1991

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James E. Cheston

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PROCESSES OF PARTICIPATION IN DECISION MAKING: SELF-EFFICACY AND PERFORMANCE-OUTCOME INSTRUMENTALITIES AS MEDIATING VARIABLES IN THREE LEVELS OF EMPLOYEE PARTICIPATION

by

James E. Cheston

A Dissertation
Submitted to the Faculty of Graduate Studies and Research through the Department of Psychology in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy at the University of Windsor

Windsor, Ontario, Canada
1991
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ISBN 0-315-69874-8
This dissertation is dedicated to my wife, Patti.
Acknowledgements

I would like to express my appreciation to many people who have helped me along my life's path to this point of completing of a doctoral degree. In particular I would like to thank a number of people who have played integral parts preparing me for, and helping me complete this dissertation.

As chairman of my dissertation committee, Dr. Martin Morf has guided me through my doctoral research with expertise and precision. He especially helped me clarify conceptual relations in my work and he was a constant support through my graduate studies. I thank Dr. John LaGaipa for acting as a temporary chairman of my dissertation committee while Dr. Morf was on sabbatical. The support he provided is much appreciated.

Dr. Ray Daly offered theoretical insights and personal support that encouraged me to challenge common perspectives of concepts and relationships. The efforts of Dr. Henry Minton contributed to the conceptual clarity of my dissertation and to my feelings of being supported. As the outside reader on my dissertation committee, Dr. Jim Thacker provided exceptional assistance in the formulation of the research and in helping me to determine and present the findings of the study. I would also like to thank the external examiner, Dr. Marshal Sashkin, for reviewing my dissertation and for his helpful feedback.

Numerous people helped with the actual carrying out of
my research. I thank the administration of Southwestern Regional Centre (SRC), especially Mr. Mike Kinder, for the time and resources provided while allowing me to conduct my research in that facility. This research could not have been completed without the help of the psychometrists at SRC, who took time from their busy schedules to administer questionnaires for me. The cooperation of the residence supervisors and the participation of the residence staff in the research are also very much appreciated. I also want to thank Brenda Roberts, Steve Donaghy, Charles Wilson and Melody Manser for interviewing the research participants.

I also want to acknowledge the members of the dissertation support group. The friendship and support from these people helped me through the graduate school experience. The friendships of Keith and Vern have also supported me, regardless of distances in time and space.

I must also recognize my family for all they have done for me. The love my parents have for me has given me a sense of security and support in all my endeavors. My accomplishments are their accomplishments. My brother and sister, Rod and Gail, have always believed in me and encouraged me in all I have done. I have dedicated this dissertation to my wife, Patti. Her love and support have contributed more to my personal growth and life satisfaction than has anything else. Finally, thank-you, Amelia Rose, for brightening my life as only a daughter like you could.
ABSTRACT

