Investigation	Association
Kerr et. al. 1951	Positive
Acton Society Trust 1953	Positive
Hewitt and Parfitt 1953	Positive
Metzner and Mann 1953	Blue Collar - positive White Collar - zero
Argyle et. al. 1958	Curvilinear
Revans 1958	Positive
Baumgarter and Sobol 1959	Positive
Indik and Seashore 1961	Positive
Ingham 1970	Positive

mechanism for dealing with absenteeism which smaller organizations either are not inclined to supply or cannot afford. The existence of the "extra board" may be a classic example of this tendency. Very large organizations expect absenteeism and they are prepared through the operation of the extra board to cope with it. One, or several, employees being absent at any given time is unlikely to affect the operation of the property. Small properties (with only a dozen or so drivers) do not have the luxury of the extra board; employee absence in this case creates a problem. It could be argued that employees are aware of the criticality of their services under such conditions and are more sensitive to them. Employees may not be as likely to absent themselves from the work unit when their absence amounts to a major problem for the organization. On the other hand, entirely different processes may be at work. In a small property in which occasional absenteeism does present problems, one would suspect that disciplinary procedures and policies towards absenteeism might be well defined and closely monitored. Conversely, in large properties with abundant extra boards in which absenteeism is largely incidental, no such control procedures may be operational.

In this research, an analysis of the size of the transit property (Measured by number of revenue vehicles) and absenteeism of employees reveals no statistically significant relationship between the two. Transit property size for the sites examined is not a correlate of absenteeism.

Age of Employees and Absenteeism. Generalization about the results of the investigations which have examined this relationship is hazardous. Positive, negative, zero, and curvilinear relationships have all been reported as indicated in Table C-21. The present research found no relationships. With a sample size of 1165 employees, the level of association was .0032 (Pearson product moment correlation).

Job Satisfaction and Absenteeism

As was the case in considering the relationship between job satisfaction and turnover, it seems reasonable to expect job satisfaction to be inversely related to absenteeism. However, a cursory examination of Table C-22, a compendium of the studies which have investigated the relationship between job satisfaction and absenteeism, reveals many (24) zero relationships. Also, two recent studies (Ilgen & Hollenback, 1977; Nicholson, Brown, Chadwick-Jones, 1976) have seriously questioned any relationship between these variables.

TABLE C-21

AGE AND ABSENTEEISM

Investigation	Association
Jackson 1944	Curvilinear
Schenet 1945	Zero
Naylor and Vincent 1959	Zero
De La Mare and Sergen 1961	Positive
Cooper and Payne 1965	Positive
Nicholson and Goodge 1976	Negative
Nicholson, Brown, Chadwick-Jones 1977	Negative
Garrison and Muchinsky 1977	Paid - Positive Unpaid - Negative

TABLE C-22

JOB SATISFACTION AND ABSENTEEISM

Kornhauser and Sharp 1932	Negative
Noland 1945	Negative
Revans 1947	Negative
Covner 1950	Negative
Kerr, Kipplemier, and Sullivan 1951	Negative
Metzner and Mann 1953	Negative
Van Zelst and Kerr 1953	Negative
Fleishman et. al. 1955	Negative
Lundquist 1959	Negative
Patchen 1960	Negative
Talacchi 1960	Negative
White 1960	Negative - 2 scales Zero - 4 scales
Harding and Bottenberg 1961	Zero
Lundquist 1962	Zero
Mann, Indik and Vroom 1963	Zero
Gadourek 1965	Zero
Taylor 1968	Negative
Gerstenfeld 1969	Zero
Smith, Kendall and Hulin 1969	Negative - 4 scales Zero - 1 scale
Hackman and Lawler 1971	Zero
Waters and Roach 1971	Negative - 2 scales Zero - 3 scales
Ferguson 1972	Negative
Hrebiniak and Roteman 1973	Negative
Waters and Roach 1973	Negative - 1 scale Zero - 4 scales
Newman 1974	Zero
Clark 1975	Zero
Nicholson, Brown, Chadwich-Jones 1976	Zero
Garrison and Muchinsky 1977	Zero - paid absences Negative - unpaid absences
Nicholson, Wall, and Lischeron 1977	Negative - 3 scales Zero - 3 scales

The present research partially supports this view. There is a modest (approximately 1% of the variance explained) association between job satisfaction and absenteeism. The level of association is -.1026 (Pearson product moment correlation), significant at the .001 level.

Organizational Effectiveness and Efficiency and Absenteeism

This research has identified a statistically significant relationship between the varying amounts of absenteeism in the transit properties and measures of their efficiency and effectiveness. As in the turnover case, two indicators were used to determine service effectiveness (passengers per service area population, passengers per revenue vehicle hour, operating expense per vehicle hour, operating expense per employee). Absenteeism is not significantly related to any of the service effectiveness indices. It is, however, significantly correlated with operating expenses per revenue vehicle hour (.50) and operating expense per employee (.67).

The absence of an association between absenteeism and service effectiveness suggests there is no inherent relationship and between them. Certainly, if coaches did not run when their drivers were absent, such measures as passengers per service area population and passengers per revenue vehicle hour would be affected. Fortunately, this is not the case. However, only in the most extreme circumstances does a bus not run because of driver absenteeism; even if appropriate drivers could not be found to replace those absent, managerial personnel would, no doubt, be called upon to operate the coaches. Therefore, it is not surprising to find that absenteeism does not impact service effectiveness.

In order to determine the costs of absenteeism (its effects on transit property operations), a pro rata share of fringe benefits, the expense of maintaining an extra board to replace absent drivers, and any overtime payments expended to "cover" absent employees must be calculated. This research has shown that the overall absence rate for operators was nearly 5% (4.88%) in 1976-77. This figure reflects the ratio of the total number of absent hours for all the operators to the total number of hours worked. To get a close approximation of the costs to a transit property for employee absenteeism, figure the annual cost of the extra board + 5% of the total wages + 5% of the annual fringe benefits contributions + all overtime payments required to cover absent employees. Table C-23 presents the approximate costs associated with a 5% absenteeism rate for a property with 200 regular drivers earning

TABLE C-23

APPROXIMATE COSTS ASSOCIATED WITH ABSENTEEISM

Assumptions:
200 regular drivers
5% absenteeism rate (actual rate for this research .0488)
10 extra board drivers (.05 X 200 regular drivers)
0 overtime assumed (assumption is that extra board is always sufficient; i.e., overtime is never paid to cover for absent drivers)
$6 per hour (average pay rate per driver)
2000 working hours per year (50 weeks X 40 hours)
25% fringe benefit package (fringe benefits are 25% of total payroll)

2000 hours per year X $6 per hour X 200 drivers = $2,400,000.00

To

Total annual payroll for regular drivers	$2,400,000.00	(2000 hours per year X $6 per hour X 200 drivers)
Total fringe benefits for regular drivers	600,000.00	(.25 of Total payroll)
Total cost of extra board wages	120,000.00	(2000 hours per year X $6 per hour X 10 drivers)
Total cost of extra board fringe benefits	+ 30,000.00	(fringe benefits for extra board drivers, .25 of total extra board payroll)

TOTAL COSTS OF ABSENTEEISM

1.	5% of total driver payroll which is paid annually for zero (0) productivity	$120,000.00
	5% of total fringe benefit package for regular drivers paid for zero (0) productivity	30,000.00
	Total cost of maintaining extra board (10 drivers)	120,000.00
	Fringe benefit package for extra board drivers	30,000.00
	TOTAL COST	$300,000.00

$6 per hour.

