

Keywords: Psychological ownership
Employee ownership
Compensation
Productivity

Principal Investigator:
Peter B. Thompson, Ph. D.
Clinical Assistant Professor
Department of Managerial Studies
University of Illinois at Chicago
601 S. Morgan St. M/C 243
Chicago, IL 60607-7123
(312) 996-4481
pthomp1@uic.edu

ABSTRACT

The proposed laboratory study is designed to fill in a gap in the employee ownership literature by *simultaneously* testing the (1) effect of various forms of employee ownership on *group* productivity, and (2) the effect of different forms of ownership on *individual* perceptions, attitudes, and behaviors. Unlike existing research, in which individual-level data and firm-level data have been collected in separate studies, data collected from two levels simultaneously makes it possible to make causal inferences across two levels of analysis. Further, using a true experimental design in a controlled setting makes it possible to conclude that differences in group productivity were due to differences in the treatment conditions.

The hypotheses predict that groups in which participants experience actual ownership—combined with participation in decision making—will be more productive than groups lacking an ownership experience. If the hypotheses are confirmed, the study will demonstrate for the first time the *psychological ownership*→[*individual perceptions + behavior*]→*collective productivity* causal chain.

This proposed study is unique in that it (1) fills in a gap in the employee ownership literature by demonstrating causality between individual-level perceptions, attitudes and behaviors and group-level outcomes; (2) employs the laboratory method; (3) uses two experimental designs simultaneously, one for each level of analysis; and (4) tests an untested theory of psychological ownership.

PURPOSE OF STUDY

The purpose of the proposed study is to address gaps in the empirical literature of employee ownership. This will be accomplished by *simultaneously* measuring (1) the effect of group-level ownership on individual perceptions, attitudes and behaviors, and

(2) the effect of those individual-level variables on group-level outcomes. That is, to study the employee ownership phenomenon at two levels of analysis.

THE PUZZLE OF EMPLOYEE OWNERSHIP

Existing Literature

Although employee-owned companies tend to perform better than conventionally-owned companies the causal mechanism of this phenomenon remains unclear. A frequent claim for employee ownership in general, and employee stock ownership plans (ESOPs) in particular, is that it causes (or at least contributes to) extraordinary productivity and superior economic performance. The generally accepted explanation is that employee ownership affects the perceptions, attitudes and behaviors of employees such that they increase their effort (“working harder”) and engage in productivity-enhancing cooperative behaviors including information sharing, mutual monitoring and support (“working smarter”). Enhanced human and social capital then interact to produce superior group- and firm-level outcomes. A considerable amount of empirical evidence supports this claim (Blasi, Conte and Kruse, 1996; Bonin, Jones and Putterman, 1993; Carberry, 2011; Freeman, 2007; Kruse and Blasi, 1997; Kruse, Freeman, and Blasi, 2010).

However, because empirical data has come from two distinct types of studies—firm-level comparisons between ESOP and non-ESOP companies, and individual-level studies of aggregated employee perceptions and attitudes—it has not been possible to show how individual-level variables contribute to collective outcomes.

Firm level studies. The basic finding of the firm-level studies is that, on average, employee-owned companies are more efficient than conventionally-owned companies. They tend to produce superior outcomes on measures such as profit, return on investment, employment, productivity, and the cost of workman’s compensation premia. But, employee ownership by itself is no guarantee of superior financial outcomes: some employee-owned companies appear to perform worse than (or no better than) conventionally-owned concerns. Moreover, employee ownership alone does not appear to enhance performance. Instead, evidence indicates that superior performance is the result of employee ownership combined with internal processes such participatory management practices. Further, not all investigators report positive results: some studies found no performance differences between employee-owned and conventionally-owned companies, and a small number found a negative relationship.