The potential of two variables, performance-outcome instrumentalities and self-efficacy, to mediate the relationships between employees' participation in decision making (PDM) and the outcomes of PDM, job satisfaction and work performance, were investigated within the framework of Dachler and Wilpert's (1978) conceptual model of participation. Sixty-two direct-care workers on eight residences in a large Provincial residential facility for developmentally delayed persons completed the Minnesota Satisfaction Questionnaire (Weiss, Dawis, England & Lofquist, 1967), two scales constructed for the present research to measure instrumentalities and self-efficacy, the Work Locus of Control Scale (Spector, 1988), and a perceived skill-utilization scale (Dowling & O'Brien, 1980). Residence supervisors rated the work performance of residential workers who participated in the research. Two weeks later semi-structured interviews and a perceived group influence scale (adapted from Moch, Cammann, & Cooke, 1983) were administered to subjects in order to classify the eight residential work groups according to the level of PDM used in their routine decision making procedures. Two residences (n=15) that had been involved in a participation intervention two years prior to the present research were classified as Formal Participation residences. Three residences (n=25) were classified as Informal Participation
residences and the remaining three residences (n=22) were classified as Non Participation. Results provided qualified support for positive relationships between PDM and both employees' intrinsic job satisfaction and work performance. No support was found for the potential of instrumentalities to mediate the relationship between PDM and intrinsic job satisfaction, or for employees' self-efficacy beliefs about performing their work to mediate the relationship between PDM and work performance. Ancillary analyses showed statistically significant correlations between intrinsic job satisfaction and both perceived group influence, and skill-utilization. These findings are discussed within the context of Dachler and Wilpert's (1978) convergent conceptual model of participation.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>The Effects of Employee Participation on Satisfaction and Performance</td>
<td>1</td>
</tr>
<tr>
<td>Dachler and Wilpert's Conceptual Model of Employee Participation</td>
<td>8</td>
</tr>
<tr>
<td>Ideological Orientations Underlying Participation</td>
<td>10</td>
</tr>
<tr>
<td>The Properties of Participation</td>
<td>19</td>
</tr>
<tr>
<td>Contextual Boundaries</td>
<td>20</td>
</tr>
<tr>
<td>Outcomes of Participation</td>
<td>21</td>
</tr>
<tr>
<td>Employee Participation in North America</td>
<td>22</td>
</tr>
<tr>
<td>Underlying Ideological Orientations</td>
<td>23</td>
</tr>
<tr>
<td>Properties of Participation in North America</td>
<td>26</td>
</tr>
<tr>
<td>Contextual Boundaries of Participation in North America</td>
<td>29</td>
</tr>
<tr>
<td>Participation, Satisfaction, and Performance: The Locke versus Sashkin Controversy</td>
<td>30</td>
</tr>
<tr>
<td>Variables that Influence Employee Participation</td>
<td>36</td>
</tr>
<tr>
<td>Variables Moderating the Effects of Participation</td>
<td>38</td>
</tr>
<tr>
<td>Variables Mediating the Effects of Participation</td>
<td>52</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>65</td>
</tr>
<tr>
<td>Ancillary Analyses</td>
<td>68</td>
</tr>
<tr>
<td>II</td>
<td>70</td>
</tr>
<tr>
<td>METHOD</td>
<td></td>
</tr>
<tr>
<td>Subjects</td>
<td></td>
</tr>
<tr>
<td>Primary Research Sample</td>
<td>70</td>
</tr>
<tr>
<td>Pre-intervention Data</td>
<td>72</td>
</tr>
<tr>
<td>Recruitment of Subjects</td>
<td>72</td>
</tr>
<tr>
<td>Research Design</td>
<td>75</td>
</tr>
<tr>
<td>Measurement Instruments</td>
<td></td>
</tr>
<tr>
<td>Independent Variable</td>
<td>77</td>
</tr>
<tr>
<td>Mediating Variables</td>
<td>79</td>
</tr>
<tr>
<td>Dependent Variables</td>
<td>83</td>
</tr>
<tr>
<td>Supplementary Variables</td>
<td>85</td>
</tr>
<tr>
<td>Procedure</td>
<td>87</td>
</tr>
<tr>
<td>1986 Participative Management Intervention</td>
<td>87</td>
</tr>
<tr>
<td>1989 Data Collection</td>
<td>89</td>
</tr>
<tr>
<td>Debriefing</td>
<td>97</td>
</tr>
<tr>
<td>Statistical Analyses</td>
<td>98</td>
</tr>
<tr>
<td>T-tests</td>
<td>98</td>
</tr>
<tr>
<td>Analysis of Variance Procedures</td>
<td>100</td>
</tr>
<tr>
<td>Hierarchical Multiple Regression</td>
<td>101</td>
</tr>
</tbody>
</table>
### III RESULTS

- Verification of PDM Classifications
- Semi-structured Interview Data
- Perceived Group Influence Scale Data
- Qualitative Data
- Summary of PDM Classification Analyses

### IV DISCUSSION

- Summary of Research Findings
- PDM and Job Satisfaction
- PDM and Work Performance
- Instrumentalities as a Mediating Variable
- Self-Efficacy as a Mediating Variable
- Supplementary Findings

### Appendix

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Description of Research</td>
<td>175</td>
</tr>
<tr>
<td>B</td>
<td>Semi-structured Interviews</td>
<td>177</td>
</tr>
<tr>
<td>C</td>
<td>Perceived Group Influence Scale</td>
<td>180</td>
</tr>
<tr>
<td>D</td>
<td>Self-efficacy Scale</td>
<td>182</td>
</tr>
<tr>
<td>E</td>
<td>Instrumentality Scale</td>
<td>186</td>
</tr>
<tr>
<td>F</td>
<td>Work Outcomes Survey</td>
<td>190</td>
</tr>
<tr>
<td>G</td>
<td>Valency Scale</td>
<td>192</td>
</tr>
<tr>
<td>H</td>
<td>Behaviourally Anchored Rating Scale</td>
<td>194</td>
</tr>
<tr>
<td>I</td>
<td>Work Locus of Control Scale</td>
<td>205</td>
</tr>
<tr>
<td>J</td>
<td>Perceived Skill-utilization Scale</td>
<td>209</td>
</tr>
<tr>
<td>K</td>
<td>Quality of Worklife Survey</td>
<td>211</td>
</tr>
<tr>
<td>L</td>
<td>Instructions for Questionnaire Administration</td>
<td>214</td>
</tr>
<tr>
<td>M</td>
<td>Consent to Participate in Research Form</td>
<td>218</td>
</tr>
<tr>
<td>N</td>
<td>Instructions for Interviewers</td>
<td>220</td>
</tr>
<tr>
<td>O</td>
<td>Effects of the 1986 PDM Intervention</td>
<td>224</td>
</tr>
</tbody>
</table>