This $300,000.00 cost can be brought into a practical perspective; it is enough to maintain 20 additional drivers per year. From the example in Table C-23, it costs $12,000.00 in salary plus $3000 in fringe benefits for a total of $15,000 to maintain one driver for a year. Dividing $300,000 by this amount results in 20 additional drivers who could be hired based on a 5% absenteeism rate.

Three additional points should be borne in mind. First, this example considers only the absenteeism of operators. The costs of overall absenteeism to the transit property are greater than this figure. Secondly, a conservative, and probably unrealistic, assumption has been made about overtime. The example assumes that overtime is not paid to cover for absent coach operators. Lastly, the assumption regarding the size of the extra board (exactly 10 operators to cover a 5% absence rate of 200 drivers) ignores the possibility that absence behavior is not uniformly distributed. For instance, because the overall rate of absenteeism annually is known to be 5% does not mean that 5% of the drivers will be absent every day. Some days fewer drivers will be absent and on other days many more will be absent. The extra board we have described has no slack. The extra board, in reality, would probably have to be enlarged to accommodate those occasions when the absence rate exceeds 5%. Either that or the property must be prepared to call in drivers and pay premium rates.

Essentially, then, our approximation of the costs of absenteeism in conservative. The real costs to the organization are perhaps much larger that those we have indicated. There is no question that absenteeism is a <u>very real cost</u> to the organization. Unlike the turnover situation, where costs might be offset by benefits, absenteeism offers few, if any, benefits for the organization. The concluding section of this paper addresses the issue of controlling (minimizing) the impacts of both turnover and absenteeism on the organization. First, however, the next section discusses the relationships between absenteeism and turnover. Three general models are proposed and the results of this research are marshalled to identify the model which appears most applicable to the transit industry.

RELATIONSHIPS BETWEEN ABSENTEEISM AND TURNOVER

Prior to discussing possible strategies for the management of turnover and absenteeism (the subject of the last section), the association between the two should be established. It may be that absenteeism and turnover are interrelated. If so, this is an important consideration in attempting to control these behaviors. For instance, suppose that absenteeism is inversely related to turnover. This suggests that high levels of absenteeism are ordinarily accompanied by lower rates of turnover. If this is true, it has critical implications for the management of both absenteeism and turnover. To commit to a vigorous program to reduce absenteeism under these circumstances would raise some interesting problems.

If turnover and absenteeism are positively related, a similar decision may confront the management of the organization. Management may unwisely institute programs which reduce all withdrawal behaviors (absenteeism and turnover among them). The problem, as discussed at some length in earlier sections, is whether turnover should be reduced. The point is, again, that it is essential to establish the relationship, if any, between absenteeism and turnover before embarking upon ways in which either may be managed for the benefit of the organization.

Three methods are used in this section for identifying the nature of the relationship between absenteeism and turnover in the transit industry. The first is based on a review of the organizational literature which has examined the specific question of the relationship, if any, between absenteeism and turnover. The second is a more general approach. The literature will again be the focus but in this case a search for the common determinants, correlates, or antecedents of both absenteeism and turnover are sought. Lastly, the evidence from this research is examined to determine the association between absenteeism and turnover for the transit properties.

Three general models have been suggested to describe the associations between absenteeism and turnover: pain-avoidance model, adjustment model, and decision model (Nicholson, 1977).

Pain Avoidance Model

This model suggest that there is a continuum of types of employee withdrawal from the organization. In this view, absenteeism is a precursor of turnover. The decision an employee makes to be absent from work is a small

version of the major decision to quit his or her job (Burke & Wilcox, 1972; Herzberg, Mausner, Peterson, & Capwell, 1957). Melbin (1961) agreed with this general veiw:

> "...high absenteeism appears to be an earlier sign, and turnover the dying stage of a long and lively process of leaving" (Melbin, 1961, p. 15).

This approach, to consider absenteeism a precursor of turnover, is the classical "withdrawal" account of the relationship (Nicholson, 1977). This model is based on a presumed relationship between attitudes and behavior. It would seem consistent that a person who holds an unfavorable attitude towards some object would behave unfavorably. This, if a person does not like the organization, the job, or some aspect of it, we should not be surprised to find that this employee engages in withdrawal behavior. He or she doesn't like it so she/her attempts, at every opportunity, to be absent.

Adjustment Model

The adjustment model, espoused by the Tavistock group (Hill & Trist, 1953, 1955; Rice & Trist, 1952), suggests that absenteeism is an alternative to turnover. Staw (1977) argues for this point of view as he cautions against a tendence to reduce absenteeism.

> "below a given level of absenteeism, the individual may not be able to cope effectively with his job. High absenteeism may be a functional adjustment of individuals to extremely boring or dissatisfying task...it may also be true that the routinized 40-hour week does not fit adequately with certain individuals or subgroup values and that high absenteeism has provided a functional equilibrium or safety valve" (Staw, 1977, p. 68).

This approach suggests an inverse relationship between absenteeism and turnover. Higher absenteeism would be associated with lower rates of turnover. In this case, high absenteeism is the reason that some employees don't quit. They find the job unsatisfactory but as long as they are able to be occasionally (or regularly) absent, the job is bearable and they do not quit.

Decision Model

The rationale for this model has come from two distinct, relatively independent schools of thought in social science. The first is based on the rational approach taken by classical economists and a sector of sociological thought. The second stream of though can be traced to the expectancy theorists of organizational psychology. The "bottom line" of these views is the same. Absence and/or turnover is a traditional response which is determined by the subjective evaluations of individuals towards their outcomes. In other words, employees will be absent or quit the organization if the benefits outweigh the consequences of these behaviors (March & Simon, 1958). Turnover and absenteeism, according to this model, do not have to be a function of trying to avoid a dissatisfying job (pain-avoidance) nor does absenteeism need to be a coping mechanism (adjustment model). They may be the result of a rational decision process which has evaluated the benefits and the costs of withdrawal behavior. This is a very simple model. Individuals reflect on what will happen if they are absent or quit. If a positive consequence is expected, they will absent themselves from the organization temporarily (absenteeism) or permanently (turnover).

As indicated, the organizational literature will be reviewed to determine which of these models, if any, can be supported. In addition, common correlates, determinants, or antecedents will be sought in the organizational literature. Lastly, our research is carefully examined to determine which of the models closely represents the transit data.

Relationship Between Absenteeism and Turnover: A Reveiw of the Literature

The evidence from the research which has directly examined this relationship summarized in Table C-24, is mixed. There are reports of positive (12 studies), negative (5 studies), and zero (15) associations. Further problems beset these examinations which complicate the generalization of results. We have already discussed the difficulties which are traditionally encountered when attempting to measure "absenteeism." Judging from Table C-24, it is probably fair to surmise that the association between absenteeism and turnover established by the literature is inconclusive, especially because of methodological inconsistencies.