Individual level. At the individual-level of analysis, two types of comparisons predominate the literature: (a) aggregated before-and-after individual-level observations of perceptions of and attitudes toward an ESOP; and (b) comparisons between groups consisting of ESOP participants and non-participants on those individual-level variables. The basic findings of this stream of research has been that (a) on average, employees’ perceptions and attitudes toward employee ownership become more positive after the implementation of an ESOP; and (b) the average satisfaction of groups of employees who participated in an ESOP is greater in comparison to groups who did not participate. (NB: satisfaction with an ESOP, not job satisfaction.) Taken together, this group of

studies tend to show a positive relationship between the existence of an ESOP and favorable perceptions and attitudes.

The Unanswered Question: Employee Ownership is Efficient, But Why?

Although the empirical evidence has painted a convincing picture of a positive relationship between employee ownership and organizational outcomes, the total picture is lacking for two reasons: In the first type of study, comparisons between ESOP and non-ESOP companies are based solely on firm-level data, which means that the firm is treated as a black box, with the result that the *intra-firm processes* by which an ESOP engenders above-average performance remain unobserved. Similarly, the second type of study focuses on individual-level variables such as perceptions, attitudes, and self-reported behavior. But although these individual-level studies give us a peek inside the black box at some of the mechanisms that may lead to productive individual and group behavior, they ignore firm-level outcomes. Disregarding the causal relationship between levels is a fundamental shortcoming in the body of employee ownership research, because *causality in a multi-level system cannot be clearly demonstrated without simultaneous measurement of company-level, that is Level-2 phenomena (type of ownership), and individual level, that is Level-1 phenomena (perceptions and attitudes), together with Level-2 outcomes*. There is no study of which I am aware that *simultaneously* measures individual perceptions and attitudes, measures relevant intra-group structures and processes, measures group- or firm-level performance outcomes, and that identifies and measures comparable results for a comparison sample of firms or groups. This proposed study addresses this gap in the literature.

Theory

Pierce, Rubinfeld, and Morgan (1991) theorized that psychological ownership results from the experience of enjoying three rights: the right to influence the object owned, the right to information about the object, and the right of equity (i.e., return on investment). The right to influence may be realized as participation in decision-making, empowerment, autonomy, or any organizational arrangement where a worker has some control over his or her work environment. As an owner, he or she has a say in how his or her work is done. The right to information is often realized as obtaining financial statements (complete or summarized), operating information, and even strategic information from senior management. As owners, employees are shareholders, and have the same information rights as any shareholder in a corporation. Obviously, some companies are more forthcoming with information than others. Under ERISA, the minimum requirement is a once-a-year plan statement, the choice of many ESOP companies. Other ESOPs provide extensive financial data, and educate ordinary employees so that they are able to understand it.

Actually, it is more complicated than that. Technically, the ESOP trust holds company shares in trust for the benefit of the employees, and votes their shares on their behalf. However, many ESOPs pass those voting rights through to the employees. Thus, the degree of influence is determined partly by the extent of those pass-through rights.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

Ownership also entails the right to a return from the object owned. With respect to company stock, return on investment is the increase in the value of the stock, if any, and dividends, if any. Owners also bear the risk of loss.

According to their theory, the presence of these three rights constitutes psychological ownership, which increases organizational commitment, which in turn affects both individual and group outcomes. Throughout much of the employee ownership literature, *psychological ownership* is thought to be a major factor in the *employee ownership*→*superior performance* causal chain. To test this theory, the proposed experiment measures the effect of *psychological ownership* on organizational commitment, and individual and group performance.

The model proposed by Pierce et al. (1991) is extensive,³ and much of it is not suitable for testing in the laboratory. The proposed experiment tests just the feasible parts of the model (See Figure 1, below).

Research questions. Thus we ask three questions: (1) whether type of ownership affects psychological ownership; (2) whether psychological ownership increases commitment; and (3) whether commitment affects group outcomes (cooperative behaviors, work group norms, peer pressure, productivity) and individual outcomes (positive affect, positive attitudes, motivation, individual productivity.)

Predictions. When all three rights are present, the theory predicts that organizational commitment and productivity will result. Therefore, one would expect that the treatment group (i.e., type of ownership) enjoying all three rights will be more productive than those enjoying only two rights, and those enjoying two rights will be more productive than those enjoying just one right. The control group lacking all of the rights will be the least productive. Further, we would expect that the effects of the ownership types are cumulative, so that over time those enjoying the three rights will increase productivity, while in the other groups productivity will remain flat or decline.