### REFERENCES

| REFERENCES | 238 |

### VITA AUCTORIS

| VITA AUCTORIS | 251 |
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>One-way ANOVA of Interviewers' PDM Ratings Between the NP, IP, and the FP Residences</td>
<td>108</td>
</tr>
<tr>
<td>2</td>
<td>One-way ANOVA of Perceived Group Influence Between the NP, IP, and the FP Residences</td>
<td>109</td>
</tr>
<tr>
<td>3</td>
<td>One-way ANOVA of Intrinsic Job Satisfaction Between the NP, LP, and the FP Residences</td>
<td>115</td>
</tr>
<tr>
<td>4</td>
<td>One-way MANOVA of the 13 Subscales Comprising the MSQ Intrinsic Satisfaction Scale between the NP, IP, and the FP Residences</td>
<td>116</td>
</tr>
<tr>
<td>5</td>
<td>Means, (Standard Deviations), and Univariate F-ratios for Employees in the NP, IP, and FP Groups of Residences on the Subscales of the MSQ Intrinsic Satisfaction Scale</td>
<td>118</td>
</tr>
<tr>
<td>6</td>
<td>Pearson r Correlations Between the Subscales of the MSQ Intrinsic Satisfaction Scale</td>
<td>119</td>
</tr>
<tr>
<td>7</td>
<td>One-way ANOVA of Five Satisfaction Subscales Composite Between the NP, LP and the FP Residences</td>
<td>122</td>
</tr>
<tr>
<td>8</td>
<td>One-way ANOVA of Work Performance Ratings of Residential Workers Between the NP, IP, and the FP Residences</td>
<td>123</td>
</tr>
<tr>
<td>9</td>
<td>Pearson r Correlations Between the Main Variables of the Present Research</td>
<td>127</td>
</tr>
<tr>
<td>10</td>
<td>Regression of the Three-Level PDM Classification on the MSQ Intrinsic Satisfaction Scale</td>
<td>129</td>
</tr>
<tr>
<td>11</td>
<td>Regression of Three-Level PDM Classification on Work Performance</td>
<td>130</td>
</tr>
<tr>
<td>12</td>
<td>Hierarchical Regression of Self-Efficacy and the Three-Level PDM Classification on Work Performance</td>
<td>131</td>
</tr>
<tr>
<td>13</td>
<td>Regression of Perceived Skill-Utilization on Intrinsic Job Satisfaction</td>
<td>133</td>
</tr>
<tr>
<td>Page</td>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Hierarchical Regression of Perceived Influence and Perceived Skill-Utilization on Intrinsic Job Satisfaction</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>2X2 ANOVA of Intrinsic Satisfaction Scores Between Internal/External Workers With High/Low Perceived Participation in Decision Making</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Paired Samples T-tests of the Three MSQ Satisfaction Scales Between the 1986 Pre-intervention Testing and the 1989 Testing of Nine Subjects on the FP Residences</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Independent Samples T-tests of the Three MSQ Satisfaction Scales Between Pre-intervention Subjects Who Were on the FP Residences in 1989 and Pre-Intervention Subjects Who Were Not</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Independent Samples T-tests of the Three MSQ Satisfaction Scales Between the Subjects on the FP Residences Who Were Involved in the 1986 PDM Intervention and the FP Subjects Who Were Not</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Independent Samples T-tests of the Three MSQ Satisfaction Scales Between the Full Pre-Intervention Sample and all the Subjects on the FP Residences</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Paired Samples T-tests of the Quality of Worklife Survey Between the 1986 Pre-intervention Testing and the 1989 Testing of Nine Subjects on the FP Residences</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Independent Samples T-tests on the Quality of Worklife Survey Between 1) the Pre-Intervention Subjects Who Were and Who Were Not on the FP Residences in 1989, and 2) Subjects on the FP Residences Who Were and Who Were Not Involved in the 1986 PDM Intervention</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Independent Samples T-test on the Quality of Worklife Survey Between the Pre-Intervention Sample and the Subjects on the FP Residences</td>
<td></td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>Outline of the Composition of the Two Research Samples Used in the Present Research</td>
<td>71</td>
</tr>
<tr>
<td>2</td>
<td>Frequency Distributions of Total Work Performance Ratings of Residential Workers by the Supervisors Who Made the Performance Ratings in Each Level of PDM</td>
<td>125</td>
</tr>
</tbody>
</table>
Introduction

The concept employee participation has acquired numerous labels and definitions, but it generally refers to the involvement of organization members in the making of decisions that affect their work situation. During the second half of the twentieth century employee participation has emerged as a central concern of organizational life in Western industrialized nations. A number of disciplines have approached the issue of employee participation from various ideological orientations, theoretical perspectives, and empirical traditions. In the Organizational Psychology and the Organizational Behaviour literature a controversy has developed regarding the effectiveness of participation. One position is that participative decision making (PDM) is a management technique that has been shown to have a limited influence on improving employees' job satisfaction and to have no discernible effect on their work performance (Locke & Schweiger, 1979; Locke, Schweiger, & Latham, 1986). The opposing position is that participative management is not only effective in improving the outcomes, job satisfaction and work performance, but is also an ethical responsibility of contemporary managers (Sashkin, 1984; 1986).