Turnover and Absenteeism: Common Correlates and Antecedents

There appear to be no correlates or antecedents shared by absenteeism and turnover. Lyons (1972) investigated the notion of shared correlates

TABLE C-24

RELATIONSHIP BETWEEN ABSENTEEISM AND TURNOVER

Investigation	Association
Mayo and Lombard 1944	Zero
Clarke 1946	Zero
Kerr 1947	Zero
Giese & Ruter 1949	Zero, Negative
Kerr et al 1951	Zero, Negative
Sawatsky 1951	Zero, Negative
Acton Society Trust 1953	Zero
Van Zelst & Kerr 1953	Positive
Fleishmen et al. 1955	Positive
Hill & Trist 1955	Zero
Crowther 1957	Zero
Herzberg et al. 1957	Positive
Argyle et al. 1958	Zero
Lundquist 1958	Zero, Negative
Georgopoulos et al. 1960	Zero
White 1960	Zero (total dep) Positive (number of incidences)
Melbin 1961	Positive
Yuzuk	Zero
Georgopoulos & Mann 1962	Zero
Ronan 1963	Positive
Revans 1964	Positive
Lyons 1968	Positive
Burke & Wilcox 1972	Zero
Lyons 1972	Positive
Beehr & Gupta 1978	Positive

between turnover and absenteeism and concluded:

> "In all samples 92 variables were related significantly to either turnover or absenteeism. Of these 92 variables, both absenteeism and turnover were significantly related to only eight, that is, eight were significant common correlates of both turnover and absenteeism in the same sample. There is little support for the notion of common correlates.

In our literature reviews, over three hundred studies were examined. In areas in which there were common variables (i.e., researchers had investigated the same independent variables for both turnover and absenteeism), there is no evidence of common correlates. Age, tenure, efficiency, and effectiveness fall into this category. Our research, in fact, suggests that certain correlates are related in opposite directions with turnover and absenteeism. For example, there is a positive relationship between amount of pay received by employees and absenteeism. The more money employees make the more likely they are to take time off. Conversely, there is an inverse relationship between amount of pay and turnover. The more money a person makes the less likely they are to quit. It should be noted that tenous evidence does exists that dissatisfaction with the organization and/or a variety of its characteristics is positively associated with both absenteeism and turnover. We have discussed this matter at length in other sections. Suffice it to say that the associations between attitude (dissatisfaction) and behavior (turnover and/or absenteeism) have been subject to strong attack in general (Deutscher 1966, 1973; Wicker, 1969) and in the particular case of satisfaction and withdrawal (Ilgen & Hollenback, 1977; Nicholson et al. 1976).

There is, in short, no firm evidence in the organizational literature which supports the notion of common correlates, or antecedents for absenteeism and turnover.

Results from this Research and the Relationship between Turnover and Absenteeism

The research has found no statistically significant association between the turnover rate and the absenteeism rate for transit properties. We cannot disconfirm the statement that turnover and absenteeism are separate, distinguishable phenomenon. This result is based on group level data; the archival

rates of absenteeism and turnover were obtained from the participating transit properties and were analyzed to determine whether or not they were significantly associated. They were not.

We are inclined to reject the applicability of the "pain-avoidance" model to transit organizations, given this result. Moreover, we have reservations about its applicability to organizational theory or practice in general.

The adjustment model suggests that absenteeism is a coping mechanism. If this were so, however, inverse relationships between absenteeism and turnover would be consistently found in the organizational literature and in this research. Neither the literature search nor the present research support such a relationship. Therefore, little evidence sustains this model of the association between absenteeism and turnover.

The third model, which we have called the decision model, considers both absenteeism and turnover to be the consequence of a rational decision making process of organizational participants. According to the decision model, employees evaluate the positive consequences (benefits) and the negative consequences (costs) of both withdrawal behaviors and act according to their evaluation. This model offers the best fit with our results as well as the research literature.

Summary: The relationship between Absenteeism and Turnover

The purpose of this section was to establish the association between absenteeism and turnover prior to delving into possible strategies for their management. Three models which capture the possible associations between absenteeism and turnover were assessed. Our research provides relatively firm support for the validity of the decision model as an explanation for turnover and absenteeism in transit. Therefore, it appears that absenteeism and turnover, in the absence of support for the other two models, are independent phenomena. This suggests that the management of turnover and absenteeism can essentially be undertaken without concern that a change in the level of either one necessarily impacts the level of the other. The final section discusses particular methods for managing absenteeism and turnover.

THE MANAGEMENT OF TURNOVER AND ABSENTEEISM

This section considers the management of turnover and absenteeism. Turnover will be discussed first. The discussion suggests ways to reduce the impact of turover on the organization whether it is costly or beneficial. If turnover is within reasonable bounds, the aim should be to maximize its benefits. If turnover is excessive, then its costs should be minimized. This section concludes with a discussion of managing absenteeism.

Turnover

It has been suggested that the cost of turnover associated with a non-exempt employee is $1000 (Brummet, Flamholtz, & Pyle, 1969). With respect to the cost of replacing coach operators (the principal unit of analysis in this study) we have no quarrel with this estimate. Although we have no data to establish the exact cost of replacing operators, we do not believe it greatly exceeds this amount. It should be noted that we are restricting the following, as we have prior discussions, to the dollar costs and benefits of turnover. It is true that tenure with the organization may bring commitment, loyalty, and attachment to the organization. It may be that coach operators with greater tenure have fewer accidents. We do not know what the dollar values are with respect to these variables. However, it should also be noted that there are benefits associated with turnover which are equally difficult to quantify. What is the value, for instance, for instance, of innovation which is brought into organizations via turnover? We do not presume to attach dollar values to commitment and loyalty; we do not know the non-monetary costs of a stable work force. Until these factors can be expensed, the management of transit organizations will have to rely on their judgment to evaluate the consequences of turnover for these factors.

The focus of the first section of this paper was to establish the dollar values of turnover to the organization. Judging from the lack of impact of turnover on either service effectiveness or service efficiency, we have concluded that turnover is probably not dysfunctional in the transit properties which we have examined. On the contrary, turnover might be associated with costs savings. However, we recognize that this approach is contrary to conventional assumptions about turnover. Fortunately, it is possible to suggest a policy which may be followed by transit, or any other organization, in which the costs of turnover are reduced or its benefits enhanced regardless of whether turnover is viewed as a positive or negative phenomenon. It involves the administration of wages to employees.

This suggestion is based on a simple observation. If all employees are paid the same amount of money irrespective of their tenure with the organization, there are few benefits to be derived by the organization, when they leave. Essentially, if the entry level wage is commensurate with the top wage, the primary benefits to be realized from employee turnover are non-monetary. A uniform wage is also quite unrealistic because it ignores that more senior employees are capable of performing generally at higher levels than inexperienced employees. The transit properties that we examined had an interesting range of wage progressions. In some cases, after a three month training period, an employee received top pay. In other, it took six months to reach top pay; others, a year. For most properties the wage progression schedule is very narrow. In this case, whether or not you consider turnover to be a positive or negative factor, it is very expensive because there are very few economies, only replacement costs, associated with turnover.

Tables C-25 and C-26 illustrate this point. Table C-25 presents the savings associated with a full pay employee leaving the organization and being replaced with a new hire. In this case, we have a property which has a six month period in which the new employee receives 80% of top pay. In other words, at the end of the six month training and probationary period, the employee receives top pay and, of course, continues to receive this rate thereafter. For this example, the top pay for the property is $7.00. The fringe benefit contribution for each employee is simply assumed to be 25% of total pay.

As Table C-25 indicates, the total savings realized by the property in the case of a full pay employee leaving the organization and being replaced by a new hire on a six-month wage progression schedule is $1365. We noted earlier that an estimate of $1000 for replacement costs does not seem unreasonable. This includes the cost of recruiting, selecting, & training a new employee. This ignores non-monetary considerations. Clearly the difference between $1365 and $1000 is not particularly great. We would not be at all surprised if the non-monetary costs may exceed the meager $365 which is saved.