METHODS

Sample

The experiment is open to all members of the UIC community who are over 18 and have the use of their hands (so they can fold origami paper). Participants will be recruited by means of flyers, in-class announcement, and the daily e-mail announcements broadcast to the entire university. Other than obtaining expected results, recruiting participants is the most uncertain part of the experiment; recruiting announcements from many departments, including the medical and health science schools, regularly appear in the broadcast emails suggesting that invitations for this study will compete with other announcements.

Because the experiment is open to all individuals connected with the university (faculty, all staff, and students), one may (tentatively) conclude that any results are representative of a diverse set of individuals with respect to age, gender, educational

³ Here is a link to their paper:

<http://www.jstor.org/discover/10.2307/258609?uid=3739656&uid=2129&uid=2&uid=70&uid=4&uid=3739256&sid=21102692046947>

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

attainment, and work experience. As to that, a large proportion of students at the university have full or part-time jobs. Their work experience differentiates them from the stylized ‘sophomore psychology student’ shortcomings of research in institutions of higher learning.

Research Design

The study utilizes a laboratory for testing the model of Pierce et al. (1991). Archival data of this sort do not exist, and a field study would be a monumental undertaking. Alternatively, a lab experiment has the capability of isolating variables of interest, with the usual shortcomings, as noted below.

Treatments

Real effort. Consistent with the lab practice of behavioral economists, participants will engage in a real-effort task and be offered non-trivial compensation for their efforts. In order to make the lab experience as real-life as possible, the level of compensation is commensurate with semi-skilled part-time work in the Chicago area. Real-effort is operationalized as assembling origami figures by hand. The intent is to mimic, insofar as psychological ownership is concerned, the conditions that are found in ESOPs, cooperatives, piece-rate regimes, and conventional wages-plus-raises regimes.

Independent variable: Types and degrees of ownership. After completing a preliminary questionnaire capturing demographic variables, volunteers will be randomly assigned to one of five treatment groups, given instructions and other materials they will require. Instructions are to make as many origami figures as then can against the clock. The number of figures made (productivity) constitutes the pre-test measure. Depending on treatment group, participants will get the opportunity (or not) in subsequent rounds to make financing and marketing decisions and to bear the risks of their decisions.

Dependent variable: Productivity. The group outcome variable will be a measure of group productivity, and the treatment variable will be different forms of (simulated) employee ownership and participation in decision-making. This will be accomplished by manipulating type-of-ownership in a simulated (i.e., laboratory) manufacturing environment, and measuring quality and quantity of figures produced. There are four experimental conditions and one control condition. The individual outcome variable will be measures of perceptions of the right to information, control, and equity (financial return). These three are components of “psychological ownership” as proposed by Pierce, Rubinfeld, and Morgan (1991).

“Black box” variables: Psychological ownership, commitment, affect, attitude, motivation, participation, individual productivity.

The five treatment groups are: I: ownership with participation, II: ownership without participation, III: voluntary ownership (cooperative), IV: no ownership (piece rate compensation) V: no ownership (wages with raises).

Level 1 Measures

Note that variables are measured at two levels of analysis. All measures except productivity will be obtained using paper and pencil self-reports.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

- **Psychological ownership.** The extent to which participants perceive that they have influence, information, and an equity stake in the outcome during the experiment. (N.B. The equity stake is paid in cash.)
- **Commitment.** Participants' reports of how committed they believed themselves to be during the experiment.
- **Affect.** Participants' reports of how they felt during the experiment.
- **Attitude.** Participants' reports of their positive and negative attitudes regarding the experiment.
- **Motivation.** Participants' reports of the extent of their motivation during the experiment.
- **Participation.** Participants' reports of their level of participation
- **Productivity.** Participants' count of the number of figures s/he produced. (This can be checked by the experimenter or assistant.)

Level 2 Measures

- **Group processes.** Group processes will be measured using participants' perceptions of *others'* commitment, attitudes, and participation.
- **Group productivity.** Physical count by experimenter or assistant of figures produced.