The Effects of Employee Participation on Satisfaction and Performance

Empirical evidence has been presented that both supports and questions positive relationships between
employee participation and the outcomes of participation, job satisfaction and work performance. Recent reviews of the participation literature have attempted to account for the contradictory findings concerning these two outcomes of participation. The reviews have explored the equivocal participation-outcome relationship findings by focusing on the influences on participation research findings stemming from societal trends (Wagner & Gooding, 1987a), from situational variables (Wagner & Gooding, 1987b), and from different models used to conceptualize and implement employee participation (Cotton, Vollrath, Foggatt, Lengnick-Hall, & Jennings, 1988; Miller & Monge, 1986). These recent efforts to rationalize the inability of participation research to provide clear evidence about the effects of participation suggests that a statement made by Greenberg (1975), while referring to the widespread support for participation throughout the social and political spectrum, is still applicable: "Strangely enough, despite all of this favorable attention, we know surprisingly little about participation as a social phenomenon; its meaning for participant individuals; its impact on affected institutions; and finally its implications for society in general" (p. 191).

Dachler and Wilpert (1978) argued that much of the confusion regarding the nature of the participation construct, and the individual and organizational
consequences of participation, result from the fact that different "social theories, and the different value and goal frameworks they imply essentially define participation differently" (p. 31). Consequently, many of the comparisons of research examining the consequences of participation were comparing the consequences of different organizational social arrangements. The outcomes of participative social arrangements that are imposed or given through formal procedures are likely to be different from outcomes of participation that emerge "informally among interacting members and that [are] legitimized by the developmental process" (Dachler & Wilpert, 1978, p. 11).

Cotton et al. (1988) responded to this point in their review of the participation in decision making (PDM) literature. Using classification variables presented by Dachler and Wilpert (1978), Cotton et al. classified the empirical participation articles in their review into six different types of participation before comparing the outcomes of the research. Cotton et al. (1988) found that the effects of participation on satisfaction and performance varied between different forms of participation researched. The different forms that participative social arrangements might take in an organizational context have, therefore, been shown to be an important factor to be addressed in participation research.

Several writers have observed that there has been
extensive attention paid to participation-outcome research, with little empirical effort having been directed at understanding the intervening mechanisms of participation that result in the desired outcomes (Mitchell, 1973; Schuler, 1980; Schuler & Kim, 1978; Singer, 1974).

Considering the equivocal findings that have resulted from the participation-outcome approach, a change of research focus to explore how participation operates (Schuler, 1980) and why participation may be effective (Schuler & Kim, 1978) could offer important insights into participation-outcome relationships. Mitchell (1973) suggested that the concepts from expectancy theory that describe employees' perceptions of effort-performance and performance-outcome relationships could be used to explain the intervening processes of participation-outcome relationships. This idea has been further developed by Schuler (1977, 1980), Schuler and Kim (1978), and Neider (1980). Some recent applications of the related concept self-efficacy (Barling & Abel, 1983; Barling & Beattie, 1983; Locke, Frederick, Lee, & Bobko, 1984; Locke, Motowidlo, & Bobko, 1986; Taylor, Locke, Lee, & Gist, 1984) suggest this concept could also be usefully included as an explanatory intervening variable of participation-outcome relationships.

Both sides of the participation-outcome controversy have mentioned mediating mechanisms that describe how participation might operate. Locke and Schweiger (1979)
discussed a model that included increased value attainment as mediating the relationship of participation with job satisfaction, and motivational and cognitive mechanisms as being important for understanding how participation might result in increased work performance. Sashkin (1976) presented a model of participation that described participation as introducing increased control, autonomy, and completion of meaningful tasks into workers' experience. The enhanced work experiences of employees were seen as leading to improved feelings of acceptance, commitment, security, challenge, and satisfaction. These improved worker feelings were considered to then influence work performance and productivity.

Although mediating mechanisms of participation-outcome relationships have been included in conceptual models, very little attention has been directed toward empirically investigating these processes. To a large extent the intervening mechanisms of participation-outcome relationships have been inferred from research that has focused on the organizational outcomes of participation, without direct evidence accounting for how participation accomplished the outcomes (e.g., Miller & Monge, 1986). Bandura (1982) has pointed out that such "demonstrations of environmental-action covariation increase confidence in a theory, but they do not establish firmly its validity because the covariation can be mediated through other
mechanisms capable of producing similar effects" (p. 123).

Utilizing a microlevel approach to examine the processes involved in different forms of participatory arrangements goes beyond former research into differences in outcomes resulting from particular forms of participation. Research examining the operation of intervening variables in participation-outcome relationships would help clarify the nature of such relationships and therefore contribute to a fuller understanding of the aspects of participation that might account for improved job satisfaction and work performance. This would provide more specific knowledge that could contribute to enhancing the effectiveness of employee participation in terms of benefits to both employees and organizations.

The present research focused on the intervening processes of the relationships between employee participation and two outcome variables of participation, job satisfaction and work performance. The purpose of this research was to investigate whether the control expectancies that have been proposed to mediate participation-outcome relationships (Mitchell, 1973; Neider, 1980; Schuler, 1980; Schuler & Kim, 1978) operate differently for human service employees in work groups with different types and levels of subordinate participation in decision making. The outcomes of participation, and the operation of the mediating variables, were expected to vary for different forms and
levels of participative arrangements. The position examined was that the increased influence of employees on decisions affecting their work, gained through participation, enhances their control expectancies. These enhanced expectancies have been proposed to mediate improvements in the job satisfactions and work performances of employees in participative work environments (Mitchell, 1973; Schuler, 1980; Schuler & Kim, 1978).