Table C-26 demonstrates what impact changing the wage progression schedule can have on the costs/savings associated with turnover. One property which we examined for this research had a wage schedule in which it took four years to reach top pay. No other assumptions are changed for this second example. Top pay is still $7 per hour and entry level pay is still 80% of top pay.

TABLE C-25

Cost Savings Associated with a Top Pay Employee Leaving the Organization and being Replaced by a New Hire Assuming a Four Year Wage Progression Schedule.

ASSUMPTIONS:

$7 top pay
25% fringe benefit contribution
2080 paid hours per year
entry level 80% of top pay

Full Pay Employee		Entry Level Employee	
wages for one year 2080 X $7 =	$14560	wages 1st 6 months 1040 X $5.95 =	$6188
25% fringe benefit package =	3640	25% fringe benefit package	1547
		wages 2nd 6 months 1040 X $7 =	7280
		25% fringe benefit package	1820
Total	$18,200	Total	$16835

TOTAL SAVINGS $18,200 - $16,835 = $1365

TABLE C-26

Cost Savings Associated with a Top Pay Employee Leaving the Organization and being Replaced by a New Hire Assuming a Four Year Wage Progression Schedule.

ASSUMPTIONS $7 top pay
25% fringe benefit contribution
2080 paid hours per year
entry level 80% of top pay, 5% increase per year until top rate is reached

full pay employee

wages for 1st year 2080 X $7 =	14560	wages for 1st year 2080 X $5.60 =	11648
		25% fringe benefit package	2912
25% fringe benefit package	3640		
wages for 2nd year 2080 X $7 =	14560	wages for 2nd yr. 2080 X $5.95 =	12376
25% fringe benefit package	3640	25% fringe benefit package	3094
wages for 3rd year 2080 X $7 =	14560	wages for 3rd yr. 2080 X $6.30 =	13104
25% fringe benefit package	3640	25% fringe benefit package	3276
wages for 4th year 2080 X $7 =	14560	wages for 4th yr. 2080 X $6.65 =	13832
25% fringe benefit package	3640	25% fringe benefit package	3458
Total	$72,000		
		Total	$63,700

Total savings $72,000 - $63,700 = $8300

As Table C-26 indicates, the savings associated with the turnover of a top paid operator in this situation are $8300. It is notable that this is over six times the amount of money which is saved by having a six month wage progression schedule. These additional savings are the consequence of merely extending the wage progression schedule. The top rate of pay was not changed. The entry level wage was not changed.

There is another critical aspect of the wage progression schedule which affects the impact of turnover on the organization. Table C-27 represents another situation in which the wage progression schedule is pegged at four years. We make a single change to this model. Instead of an entry level employee receiving 80% of the top rate, he or she receives 70%. Each year thereafter the employee receives a 7.5% automatic increase in wages. As in the last case, at the fourth year, they will reach the top wage level. We have actually increased the percentage wage increment the employee receives each year from 5% to 7.5%. Depsite this change in the yearly wage increment, Table C-27 indicates a significant savings for the organization. Notice that an additional $4578 per employee is gained by reducing entry level pay from 80% to 70% of top pay.

By extending wage progression schedules and lowering the percentage of entry level wages as compared to top wages by as little as 10%, large savings can be realized by the organization. By doing both, i.e., extending the wage schedule progression and reducing the entry level percentage of the top rate by 10%, the savings in the hypothetical example are increased by a factor of 9.43. In other words, the organization's costs are reduced, or its benefits are increased, by a factor of 9.

The efficacy of these measures is not, in any way, dependent on whether turnover is considered a positive or negative phenomenon for a given organization. We merely suggest that the wage progression schedules of the transit properties reviewed by management and their possible implications for turnover and other factors be carefully examined.

Absenteeism

Although absenteeism has been the subject of organizational research since 1900, only recently have studies been conducted with a high degree of experimental control (Muchinsky, 1977). Prior to this time, prescriptions to reduce absenteeism were largely anecedotal. This is unfortunate since 79% of those in a national survey of organizations reported that absenteeism was their most serious disciplinary problem (Bureau of National Affairs, 1973).

TABLE C-27

Cost Savings Associated with a Top Pay Employee Leaving the Organization and being Replaced by a New Hire Entering at 70% of Peak Rate

ASSUMPTIONS:
- $7 top pay
- 25% fringe benefit contribution
- 2080 paid hours per year
- entry level 70% of top pay, 7.5% increase per year until top rate is reached

Full pay employee		entry level employee	
wages for 1st year 2080 X $7 =	14560	wages for 1st year 2080 X $4.90 =	10192
25% fringe benefit package	3640	25% fringe benefit package	2548
wages for 2nd year 2080 X $7 =	14560	wages for 2nd year 2080 X $5.42	11273
25% fringe benefit package	3640	25% fringe benefit package	2818
wages for 3rd year 2080 X $7 =	14560	wages for 3rd year 2080 X $5.95	12376
25% fringe benefit package	3640	25% fringe benefit package	3094
wages for 4th year 2080 X $7 =	14560	wages for 4th year 2080 X $6.47	13457
25% fringe benefit package	3640	25% fringe benefit package	3364
Total	$72,000	Total	$59,122

Total Saving $72,000 - $59,122 = $12,878

One of the first matters which should be established is that very often organizations do not control absenteeism in any manner whatsoever. This may be especially prominent in organizations which are uniquely equipped to cope with regular absenteeism by it members. The transit organization is a classic example of such an institution. The existence of the extra board is testimony to the strategies transit has developed to minimize the impact of absenteeism on its operations.

Not only do organizations not actively pursue campaigns against absenteeism, it often appears that this behavior is actually reinforced. The importance of this tendency cannot be understated. People are more likely to repeat behavior which is rewarding; they get something out of it. Conversely, people are less likely to repeat behavior when it brings a negative consequence; they don't get anything for it or what they get, they don't want.

One recent study implies that absenteeism, by and large, is not "accompanied closely by discomfort." Morgan and Herman (1976) report in an empirical study that past absenteeism is a very good predictor of future absenteeism. The relationship between the amount of past absenteeism and future absenteeism for an individual was reported as .70. This is a very high association. It would certainly appear that individuals who have been absent are not hesitant to do so again. This research by Morgan and Herman (1976) led to a startling conclusion:

> "The results indicate that for some employees, absenteeism provides an opportunity to experience consequences that tend to encourage absenteeism and that are not offset by organizationally controlled consequences that would tend to deter absenteeism" (p. 738).

In order to appreciate the gravity of these conclusions, one must merely ask, "What happens to individuals in the organization that is characterized by high rates of absenteeism?" The disturbing answer is that usually nothing happens.

Many organizations are most generous with their absence provisions. For instance, a person may not have to certify a lengthy illness. In addition, many organizations have contract provisions which provide for the accumulation of 12 days or more sick leave per year. Obviously, these are matters for the collective bargaining agreement and we do not suggest that they be abrogated or even minimized. The point is that they must be subject to control.

There is evidence in the literature which indicates that absenteeism may be reduced by instituting more stringent control policies (Baum, 1978; Baum & Youngblood, 1975). Earlier Seatter (1961) reported on a five year absence reduction program which included strict records, check-up visits on sick employees, a policy of discouraging time off from work, and stricter disciplinary measures. His results showed a marked and sustained reduction in absence levels. However, in fairness, it should be reported that it is not possible to determine from the data which of the program's elements, if any, was responsible for the reduced levels (Nicholson, 1976; Baum, 1978). Rosen and Turner (1971) have conducted research related to this problem. They reported that a hard line was effective in curbing absenteeism in a sample of the hard-core unemployed. Surprisingly, these three cases are the only research which has directly addressed the issue of reducing absenteeism by more stringent control policies.