Analysis

A simple one-way ANOVA should be sufficient for determining whether productivity is affected by *type of ownership*. Subsequent analyses, using multiple regression with control variables, would yield additional information about differences in effect sizes. To track the ongoing effects of the treatments (there are three trials), a within-subjects ANOVA would yield testable statistics. Because each treatment presents a slightly different experience over time, one can compare the longitudinal effects of ownership type. Hierarchical linear analysis would not only test whether *type of ownership* affects individual-level variables differently, but could also spotlight the degree of differences among the variables owing to type. To determine how individual level variables aggregate to produce group outcomes, structural equation modeling is suitable.

Expected Outcomes

If the predictions are supported by the data, researchers and managers can be more confident in the power of employee ownership to affect positively individual and firm outcomes. Further, it will tend to fill in some of the blank spaces in the roadmap from conventional ownership to successful employee ownership.

In addition, the study has the potential to open up new avenues of investigation. Researchers may be inspired to experiment with a variety of management-related variables in the laboratory. Others may be inspired to replicate the study in the field. This study has the potential to be a watershed in employee ownership research.

Limitations

Generalizability. By their nature, laboratory studies do not necessarily generalize to real-life phenomena. Isolating participants in a sterile setting removes any verisimilitude regarding the experiences of live employees in real companies; the artificiality of the

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

setting makes any comparison to real experience questionable. On the other hand, the feasibility of measuring psychological ownership among scores of employees in dozens of firms is, as a practical matter, so resorting to the lab is an acceptable accommodation until practical obstacles can be overcome. Generalizability to all firms with some form of employee ownership is further limited because this study focuses on just three forms of employee ownership, thereby omitting other forms. Conventional ownership is mimicked in the control condition.

Construct validity. There is no guarantee that the participants will experience anything akin to psychological ownership during their few hours in the lab. To the extent that the perceptions, attitudes, and behaviors of study participants represent those of employees in the field, the results may be only tentatively generalized. An exploratory study such as this cannot be expected to hit all of its markers; rather, subsequent studies are sure to refine and improve the validity of treatment conditions.

Institutional Review Board Approval

This research has received approval from the UIC Office for the Protection of Research Subjects (Protocol #2012-0664).

NOVEL CONTRIBUTION

New data set. The study is expected to be a source of new data. What is different is that it will come from two levels of analysis collected simultaneously so that the relationship between individual-level variables and collective outcomes is made clear.

Multi-level focus. In order to overcome single-level shortcoming in the literature, group-level variables, individual level effects, and group-level effects are measured simultaneously.

Multiple levels of analysis. The necessity of taking level into account cannot be ignored in management research (Rousseau, 1985; Kozlowski and Klein, 2000). Behavior is influenced by context, so a complete understanding of behavior requires taking context into account. This experiment will contribute to our understanding of the interaction of context with individual outcomes.

Experimental control. This study is also novel in that it utilizes a laboratory method to compare different forms of ownership side by side with controls that are not possible in a field study. By moving empirical research into the laboratory, a host of confounding factors may be eliminated.

Experimental design. The study will employ two designs, one for each level of analysis. The *Pretest-Posttest Control Group Design*, i.e. a “true experimental design” will be used for testing group level outcomes, and the *Posttest Only Control Group Design* will test for individual level outcomes (Campbell and Stanley, 1963).

Controls. Individual differences may have an effect on psychological ownership, so self-efficacy/expectancy, affect, perceptions, attitudes, motivation, and demographic data will be collected and incorporated into statistical analyses to determine if they affect predicted outcomes.

IMPLICATIONS FOR PRACTICE

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

Because of the gaps in the empirical literature, neither scholars nor managers can be confident of knowing which factors lead to the well-documented superior performance of employee-owned companies. Thus, managers may be reluctant to institutionalize employee ownership, while scholars' understanding of the internal mechanisms that drive performance remain speculative. With the results of the proposed study in hand, managers will have guidance for achieving the full potential of employee ownership for their companies, whereby employees, managers, and outside shareholders (if any) will all benefit. It is generally agreed that employee ownership promises a win-win outcome for all stakeholders.