A quasi-experimental field study was used to investigate differences in employees' job satisfactions and work performances, and in the proposed mediating variables, in work groups characterized by three different decision making procedures that provided for varying degrees of subordinate participation in the decision making process. The three forms of decision making procedures were; a) non participation, with subordinates having minimal input into decisions, b) informal participation, with supervisors of the work groups attempting to involve subordinates in some work-related decisions, and c) formal participation, with established participative decision making procedures to ensure subordinate involvement in the decision making process.

The remainder of this chapter will review the participation literature in order to put the participation-outcome controversy in perspective and to examine the implications of the present research into the intervening
process variables of participation-outcome relationships. First, the conceptual model of Dachler and Wilpert (1978) will be presented and used as a framework for the discussion of various conceptual and practical approaches to participation. The North American participation literature will then be described in the context of the Dachler and Wilpert model. A review of the North American participation research will be performed in a framework of four recent review articles that have focused on the participation effectiveness controversy. Research concerning moderating variables and mediating variables of participation-outcome relationships will then be presented. Finally, the rationale of the present research and the concepts it will utilize will be explained and the hypotheses of the present study will be stated.

Dachler and Wilpert's Conceptual Model of Employee Participation

Numerous writers have noted the various meanings and definitions that have been used to describe employee participation in decision making (e.g., Cotton et al., 1988; Dachler & Wilpert, 1978; Locke & Schweiger, 1979). Shregle (1970) expressed this point succinctly when he wrote of workers' participation that "almost everyone who employs the term thinks of something different" (p. 117).

Dachler and Wilpert (1978) provided a comprehensive conceptual model of participation that theoretically
encompassed the gamut of conceptualizations of the participation construct. Dachler and Wilpert (1978) viewed participation as a "multidimensional, dynamic social phenomenon" (p.1). The conceptual model of participation they presented included four major classification variables and the complex inter-dependencies between the variables. This framework enabled Dachler and Wilpert to describe various components that may comprise different forms of participative social arrangements.

The model of participation developed by Dachler and Wilpert represents a systemic conceptualization of participation. The systemic properties and assumptions emphasized by Dachler and Wilpert (1978) in describing their conceptual framework were the complex interdependence among the various parts of the model, the notions of reciprocal and moderated relationships, and the ability to integrate macro and micro questions about participation. This systemic view of the participation construct encompassed the various theoretical and methodological approaches to participation as different ways of investigating or emphasizing particular aspects of the interrelated levels of analysis that comprise the dynamic social phenomenon, participation.

The conceptual model advanced by Dachler and Wilpert provided a convergent theoretical framework that allowed apparently divergent and conflicting views of participation
to be seen as aspects of the same social phenomenon viewed from different ideological vantage points. It also placed the participation construct in a context that directed increased attention on characteristics of the social phenomenon of participation instead of on its pragmatic organizational consequences or its ideological flavour. By delineating major conceptual components of this construct, and by making explicit the different value orientations underlying the study and practice of participation, Dachler and Wilpert have provided a view of employee participation that is much clearer and more comprehensive than was previously available in the literature. The Dachler and Wilpert model will be used as a framework to provide a context for the discussion of North American conceptualizations of the participation construct. Each of the four main classification variables of the model will be briefly described.

**Ideological Orientations Underlying Participation**

One classification variable in the Dachler and Wilpert model refers to the underlying social theories, or ideological orientations, of the theorists and practitioners who guide the development and implementation of participative social arrangements. Two of these ideological viewpoints, the democratic and socialist theories, see participation as a "general social phenomenon, affected by and affecting the general society, its institutions or
organizations, and its individuals" (p. 4). The other two ideological viewpoints, the human growth and development, and the productivity and efficiency orientations, see participation as a design technique of management and limit their conceptions of participation to individual and intraorganizational issues. The four underlying social theories of participation will be briefly described.

**Democratic theory.**

Traditional democratic theory holds as a fundamental assumption the belief in the potential capacity of ordinary human beings for effective social decision making and self-governance. The process of being involved in participatory decision making, therefore, is the very essence of traditional democratic theory.

Pateman (1970) observed that from the vantage point of participatory democracy, the "existence of representative institutions at the national level is not sufficient for democracy;... democracy must take place in other spheres in order that the necessary individual attitudes and psychological qualities can be developed... through the process of participation itself" (p. 42). The position that the democratic process must occur at all levels for a society to be truly democratic implies considerable support for workplace participation from traditional democratic theory (Dachler & Wilpert, 1978; Greenberg, 1975; Pateman, 1970).
Such extensive support for participation has not been forthcoming from more recent theories of democracy. Pateman (1970) suggested that "a prominent feature of recent theories of democracy is the emphasis on the dangers inherent in wide popular participation" (p. 1). In the place of maximum participation of all societal members, recent democratic theorists have advocated participation in the form of voting for leaders to represent the electorate in social decision making (Dachler & Wilpert, 1978; Pateman, 1970). The characteristic notion of democratic process being a societal phenomenon suggests that the recent democratic theories would support representative participation in the workplace.