Other approaches have been taken to reduce absenteeism in the organization. Behavior modification has been used to decrease absenteeism (Nord, 1969; Porter, 1973; Herman et al, 1973; Pedalino & Gamboa, 1974). Pedalino and Gamboa (1974) demonstrated the effectiveness of behavior modification for reducing absenteeism. Each employee who came to work was given a playing card. At the end of the week the person with the highest hand (if they came to work regularly, they would have five cards) was given $20. Other studies have reported success at reducing absenteeism by allowing the employees to participate in an incentive program (Lawler & Hackman, 1969; Scheflen, Lawler, and Hackman, 1971).

Approaches to the control of absenteeism can be neatly divided. There are those that have attempted to control absenteeism through sanctions; in other words, excessive absenteeism would be punished in some manner. Other studies have undertaken to minimize absenteeism by rewarding appropriate attendance behavior (giving incentives, holding lotteries). The literature suggests that either of these approaches may be successful. Given that both are potentially successful, the means for reducing absenteeism should be chosen based upon what is most effective (i.e., results in the greatest reduction in absenteeism) and least costly.

SUMMARY

This paper has assessed the implications of both turnover and absenteeism for urban mass transit organizations. Turnover was not necessarily a negative phenomenon in the transit properties which we examined. The proper evaluation of turnover as an organizational phenomenon is simply a matter of assessing its costs and benefits to the organization. We have attempted to do this and have concluded that turnover is not a pressing problem for the transit properties which we examined. However, whether turnover is perceived as positive or negative, its financial impact can be reduced by the administration design of wage schedule progressions.

The cost of absenteeism to the transit industry are substantial. The existence of the "extra-board" is often mute testimony. This research has suggested that absenteeism appears to be a deliberate strategy for many employees. This conclusion is based on series of associations between absenteeism and a variety of critical independent variables. Inasmuch as the benefits, if any, of absenteeism do not approach the magnitude of its costs, a vigorous effort to reduce its incidence in most transit properties would seem in order.

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APPENDIX D

BARGAINING UNIT STRUCTURE AND PUBLIC TRANSIT PERFORMANCE

James L. Perry
Harold L. Angle

INTRODUCTION

The appropriate-unit question has generated considerable interest in both private and public sector labor relations. Yet, few studies have systematically assessed assertions about the consequences of the size, number, and scope of bargaining units. The paucity of research is particularly apparent in the public sector where policy makers lack empirical evidence to inform their judgments about the structure of bargaining units. This study evaluates some common assertions about the consequences of different bargaining unit structures, using a sample of public mass transit organizations.

BELIEFS ABOUT BARGAINING UNIT STRUCTURE AND ORGANIZATIONAL PERFORMANCE

Because the term bargaining unit has various meanings in the literature, it will be helpful to define how it will be used in the present study. Bargaining unit refers to the election district (Weber, 1961; Wellington and Winter, 1971) created for selection of an employee representative. The election district will be considered to be coterminous with the negotiation unit (Weber, 1961; Wellington and Winter, 1971), i.e. the group of employees that negotiates directly with the employer.

The literature on the structure of bargaining units in the public sector reveals that three dimensions are most frequently discussed: size, fragmentation, and scope of unit. Size involves a relatively straightforward consideration of how many employees should be included within a given bargaining unit. Fragmentation, or the number of separate bargaining units, is a jurisdiction-wide issue and focuses on the problem of proliferation of units. Finally, the scope of the bargaining unit involves whether the unit, is organized on an industrial (vertical) basis, or on an occupational (horizontal) basis (Gilroy and Russo, 1973).

The importance of unit determination to the collective bargaining relationship is highlighted by many observers of public sector labor relations (Balfour, 1976; Gilroy and Russo, 1973; Moore and Chiodini, 1978; Rehfuss, 1978; Rock, 1972; Shaw and Clark, 1971; and Wellington and Winter, 1971). Wellington and Winter (1971, p. 98) suggest the potentially far-reaching consequences of bargaining unit structure:

> Unit determination plays a large role in both the private and public sectors in influencing which, if any, union will be chosen as a bargaining representative, the power structure of bargaining, the ability of various groups of employees to affect directly the terms and conditions of their employment, and the peacefulness and effectiveness of the bargaining relationships.

The section below discusses some conventional beliefs about the consequences of variation in size, number, and scope of bargaining units.

Smaller Units Enhance Employee Democracy

Although employee organizations generally advocate unit structures which are consistent with pragmatic considerations (Steiber, 1973; Jones, 1975), there is general agreement that employee self-determination favors the creation of small units (Rock, 1972). Small units, therefore, are viewed as better facilitating workplace democracy than large units because of the greater influence accorded employees. The tendency for public employers and regulatory agencies to give great deference to employee freedom of choice has, however, substantive merits beyond its contribution to workplace democracy. Rock (1972) and Wellington and Winter (1971) point out that some groups of employees may constitute a small minority of a large unit in which their interests are likely to receive inadequate attention. Small units protect the rights of minority employees in such situations. Greater attention can be given the special needs of employees in small units therefore contributing to greater employee satisfaction (Gilroy and Russo, 1973). Wellington and Winter (1971) also emphasize that failure to recognize the interests of minorities in unit determination may contribute to strife in the bargaining relationship. They note (1971, pp. 111-112): "A dissident group that feels excluded from the bargaining process will not be inhibited by the legal structure regulating bargaining."

Fewer Units Improve Employer Efficiency

Gilroy and Russo (1973) indicate that the proliferation of bargaining units has been recognized as a "major evil" which must be avoided in the public sector. A major benefit of a limited number of bargaining units is ease of administration (Thompson, 1968). Among the purported advantages of a few large units is the reduced negotiations workload and decreased need for a large administrative bureaucracy (Gilroy and Russo, 1973; Shaw and

Clark, 1971; Thompson, 1968; Wellington and Winter, 1971). Since employees are affected by uniform policies and procedures, a few large units should also enhance contract administration activities (Gilroy and Russo, 1973).

Fewer Units Facilitate More Stable Labor Relations

Another avowed advantage of a limited number of bargaining units is the reduced likelihood of "whipsawing" or "leapfrogging" (Gilroy and Russo, 1973). Bargaining with a large number of units creates the possibility that these units will attempt to outdo one another in negotiations. A small number of units minimizes this tendency, while increasing the probability that the union will be able to deal with management at a level where sufficient authority exists to resolve focal issues. Interunion competition over issues outside of bargaining which involve the administration of contracts are also less likely to occur with fewer units.

Departmental Units are Superior to Occupational Units

In their review of unit determination practices, Gilroy and Russo (1973) concluded that departmental or industrial type units are more desirable from the employer's perspective than occupational units. Moore (1978) provides some necessary elaboration for this position, arguing that organizing groups along occupational lines is an artificial grouping of public service employees. Departmental units are capable of allowing effective employee representation while permitting negotiations to focus on performance requirments associated with departmental objectives. On balance, Moore concludes that departmental structures are superior in terms of the management of technological change and productivity improvement; occupational structures superior with respect to administration of collective bargaining and civil service systems.