If the data confirm Pierce and his colleagues' (1991) model, then managers have a rationale and a template for structuring an ESOP (or other ownership structure) in which participation in decision-making is encouraged, financial information is shared with employees, and employees bear the risk and reward of ownership resulting from the changing fortunes of the company's stock. These are not easy tasks. This author has observed the diversity of attempts to implement these practices as displayed at The ESOP Association's Annual Conferences. Many companies have been successful, others have not. To the extent that these laboratory data can confirm causation between ownership, individual outcomes, and group outcomes, human resource managers in employee-owned companies will be able to contribute to their success.

RELEVANT LITERATURE

- Al-Saigh, N. M. and Buera, A. M. 1990 Privatization in the arab world: prerequisites for success. *International Review of Administrative Sciences*, 56, 125-135.
- Alderfer, C. P. (1972) *Existence, Relatedness, and Growth: Human Needs in Organizational Settings*. New York: Free Press.
- Alperovitz, G. (1997) The old socialist idea and the new century. *Peace Review*, 9, 41-48.
- Bell, L. and Kruse, D. (1995) Evaluating ESOPs, profit sharing and gain sharing plans in U.S. industries; A report to the U. S. Department of Labor, Washington, D.C.: U.S. Department of Labor.
- Ben-Ner, A. (1988) The life cycle of worker-owned firms in market economies: A theoretical analysis. *Journal of Economic Behavior and Organization*, 10: 287-313.
- Ben-Ner, A. and Jones, D. C. (1995) Employee participation, ownership, and productivity: a theoretical framework. *Industrial Relations*, 34, 532-54.
- Blasi, J., Conte, M. and Kruse, D. (1992) The new owners: Stock price performance for public companies with significant employee ownership. *Journal of Employee Ownership Law and Finance*, 4: 95-130.
- Blinder, A. S. (1990) Introduction. In Blinder, A. S. (Ed.) *Paying for productivity: A look at the evidence*. Washington, D. C.: The Brookings Institution.
- Bloom, S. M. (1985) *Employee Ownership and Firm Performance*. Unpublished doctoral dissertation, Department of Economics, Harvard University.
- Bonin, J. P., Jones, D. C. and Putterman, L. (1993) Theoretical and empirical studies of producer cooperatives: with the twain ever meet? *Journal of Economic Literature*, 31: 1290-1320.
- Bradley, K. (1986) Employee-ownership and economic decline in western industrial democracies. *Journal of Management Studies*, 23, 51-71.
- Brohawn, D. K. (1997) *Journey to an Ownership Culture: Insights from the ESOP Community*. Washington, D. C.: The ESOP Association and Scarecrow Press, Lanham MD & London.
- Buchko, A. A. (1993) The effects of employee ownership on employee attitudes: an integrated causal model and path analysis. *Journal of Management Studies*, 30, 633-657.
- Campbell, D. T. and Stanley, J. C. *Experimental and Quasi-experimental Designs for Research*. Chicago: Rand McNally.
- Carberry, E. J. (2011) *Employee Ownership and Shared Capitalism*. Urbana-Champaign, IL: University of Illinois at Urbana-Champaign, School of Labor and Employment Relations.
- Case, J. (1995) *Open- Book Management*. New York: HarperCollins Publishers.
- Chaplinsky, S. and Niehaus, G. (1990) The tax and distributional effects of leveraged ESOPs. *Financial Management (Spring)* 29-38.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