Depending on the type of democratic theory maintained, therefore, the implicit values and assumptions might support various forms of employee participation. The types of participation might range from direct broad-based participation of all organizational members, to more restricted participation of organization subgroups through elected representatives serving on an organization's decision-making committee. There is, however, one general implication for participatory social arrangements that are supported by any theory from the democratic orientation. The societal nature of democracy determines that whatever conception of participation is advocated, the mechanisms and processes of workplace participation would be considered in
the context of how they might further develop and strengthen the democratic processes of the society.

Bowles and Gintis (1987) emphasized an important distinction to be considered between the democratic political structures and the capitalistic socio-economic orders in many western industrialized nations. The harmonious and complementary relationship between democracy and capitalism implied in the term, "democratic capitalism" was described by Bowles and Gintis (1987) to in fact be characterized by sharply contrasting rules regulating both the process of human development and the historical evolution of whole societies:... [capitalism] is characterized by the preeminence of economic privilege based on property rights,... [democracy] insists on the priority of liberty and democratic accountability based on the exercise of personal rights (p. 3).

An implication of the position presented by Bowles and Gintis is that efforts to implement participatory social arrangements in modern democratic capitalistic societies might be more likely propelled by democratic than by capitalistic values.

The goals of democratic theories pertain to both enhanced abilities for individuals to realize their own interests, and the greater stability and efficiency of social institutions (Dachler & Wilpert, 1978; Sartori,
Employee participation implemented on the basis of a democratic orientation would be designed to employ and strengthen democratic principles as an integral part of organizational and societal functioning.

**Socialistic theory.**

The focus of socialistic theory is on overcoming societal inequities which are seen as being inherent in the dialectical relationship between capital and labour in the capitalistic mode of production. "Socialism gives work and the production process a central role in explaining human personality and social processes" (Dachler & Wilpert, 1978). Gorz (1989) stated that a traditional socialist belief was that the collective appropriation of the means of production would reconcile the workers with their function...

Individuals would develop a 'socialist consciousness' and with it the conviction that private and public interest were one and the same... They would derive both personal fulfilment from their work and a feeling of oneness with society (p. 39).

Gorz noted, however, that the large, complex and rigid economic and productive units required for production on the scale of modern nations have prevented the realization of a widespread socialist consciousness.

Socialist theorists, such as Gramsci (1957) and Gorz (1973), have seen participation in the form of workers'
councils as educative instruments that could germinate a transformation to socialism in Western democracies. Gaining control of the productive process through workers' councils was considered a means to increase the social consciousness of workers concerning the detrimental effects of capitalist social relations, and to develop workers' desire for control over higher levels of the capitalist system (Greenberg, 1975).

The socialist theories underlying participation have not presented a coherent or consistent position regarding the form that participatory social arrangements should take. Dachler (1978) pointed out, however, that "different forms of workers' councils as a starting point for progressively greater participation, at progressively higher levels of economic activity, seem to underlie many of the writings on this issue" (p. 21). Dachler (1978) also suggested that the form of participation is not as important from the socialist perspective as is the potential of participation to strengthen workers' awareness, desire, and abilities to engage in societal revolutionary change. The result of socialistic revolutionary change is expected to be a social system with cooperative and egalitarian production processes that allow for the full development of the human personality.

Human growth and development orientation.

The human growth and development orientation has
developed since the early 1960's from a Humanistic Psychology point of view that posits a basic incongruity between requirements for organizational effectiveness and those for individual personality development (Argyris, 1964; Likert, 1967; McGregor, 1960). The view is based on acceptance of a hierarchy of human needs that culminate in the need for self-actualization or growth (Alderfer, 1972; Maslow, 1954). The job specialization, task fragmentation, and close supervision evident in organizational efforts to rationalize, organize, and control work processes have been seen as running counter to the fulfilment of psychological needs of mature adults (Argyris, 1964). Theorists with a human growth and development orientation advocate participation as one of several means of reorganizing work so that the work experience might become one that facilitates, instead of inhibits, psychological growth and development (Greenberg, 1975).

The goals of the human growth and development approach to participation are to enhance the personality development and mental health of individuals, and to contribute to the greater effectiveness and economic stability of the organization. There are not a particular set of procedures that characterize participative social arrangements according to the human growth and development orientation to participation. Various meanings have been assigned to participation from this orientation, and therefore numerous
structures and processes for participation have been proposed (Dachler & Wilpert, 1978). "It is clear, however, that participation is viewed as limited to issues surrounding the work itself (i.e., the actual tasks to be accomplished and the relevant interpersonal relationships) rather than the broad spectrum of organizational issues to be resolved" (Dachler, 1978, p. 22). Participation within this orientation is seen as one means, among others, to maintain stability and efficiency of the social and economic order by focusing on fulfilling the individual psychological needs of people at work.