METHOD

Sample and Research Sites

The research was conducted as part of a larger study which investigated the impact of labor-management relations on organizational effectiveness in

public transit organizations (Perry, Angle & Pittel, 1979). A total of 28 organizations (fixed-route bus systems) in the Western United States participated in the study. Questionnaires were administered to employees at 24 of these organizations. Archival and manager interview data were collected at all participating organizations; however, not all archival data were obtainable at every organization.

The sample-pool criterion for questionnaire administration was membership in the bus operator's bargaining unit. Accordingly, a majority (91%) of respondents were bus operators. However, at some of the participating organizations, additional occupational groups, such as mechanics and/or clerical personnel, were included in the operators' bargaining unit.

Dependent Variables

The selection of organizational outcome variables relied primarily on our review of the literature and the variables explicitly or implicitly addressed in that literature. Table D-1 summarizes the seventeen variables considered in the present research. The method of measuring each of these variables is presented in Attachment 1. Based upon the associations suggested in the literature, Table D-1 also presents the relationships expected between the bargaining unit structure dimensions and the organizational outcome variables.

Independent Variables

The three dimensions of bargaining unit structure defined earlier served as independent variables in the present study. Size was measured by the number of employees in the bus operators' bargaining unit. Fragmentation was measured by the number of certified bargaining units in the transit organization. Scope is a dichotomous variable, reflecting the organization of employees in either occupational or departmental units.

RESULTS

The association between bargaining unit structures and the organizational outcomes were analyzed in two stages. First, zero-order correlations between the independent and dependent variables were computed. Second, in an effort to assess the independent contribution of each structure dimension,

TABLE D-1 .RELATIONSHIPS EXPECTED BETWEEN BARGAINING UNIT STRUCTURES AND OUTCOME VARIABLES

Outcome or Consequence variable	Size	Fragmentation	Scope (Occupational = 0/ Departmental = 1)
Member evaluation of the union's process	—	0	0
Union member influence in decision making	—	0	0
Satisfaction with union efforts on their behalf	—	0	0
Satisfaction with the union leadership	—	0	0
Employee perceptions of organizational adptability	—	0	0
Employee job satisfaction	—	0	0
Employee commitment to the employing organization	—	0	0
Frequency of contract renegotiation	0	+	0
External influences in bargaining	+	+	0
Length of contract negotiations	0	+	0
Employee satisfaction with the way organization policies are put into practice	0	—	—
Labor-management relationship pattern	0	—	0
Number of strikes	+	+	0
Grievances per employee	0	—	0
Manager perceptions of organizational adaptability	0	0	+
Revenue vehicle hour per driver hour	0	0	+
Operating expense per revenue vehicle hour	0	0	—

A plus sign indicates a direct relationship; a minus sign indicates an inverse relationship; zero indicates no significant association is expected.

multiple linear regressions were obtained for each of the dependent variables.

The simple correlation results are presented in Table D-2. A quick comparison of these results with the hypothesized relationships in Table D-1 reveals that some of the relationships for which positive predictions were made are not supported. On the other hand, a number of the bi-variate relationships for which no association had been expected are statistically significant.

Bargaining unit size, as predicted, is negatively associated with employee satisfaction with the implementation of organizational policies, and positively related to external influences in bargaining and number of strikes. Although the direction of the correlations are generally as expected, most of the size-employee attitude relationships are not signifi cant. No relationship had been expected between size and labor productivity and operating expense, but these correlations are significant. However, these correlations might be the result of an unmeasured, uncontrolled, third variable, possibly organizational size.

The original predictions tend to be more strongly supported in the case of the fragmentation variable. Frequency of contract renegotiations, external influences in bargaining, employee satisfaction with the implementation of policies, the number of strikes, and the grievance rate are all correlated with the number of bargaining units at better than the .10 level. The major anomaly, in these results is the positive, rather than negative, correlation between fragmentation and the labor-management pattern. As we had expected, moderate positive correlations are also exhibited between fragmentation and both member evaluation of the union and member influence in decision making.

When judged against the original predictions, the scope-outcome relationships fare least well. Departmentally structured units are significantly associated with lower unit operating expenses, thus providing some support for the predictions about scope and productivity contained in the literature. Although no relationships were expected between scope and employee attitude, several of the associations with less favorable evaluations of the union's process, lower perceived influence in decision making, and greater dissatisfaction with union leaders.

TABLE D-2, ZERO-ORDER CORRELATIONS BETWEEN BARGAINING UNIT STRUCTURE DIMENSIONS AND THE OUTCOME VARIABLES

Outcome or Consequence Variable	Size	Fragmentation	Scope (Occupational = 0/ Departmental = 1)
Member evaluation of the union's process	-.14	.45***	-.58****
Union member influence in decision making	-.22	.44***	-.57****
Satisfaction with union efforts on their behalf	.02	.25	-.17
Satisfaction with the union leadership	-.12	.32*	-.43***
Employee perceptions of organizational adaptability	-.33*	-.31*	.01
Employee job satisfaction	-.24	-.26	.04
Employee commitment to the employing organization	-.24	-.26	-.06
Frequency of contract renegotiation	.17	.32*	-.13
External influences in bargaining	.70****	.53****	-.56****
Length of contract negotiations	.03	-.22	.19
Employee satisfaction with the way organization policies are put into practice	-.24	-.47****	.21
Labor-Management relationship pattern	.10	.34*	-.38**
Number of strikes	.66****	.73****	-.46****
Grievances per employee	-.07	-.40**	.28
Manager perceptions of organizational adaptability	.12	-.19	.12
Revenue vehicle hour per driver hour	-.38**	-.29*	.23
Operating expense per revenue vehicle hour	.37**	.43**	-.39**

* $p < .10$
** $p < .05$
*** $p < .025$
**** $p < .01$

Multiple regression equations for each of the outcome measures are presented in Table D-3. In several instances, partial correlations indicated that some structure-outcome associations might be spurious, the result of a third, unmeasured variable. Thus, organizational size and government type were entered into six equations as control variables.

Only a small portion of the individual variables, and four full equations, attain statistical significance. However, traditional criteria of statistical significance might be somewhat misleading in interpreting the strenght of these relationships. All variables in the study were measured essentially at the bargaining unit, or aggregated, level. Thus, the self-report measures consist of averaged responses to questionnaires within each participating organization. While this approach provides for comparability among the self-report and objective performance measures, selection of the organization as the unit of analysis for all comparisons entails some sacrifice in statistical significance even where correlations seem substantial.

The control variables are significant (at $p < .10$) in only two instances, but they also diminished the significance of other independent variables from their bivariate levels. As equations 2 and 3 in Table D-3 indicate, the variations in employee attitudes about their union are to some extent a function of the type of governmental structure within which they are embedded. Transit employees in municipal governments appear to be less satisfied with the efforts of their union and with their influence in decision making. The bargaining unit structure dimensions are no longer significant when government type is used to control the relationships between the structural vari ables and frequency of formal contract renegotiation. This reflects the preference of municipal government officials to enter into one-year agreements that are tied to their budget cycle. After this source of variance is controlled, bargaining unit structure no longer explains a significant amount of variance. Controlling for size in the regressions for number of strikes, external influences in bargaining, and operating expense per revenue vehicle hour similarly diminishes the strength of some of the structure-outcome relationships. Nevertheless, even when size is controlled, fragmentation remains a significant ($p < .025$), determinant of the number of strikes and scope varies significantly ($p < .10$) with external influences.