- Chiu, W. C. K. (2003) Employee stock ownership plans and organizational integration among workers in the People's Republic of China. *Human Resource Management Review*, 13, 407-421.
- Coff, R. W. (1997) Human assets and management dilemmas: Coping with hazards on the road to resource-based theory. *Academy of Management Review*, 22, 374-402.
- Coff, R. W. (1999) When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. *Organizational Science*, 10, 119-133.
- Conte, M. A. & Svejnar, J. (1990) Employee ownership plans. In Blinder, A. S. (Ed.) *Paying for productivity: A look at the evidence*. Washington, D. C.: The Brookings Institution.
- Cook, T. D., and Campbell, D. T. (1979) *Quasi-Experimentation: Design & Analysis Issues for Field Settings*. Boston: Houghton Mifflin Company.
- Danserau, F. and Cho, J. (2006) Avoiding the "fallacy of the wrong level." *Group and Organization Management*, 31, 536-577.
- Doucouliafos, C. (1990) Why capitalist firms outnumber labor-managed firms. *Review of Radical Political Economics*, 22: 44-67.
- Doucouliafos, C. (1995) Institutional bias, risk, and workers' risk aversion. *Journal of Economic Issues*, 29: 1097-1118.
- Dugger, W. M. (1987) Democratic economic planning and worker ownership. *Journal of Economic Issues*, 21, 87-99.
- Dunbar, A. E. and Kumbhakar, S. C. (1992) An empirical investigation of the association of productivity with employee stock ownership plans. *Journal of the American Taxation Association*. 22-39.
- Ellerman, D. P. (1984) Theory of legal structure: Worker cooperatives. *Journal of Economic Issues*, 18: 861-891.
- Fama, E. F. and Jensen, M. C. (1983) Separation of ownership and control. *Journal of Law and Economics*, 26: 301-325.
- FitzRoy, F. R., and Kraft, K. (1987) Cooperation, productivity, and profit sharing. *Quarterly Journal of Economics*, 102: 23-35.
- Freeman, S. F. (2007) Effects of ESOP adoption and employee ownership: Thirty years of research and experience. University of Pennsylvania Organizational Dynamics Working Paper #07-01.
- French, J. L., and Rosenstein, J. (1984) Employee ownership, work attitudes, and power relationships, *Academy of Management Journal*, 27: 861-869.
- GAO (General Accounting Office). (1986) *Employee stock ownership plans: Benefits and costs of ESOP tax incentives for broadening stock ownership*. GAO-PEMD-87-8. Washington, DC: U. S. Government Printing Office
- Gates, J. (1998) *The Ownership Solution: Toward a Shared Capitalism for the Twenty-First Century*. Reading, MA: Addison-Wesley.
- Gibson-Graham, J. K. 2003 Enabling ethical economies: cooperativism and class. *Critical Sociology*, 29, 123-161.
- Goldstein, S. G. (1978) Employee share ownership and motivation. *Journal of Industrial Relations*, 20: 311-330.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

- Greenberg, E. S. (1980) Participation in industrial decision-making and worker satisfaction: the case of producer cooperatives. *Social Science Quarterly*, **60**: 551-569.
- Gunn, C. (2000) Markets against economic democracy. *Review of Radical Political Economics*, **32**, 448-460.
- Hammer, T. H., Landau, J. C., and Stern, R. N. (1981) Absenteeism when workers have a voice: The case of employee ownership. *Journal of Applied Psychology*, **66**: 561-573.
- Hammer, T., and Stern, R. (1980) Employee ownership: Implications for the organizational distribution of power. *Academy of Management Journal*, **23**: 78-100.
- Hammer, T., Stern, R., and Gurdon, R. (1982) Worker ownership and attitudes toward participation. In F. Lindenfeld and J. Rothschild-Whitt (Eds.) *Workplace democracy and social change*. Boston: Porter Sargent Publishers.
- Hansmann, H. B. (1990) When does worker ownership work?: ESOPs, law firms, codetermination, and economic democracy. *The Yale Law Journal*, **99**: 1749-1816.
- Howe, C. 1986 The politics of class compromise in an international context: considerations for a new strategy for labor. *Review of Radical Political Economics*, **18** 1-22.
- Jensen, M. C. & Meckling, W. H. (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, **3**, 305-360.
- Keef, S. P. (1994) Employee share ownership and job attitudes: The effects of share sale. *Asia Pacific Journal of Management*, **11**: 91-102.
- Klein, K. (1987) Employee stock ownership and employee attitudes: a test of three models. *Journal of Applied Psychology*, **72**: 319-332.
- Klein, K. J. and Hall, R. J. (1988) Correlates of employee satisfaction with stock ownership: Who likes an ESOP most? *Journal of Applied Psychology*, **73**: 630-638.
- Kozlowski, S. W. J. and Klein, K. J. (2000) A multilevel approach to theory and research in organizations. In Kozlowski, S. W. J. and Klein, K. J. (Eds.) *Multilevel Theory, Research, and Methods in Organizations*. San Francisco: Jossey-Bass.
- Kruse, D. (1988) *Essays on profit sharing and unemployment*. Unpublished doctoral dissertation, Department of Economics, Harvard University.
- Kruse, D. (1992) Profit sharing and productivity: Microeconomic evidence from the United States. *Economic Journal*, **102**: 24-36.
- Kruse, D. L. and Blasi, J. R. (1997) Employee ownership, employee attitudes, and firm performance: A review of the evidence. In *Handbook of Human Resource Management*. Mitchell, D. J. B., Lewin, D. and Zaidi, M. (Eds.) Greenwich, CT: JAI Press.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