Productivity and efficiency orientation.

The origins of the productivity and efficiency orientation to participation were in the growing recognition by management theorists and business leaders of the negative organizational effects of discontented organizational members. The concern here "is not so much about the mental health of workers, but about manifestations of discontent that find their way into endemic and accelerating absenteeism, job turnover, shoddy workmanship, sabotage,... all of which adversely affect productivity, and hence, profits" (Greenberg, 1975, p. 192). This view is based on acceptance of organizational productivity and efficiency as primary values and fundamental criteria of organizational effectiveness. Although this orientation consists more of a management value perspective than a developed theoretical
position, "one can speak of a productivity and efficiency rationale underlying participation, in that it conforms to a paradigm which seeks an instrumental understanding of human beings and their capacities, and in which people are considered to be manipulable toward maximum output through appropriate social technologies" (Dachler & Wilpert, 1978, p. 8).

Participation has been seen within this orientation as one of a variety of social science techniques to reduce the costs resulting from a discontented workforce and to increase productivity and efficiency. Along with other techniques such as job enlargement and goal setting, limited forms of participation have been introduced as means to increase the satisfaction and commitment of employees, with an assumed consequence of improved productivity (Dachler, 1978). Greenberg (1975) pointed out that participative arrangements proposed from this perspective are strictly limited in both scope and intensity. They are limited in terms of time and effort available for input from employees, issues open to employee involvement, information allowed employees in their decision making, and authority free from management veto. "One might without too much license term such arrangements "symbolic" or "pseudo" participation. Such arrangements give the appearance of participation, but in actual fact, exclude workers from meaningful decision-making" (Greenberg, 1975, p. 205).
The Properties of Participation

Another classification variable, the properties of participation, concern the different structures and processes that define how participatory social arrangements might operate. An example of a factor included in this component is formal-informal. This characteristic of participatory arrangements describes the extent to which participation is formalized in terms of established organizational procedures, collective agreements, or legislation. An informal participatory system operates on the basis of evolving norms and customary practices that are not formally established.

Another factor used to describe the properties of participation is direct-indirect; whether participation is gained through direct involvement of organizational members, or indirectly through some form of representative arrangement. Dachler and Wilpert also described participatory arrangements in terms of people's access to decisions, the social range or extent of those involved in the decision making, and the content, importance, and complexity of the decisions open for participatory decision making. The properties of participation describe the procedures and mechanisms by which different conceptualizations of participation are put into practice. The properties that characterize the various forms of participation allow employees to experience different
degrees of influence on different types of decisions through different procedures and mechanisms.

**Contextual Boundaries**

A third classification variable, the contextual boundaries of participation, relates to factors at different levels of the context within which participation occurs; that is, from the individual to the societal level. The contextual factors limit or enhance the potential of participation through their interdependence with the other defining variables, and through their impact on the relationships between the other variables. An example of the former relationship is that "societal characteristics form the context out of which the values and goals for participation emerge (Tannenbaum et al., 1974)" (Dachler & Wilpert, 1978, p. 22). The contextual boundaries of participation moderate the nature of, and the relationships between, the other classification variables.

An example of a contextual boundary within an organization would be the nature of the relationship between management and employees. An adversarial relationship between a company and a union representing the employees would limit the possibility for developing the cooperative relations between different levels of organization members necessary to successfully employ participatory relations. At the individual level, a supervisor with an autocratic management style would similarly limit the likelihood of
successfully implementing participation within that supervisor's work group.

Outcomes of Participation

The remaining classification variable of Dachler and Wilpert's model, the outcomes of participation, is a function of the other classification variables. The type and level of outcomes that are expected from participation and the outcomes that result are considered to be closely related to the character of, and the interdependent relations between, the other variables. If, for example, indirect participation was implemented in a financial firm from a productivity and efficiency orientation to improve the quality of management decisions, the primary outcome sought would be increased productivity at the work group and/or company level. If, on the other hand, direct participation was introduced to the employees of a nation's civil service from the democratic orientation, a prominent desired outcome might be to instill democratic principles into the lives of the country's citizens by developing individuals' competencies with democratic procedures. The outcomes of a particular participative social arrangement depend on the guiding underlying social theory, the properties of the participation process, and the context within which participation is to function.

The potential of a participative social arrangement, or what it means to its participants and the organization in
which it occurs, is "considered to be a function of all the dimensions... and their complex interdependence" (Dachler & Wilpert, 1978, p. 3). This description of the potential of a participative arrangement emphasizes the emergent and dynamic nature of Dachler and Wilpert's conceptualization of the participation construct. The development of the participation concept in North America, and how it can be seen within Dachler and Wilpert's model, will now be described.