TABLE D-3, MULTIPLE LINEAR REGRESSIONS FOR SELECTED OUTCOME VARIABLES AND THE STRUCTURE DIMENSIONS

	INDEPENDENT VARIABLES								
	CONTROL VARIABLES		STRUCTURE VARIABLES						
DEPENDENT VARIABLES	ORGANIZATIONAL SIZE (# of revenue vehicles)	GOVERNMENT TYPE (0 = special district 1 = municipal government)	UNIT SIZE	Fragmentation	Scope	CONSTANT	N	R^2	F
1. Member Evaluation of the Union's Process			-.41**	.31	-.47*	4.85	21	.47	5.36****
2. Member Influence in Decision Making		-.31*	-.54****	.30	-.45**	4.27	21	.63	7.12****
3. Satisfaction with Union Efforts		-.34	-.16	.25	.03	4.30	21	.18	.95
4. Satisfaction with Union Leadership			-.32	.21	-.36	4.77	21	.26	2.12
5. Adaptability as Perceived by Employees			-.19	-.54*	-.42	5.57	21	.24	1.90
6. Employee Job Satisfaction			-.16	-.28	-.20	5.29	21	.09	.60
7. Employee Organizational Commitment			-.20	-.23	-.28	5.06	21	.10	.64
8. Employee Satisfaction with Organizational Policies			-.05	-.48	-.14	4.12	21	.18	1.32
9. Length of Most Recent Contract Negotiations			.17	-.24	.11	3.11	23	.07	.56
10. Frequency of Formal Contract Renegotiation		-.41*	-.01	.28	.13	27.75	23	.26	1.64
11. Labor-Management Relationship Pattern			-.10	.23	-.28	2.57	23	.18	1.45
12. Number of Strikes	.63		.17	.40***	-.12	.35	23	.71	11.67****
13. External Influences in Bargaining	.30		.29	.07	-.31*	2.38	23	.62	7.88****
14. Grievances per Employee			.16	-.50	-.03	1.97	21	.18	1.35
15. Adaptability as Perceived by Managers			.29	-.35	.02	5.25	23	.11	.86
16. Revenue Vehicle Hour per Driver Hour			-.31	.09	.09	1679.88	22	.17	1.29
17. Operating Expense Per Revenue Vehicle Hour	.93		-.70	.18	-.17	23.13	21	.31	1.87

*p < .10
**p < .05
***p < .025
****p < .01

Although only four of the 17 equations are significant, these four regression equations represent a diverse set of outcome measures--union member evaluation of the union's process, union member influence in decision making, number of strikes, and external influences in bargaining. These results lend partial support to both labor and management prescriptions about bargaining unit structure. The union member attitudes are clearly consistent with union arguments for smaller units and a unit scope reflecting a homogeneous community of interest. On the other hand-the positive association between fragmentation and strikes militates for the management preference for consolidated bargaining units.

DISCUSSION

Although selective results are supportive of generalizations found in the literature, the overall results simply do not confirm many of the prevailing beliefs about bargaining structure-outcome relationships. This finding might be a function of the particular service we investigated--public mass transit--and follow-on research will have to ascertain the generalizability of our results. However, in a related assessment of unit structure-outcome relationships, Gerhart (1976) found no significant relationship between bargaining unit scope and an index of contract outcomes across different government functions. He concluded that unit structure is an outgrowth of government function and, therefore, has no independent influence on bargaining outcomes. The results of the present study indicate that, even within a government function characterized by signficant variations among bargaining units, structural variations are weakly associated with organizational outcomes. If these results might, in fact, be generalized, it would be worthwhile to speculate about explanations for our finding of "little effect".

One explanation is methodological. Since we used linear satistical techniques, non-linear relationships among the variables could account for observed levels of association. We inspected bivariate scattergrams and tested multiplicative interaction terms in the regressions, but we were unable to confirm any non-linear relationships. Despite our inability to

confirm the presence of such relationships using a small sample, their presence remains a distinct possibility. For example, a "threshold effect", suggesting that only an extreme fragmentation of units appreciably affects outcomes, might be the functional form for most fragmentation-outcome relationships. This type of functional relationship would account for the strong management pressures for unit consolidation in a few jurisdictions like New York City and the federal government, but the absence of strong pressures for consolidation in many other jurisdictions.

Another explanation for the lack of congruence between our results and some of the generalizations found in the literature is that the individual and organizational consequences of poorly designed bargaining units may be transitory. Bargaining unit structure may have temporary or passing effects on organizational and individual outcomes, but the parties might adjust, over time, to these limitations of the unit structure. For example, consider the situation in which a small group of employees is organized, within a large bargaining unit, with employees that do not generally share thier interests. Although the unit structure may not provide an initially satisfatory vehicle for representation of the minority group, their interest might well be satisfied by special arrangements within the union as the bargaining relationship evolves.[1]

An alternative reason for the paucity of significant structure-outcome associations is that our sample might have contained both "appropriate units" and "units of convenience". Some of the bargaining units in our sample were no doubt certified primarily on the basis of existing organizational arrangements and not as a result of a thorough consideration of their appropriateness. This might have introduced some confounding variance into the structure-outcome relationships. However, this distinction between appropriate and convenient units also points to another shortcoming in our understanding of structure-outcome linkages. If the parties agree upon a a unit or set of units, regardless of the design flaws in the abstract,

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[1] The literature on bargaining unit structure generally treats the structure-outcome relationships as relatively static and unchanging. However, as Anderson (1979) emphasizes in a recent study, we could well err in our generalizations if we do not consider what changes occur in the industrial relations system and the relationships between the parties with the passage of time.

should their agreement be administratively overridden? Is participant acceptance an important contingency that is likely to affect structure-performance relationships? Although existing theory and empirical research provide no answers for these questions, it seems intuitively reasonable that acceptance would be an important contingency.

Aside from these possible explanations for the results of the present study, the findings possibly indicate why multi-employer bargaining has not been more widely used in the public sector (Feuille, Juris, Jones and Jedel, 1977). The propensity to establish multi-employer structures would logically be a function of the benefits to management. Since bargaining unit structure is related to few outcomes salient to management (the primary being strikes), there would appear to be little incentive for employers to join forces with one another for collective bargaining.

CONCLUSIONS

This study has evaluated some common assertions about the consequences of different bargaining unit structures using a sample of public mass transit organizations. Although a large share of these common assertions could not be confirmed, several bargaining structure-outcome relationships were found to be significant. Specifically, union member attitudes toward their union and their influence within the union tend to be more positive as unit size decreases and unit scope narrows. Strike frequency is a positive function of bargaining unit fragmentation.

The overall results suggest the need for a different orientation toward how unit structure-outcome relationships are conceived. Given the perspective of our results, it appears that discussions of bargaining structure-outcome relationships have been much too deterministic. Too many variables may intervene between bargaining unit structure and individual and organizational outcomes for the relationships to be depicted so simply. Even in the absence of relatively more complex causal chains, we have indicated that the parties are likely to adapt and adjust to poorly designed units. We have also suggested that the "appropriate" unit might be a function of history and its acceptance by the parties, as much as it is a function of size, scope, and fragmentation.

Our results point to some obvious needs for future research. Since this is one of only a few empirical studies of bargaining unit structure, future research is needed to replicate these findings, using larger samples and different occupations and services. Additional research must be focused on developing a better understanding of the historical and interparty correlates of effective bargaining unit designs. Still other research must focus on how bargaining units are adapted to the needs and experiences of the parties.