- Kruse, D., Freeman, R. and Blasi, J. (2010) *Shared Capitalism at Work: Employee Ownership, Profit and Gain Sharing, and Broad Based Stock Options*. Chicago: University of Chicago Press.
- Lawler, E. (1995) The new pay: A strategic approach, *Compensation and Benefits Review*, 27, 14-22.
- Long, R. J. (1978a) The effects of employee ownership on organizational identification, employee job attitudes, and organizational performance: A tentative framework and empirical findings. *Human Relations*, 31: 29-48.
- Long, R. J. (1978b) The relative effects of share ownership vs. control on job attitudes in an employee-owned company. *Human Relations*, 31: 753-763.
- Long, R. J. (1979) Desires for and patterns of worker participation in decision making after conversion to employee ownership. *Academy of Management Journal*, 22: 611-617.
- Long, R. J. (1980) Job attitudes and organizational performance under employee ownership. *Academy of Management Journal*, 23: 726-737
- Long, R. J. (1981) The effects of formal employee participation in ownership and decision making on perceived and desired patterns of organizational influence: A longitudinal study. *Human Relations*, 10: 847-876
- Long, R. J. (1982) Worker ownership and job attitudes: A field study. *Industrial Relations*, 21: 196-215.
- Mill, J. S. (1871, 1998) *Principles of Political Economy*. New York: Oxford Press.
- Miller, D. E. 2003 Mill's 'socialism.' *Politics, philosophy and economics*, 2, 231-238.
- Mitchell, D. J. B., Lewin D. & Lawler, E. E. (1990) Alternative pay systems, firm performance and productivity. In A. S. Blinder (Ed.) *Paying for Productivity: A look at the evidence (pp. 15-94)* Washington, D. C. Brookings Institution.
- Mygind, N. and Rock, C. P. (1993) Financial participation and the democratization of work. *Economic and Industrial Democracy*, 14, 163-183.
- (NCEO) National Center for Employee Ownership (2008) *Employee Ownership Report*, 28: 5.
- Oliver, N. (1984) An examination of organizational commitment in six workers' cooperatives in Scotland. *Human Relations*, 37: 29-46.
- Oliver, N. (1990) Work rewards, work values, and organizational commitment in an employee-owned firm: Evidence from the U.K. *Human Relations*, 43: 513-526.
- Park, S., and Song, M. H. (1995) Employee stock ownership plans, firm performance, and monitoring by outside blockholders. *Financial Management*, 24: 52-65.
- Pierce, J. L. and Rogers, L. (2003) The psychology of ownership and worker-owner productivity. *Group Organization Management*, 29: 588-613.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