ATTACHMENT 1

MEASUREMENT OF THE STUDY VARIABLES

Member Evaluation of the Union's Process

The Organizational mean for a summated, 7-point, rating scale created from the responses (ranging from "strongly disagree" to strongly agree") of union or employee association members to the following questionnaire items:

1. Members of the union are afraid to express their real views in union meetings (reverse scored).
2. The union is known for not getting much done (reverse scored).
3. In the union, everyone's opinion gets listened to.
4. Decisions are made in the union without ever asking the people who have to live with them (reverse scored).
5. In general, I like the way the union handles things.
6. I feel free to tell the union leaders what I really think.
7. The way local officers are chosen is fair.
8. I am satisfied with the way issues are selected for collective bargaining.
9. I feel I can influence union decisions.
10. I am satisfied with the way the union communicates with members.

The average intercorrelation for the responses is .43 and the average item-total correlation is .62. Coefficient alpha for the scale is .89.

Union Member Influence in Decision Making

The organizational mean for a summated, 7-point, rating scale created from the responses (ranging from "little or no influence" to "a great deal of influence") of union or employee association members to the following questionnaire items:

1. Deciding to file a grievance which concerns you.
2. Deciding to take a grievance which concerns you to arbitration.
3. Nominating people to run for local office in the union or association.
4. Placing an issue on the agenda of union or association meetings.
5. Deciding who will serve on local union committees.
6. Deciding which issues will be brought up in bargaining.
7. Deciding which issues to drop or compromise during bargaining.
8. Deciding to call a union meetign.
9. Spending local union funds.
10. Hiring permanent union employees.
11. Deciding who to support if two union members conflict in a grievance
12. Deciding how to deal with other unions in the organization.

The average intercorrelation for the responses is .48 and the average item-total correlation is .67. Coefficient alpha for the scale is .92.

Satisfaction With Union Efforts on Their Behalf

The organizational mean for a summated, 7-point, rating scale created from the responses (ranging from "very dissatisfied' to "very satisfied") of union or employee association members to the following questionnaire items:

1. Safer working conditions.
2. Fairer discipline procedures.
3. Fairer promotion policies
4. Better fringe benefits.
5. Better overtime schedules.
6. Fairer policies for reductions in the work force.
7. Improved sick leave policies.

8. Pay raises.
9. Improvements in physical working decisions.
10. Improved grievance procedures.
11. More participation in job-related decisions.
12. More challenging jobs.
13. Fairer work loads.
14. More meaningful work.

The average intercorrelation for the responses is .52 and the average item-total correlation is .70. Coefficient alpha for the scale is .94.

Satisfaction with the Union Leadership

The organizational mean for a summated, 7-point, rating scale created from the responses (ranging from "strongly disagree" to "strongly agree") of union or employee association members to the following questionnaire items:

THE LEADERS OF THIS UNION OR ASSOCIATION...

1. ...are effective in handling grievances.
2. ...encourage members to speak up when they disagree with a union decision.
3. ...keep informed about how members think and feel about union matters.
4. ...are respected by the members.
5. ...encourage members to participate in important decisions.
6. ...help solve potential grievances before they are filed.
7. ...spend funds wisely.
8. ...stick up for members.
9. ...are effective in negotiating contracts.
10. ...are trusted by members.

The average intercorrelation for the responses is .60 and the average item-total correlation is .75. Coefficient alpha for the scale is .94.

Employee Perceptions of Organizational Adaptability

The organizational mean for a summated, 7-point, rating scale created from employee responses (ranging from "strongly disagree" to "strongly agree") to the following questionnaire items (modified versions of those used by Mott, 1972):

1. People in this organization do a good job anticipating problems.
2. People in this organization do a good job in keeping up with changes in new equipment and new ways of doing things.
3. When changes are made in routines and equipment, people adjust to these changes quickly.
4. People in this organization do a good job coping with emergency situations brought on by accidents, equipment and labor problems, or other factors that might cause temporary work overloads.

The average intercorrelation for the responses is .50 and the average item-total correlation is .61. Coefficient alpha for the scale is .80.

Employee Job Satisfaction

The organizational mean for a summated, 7-point, rating scale created from employee responses to the short from of the Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Dawis, England & Lofquist, 1967). The average intercorrelation for the responses is .34 and the average item-total correlation is .56. Coefficient alpha for the scale is .91.

Employment Commitment to the Employing Organizations

The organizational mean for a summated, 7-point, rating scale created from employee responses to Porter's Organizational Commitment Questionnaire (Porter, Steers, Mowday & Boulian, 1974). The average intercorrelations

for the responses is .33 and the avergae item-total correlation is .57. Coefficient alpha for the scale is .90.

Frequency of Contract Renegotiation

Average number of months between contract renewal dates, for the eight most recent contract periods (or for as many as applicable, for organizations recording fewer than eight contracts).

External Influences in Bargaining

Account of yes responses by mangers to ten trichotomous questionnaire items (don't know responses were permitted):

1. Transit officials took actions outside of negotiations that weakened management's bargaining position.
2. City or county officials took actions outside of negotiations that weakened management's bargaining position.
3. Labor representatives discussed bargaining demands with transit officials who were not on the management bargaining team.
4. Labor representatives discussed bargaining demands with city or county officials who were not on the management bargaining team.
5. Community interest groups became involved in the bargaining.
6. Elected officials overturned agreements that had been reached in bargaining.
7. Elected officials failed to implement agreements that had been reached in bargaining.
8. Elected officials directly intervened in an attempt to mediate an impasse.
9. Labor attempted to use the news media to influence negotiations.
10. Management attempted to use the news media to influence negotiations.

The average intercorrelation for the responses is .42 and the average item-total correlation is .60. Coefficient alpha for the scale is .87. Organization scores were created by taking the mean response of all managers responding for a particular organization.

Length of Contract Negotiations in Months

Duration, in months, of most recent contract negotiations between the transit operators' bargaining unit and management.

Employee Satisfaction with Policies

The organizational mean for employee responses to the following item from the MSQ: "The way organization policies are put into practice."

Number of Strikes

Count of the number of strikes or lockouts experienced at the organization from January, 1970 to July, 1977.

Grievance Incidence

Organizational mean of employee responses to the following question:

Have you filed a grievance in the past two years (yes/no)?

Labor-Management Relationship Pattern

Each participating transit organization was assigned two labor-management relationship (LMR) pattern scores; one was computed by averaging the LMR scores for the Key managers at that property, and the other was the average of labor leader scores for the same property, (Perry, Angle, & Pittel, 1979). In order to categorize the participating transit organizations into three characteristic relationship patterns (i.e. containment-aggression, accommodation, cooperation), organizations were trichotomized, based on equal probability distributions, twice. The first trichotomization was based on transit manager scores; the second was based on labor leader scores. An organization was categorized in the middle group (accommodation) unless both the manager score and the labor leader score placed the organization in the upper one-third (cooperation) or lower one third (containment-aggression). This procedure resulted in 5 organizations being categorized "cooperation;" 7 being categorized "containment-aggression;" and the remainder (12) "accomodation." The product-moment correlation

between labor leaders' and managers' relationship pattern rating was .84.

Manager Perceptions of Organizational Adaptability

Created in the same way and with the same items as the employee measure of adaptability. The average intercorrelation for the responses is .55 and the average item-total correlations is .66. Coefficient alpha for the scale is .82.

Revenue Vehicle Hours per Driver

The number of hours in which vehicles were in service, 1976-77/the total regular and overtime hours recorded for vehicle operators, 1976-77.

Operating Expense per Revenue Vehicle Hour

Ratio of the operating expense to total number of revenue-vehicle hours, 1976-77.

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