- Pierce, J. L., Kostova, T., and Dirks, K. T. (2001) Toward a theory of psychological ownership in organizations. *Academy of Management Review*, **26**: 298-310.
- Pierce, J. L., Rubenfeld, S. A., and Morgan, S. (1991) Employee ownership: A conceptual model of process and effects. *Academy of Management Review*, **16**: 121-144.
- Quarrey, M. Blasi, J. and Rosen, C. (1986) *Taking Stock: Employee Ownership at Work*. Cambridge, MA: Ballinger Publishing Company.
- Rhodes, S. R. and Steers, R. M. (1981) Conventional vs. worker-owned organizations. *Human Relations*, **34**: 1013-1035.
- Rooney, P. (1992) Employee ownership and worker participation: Effects on health and safety. *Economic Letters*, **39**: 323-328.
- Rosen, C. and Carberry, E. (2003) *Ownership Management: Building A culture of Lasting Innovation*. Oakland, CA: The National Center for Employee Ownership.
- Rosen, C. and Quarrey, M. (1987) How well is employee ownership working? *Harvard Business Review*, Sept/Oct, 126-129.
- Rosen, C. and Rodgers, L. (2007) *The Ownership Edge: How Employee Ownership Can Make Good Companies Great*. Oakland, CA: The National Center for Employee Ownership.
- Rosen, C. and Rodgers, L. (2011) *Fundamentals of Ownership Culture: Practical Ideas for Creating a Great Ownership Company*. Oakland, CA: National Center for Employee Ownership.
- Rosen, C. and Young, K. (1991) Understanding employee ownership. Ithaca: ILRR Press.
- Rosen, C. M., Klein, K. J., and Young, K. M. (1986) *Employee Ownership in America; The Equity Solution*. Lexington, MA: Lexington Books.
- Rosen, C., Case, J. and Staubus, M. (2005) *Equity: Why Employee Ownership is Good for Business*. Boston: Harvard Business School Press.
- Rousseau, D. M. (1985) Issues of level in organizational research: Multi-level and cross-level perspectives. *Research in Organizational Behavior*, **7**, 1-37.
- Rousseau, D. M. and Shperling, Z. (2003) Pieces of the action: ownership and the changing employment relationship. *Academy of Management Review* **28**, 553-570.
- Russell, R., Hochner, A. and Perry, S. E. (1979) Participation, influence and worker-ownership. *Industrial Relations*, **18**: 330-341.
- Shadish, W. R., Cook, T. D., and Campbell, D. T. (2002) *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin Company.
- Smiley, R. W., Gilbert, R. J., Binns, D. M., Ludwig, R. L., and Rosen, C. M. (2007) *Employee Stock Ownership Plans: ESOP Planning, Financing, Implementation, Law and Taxation*. San Diego. Beyster Institute at the Rady School of Management, University of California at San Diego.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

- Sockell, D. (1985) Attitudes, behavior, and employee ownership, some preliminary data. *Industrial Relations*, **24**:130-138.
- Stack, J. (1994) *The Great Game of Business*. New York: Crown Publishing Group.
- Steinherr, A. (1978) The labor-managed economy: A survey of the economics literature. *Annals of Public and Co-operative Economy*, **24**, 129-148.
- Thompson, J. (1967) *Organizations in Action* (New York: McGraw Hill)
- Toscano, D. J. (1983) Toward a typology of employee ownership. *Human Relations*, **7**, 581-602.
- Tucker, J., Nock, S. L., and Toscano, D. (1989) Employee ownership and perceptions of work. *Work and Occupations*, **16**: 26-42.
- Vanek, Jaroslav. 1976 Uncertainty and the investment decision under labor-management and their social efficiency implications. In *Collected Essays on Self-Management*, Ithaca, NY: Cornell University Press.
- Whyte, W. F. and Blasi, J. R. (1982) Worker ownership, participation and control: A theoretical model. *Policy Sciences*, **14**: 137-163.
- Whyte, W. F. and Blasi, J. R. (1984) Employee ownership and the future of unions. *Annals of the American Association of Political and Social Science*, **473**: 128-140.
- Young, K. M., Rosen, C., and Carberry, E. J. (1995) *Theory O: Creating an Ownership Style of Management*. Oakland, CA: The National Center for Employee Ownership.

EMPLOYEE OWNERSHIP IN THE LAB : A MULTI-LEVEL STUDY