**Employee Participation in North America**

Since the industrial revolution the organization of work in western industrial nations has been guided by the principles of specialization of function, fragmentation of tasks, and extensive managerial control. Designing work for predictable and efficient performance was epitomized in the scientific management approach of Frederick Taylor (1911). This rational approach to standardizing work procedures and controlling the actions of the people performing specified tasks has dominated the organization of work in industrialized nations well into the twentieth century. During 1920s and 1930s the human relations movement developed in North America as a counterforce to scientific management in an effort to incorporate a more humanizing view of workers into the study of work (Buchanan, 1979; Landy, 1985). It was the human relations approach that served as the theoretical orientation from which
participative approaches to organizing work emerged in North America.

**Underlying Ideological Orientations**

The impetus for the development of theoretical perspectives supportive of the employee participation concept in North America was the acknowledgement of the social context of work gained through the Hawthorne studies. Mayo (1945/1933) wrote that the "capacity to receive communications from others, and to respond to the attitudes and ideas of others in such fashions as to promote congenial participation in a common task" (p. 13) was an expression of the social skills that were lacking and desperately needed for the progress of industrial civilization. From this background emerged the seminal conceptual and theoretical writings forming the foundation of the employee participation literature in North America (Allport, 1945; Carey, 1942; Coch & French, 1948; Lewin, 1947; McGregor, 1944; Nicol, 1948; Tannenbaum & Massarik, 1950; Worthy, 1948). The four decades since these early writings have witnessed a profusion of conceptual and empirical literature on the topic of employee participation.

In the context of Dachler and Wilpert's (1978) conceptual model, some of the early writings on participation clearly expressed the underlying ideologies of human growth and development (Carey, 1942; McGregor, 1944), and productivity and efficiency (Coch & French, 1948;
Tannenbaum & Massarik, 1950). These two underlying ideologies have continued to guide the development of participation in North America. A recent review of participation literature that explored the influences of underlying ideological orientations on conceptions of participation in North America concluded that employee participation in North America has been conceptualized and researched according to the values and assumptions of two of the underlying social theories or ideologies specified by the Dachler and Wilpert model of participation ... The productivity and efficiency, and the human growth and development orientations are clearly present in both the conceptual and the empirical literature" (Cheston, 1988, p. 70).

Definitions of participation.

In North America the employee participation construct has been described as having a diversity of conceptual meanings (Bass, Shackleton, & Rosenstein, 1979; Cotton et al., 1988; Dachler & Wilpert, 1978; Locke & Schweiger, 1979). The numerous conceptual definitions of participation that have been presented in the literature can be seen as adhering to the two dominant underlying ideologies. Descriptions of participation in accordance with the productivity and efficiency perspective have explained participation as a managerial device (Tannenbaum & Massarik, 1950), a managerial style (Strauss & Rosenstein, 1970), as
one of a number of options that managers have to deal with subordinates in decision making situations (Vroom & Yetton, 1973), and as "joint decision making" between managers and their subordinates (Locke & Schweiger, 1979).

Conceptions from the human growth and development perspective have generally defined participation in broader organizational terms than have those from the productivity and efficiency view. McGregor (1960) described participation as a managerial philosophy. Lowen (1968) defined participation as "a mode of organizational operations in which decisions as to activities are arrived at by the very persons who are to execute those decisions" (p. 69). Noting that the term participation can mean many things, Sashkin (1976) presented a basic framework that included four forms of participation: participation in a) setting goals, b) decision making, c) solving problems, and in d) the development and implementation of change in organizations.

Harrison (1985) presented a definition that expressed participation as a process of social organization, rather than as a managerial style or an organizational intervention strategy. This definition focused on the dynamic nature of participation and defined it as "a socially constructed phenomenon created by the mutual understandings of superiors and subordinates" (Harrison, 1985, pp. 101-102). Harrison explained that for employee participation to operate,
superiors and subordinates must establish shared understandings of how much and what type of subordinate influence is appropriate, and how it should be exercised. Although North American forms of participation are usually initiated by and considered the prerogative of management, subordinates must acknowledge and endorse a participative system before it can function adequately. Like the conceptual model of Dachler and Wilpert (1978), Harrison's definition was stated in terms that allowed it to encompass various forms of participative arrangements.

**Properties of Participation in North America**

Schweiger and Leana (1986) observed that the various meanings attributed to employee participation had been reflected in the diverse operationalizations of participation evident in empirical studies using the construct. In terms of Dachler and Wilpert's model, the two underlying ideologies of participation had resulted in the construct being studied according to different configurations of participation properties. Operationalizations of participation have ranged from such specific experimental conditions as subjects being involved in jointly setting a performance goal for a six-minute typing test (Dossett, Latham, & Mitchell, 1979), to company-wide changes to organizational structures and procedures to accomplish participative work environments (e.g., Malone, 1975; Nurick, 1985). All of these operationalizations can
be seen as representing different manifestations of the productivity and efficiency, or the human growth and development orientations.

Both the productivity and efficiency, and the human growth and development perspectives consider participation as an organizational treatment or intervention strategy. The central difference between these two approaches to participation is that the focus of the former view is to increase organizational effectiveness, while the focus of the latter is both to improve organizational effectiveness and to enhance the personal growth of organization members.

The focus of the productivity and efficiency orientation on improving organizational effectiveness has directed emphasis to limited micro level participation interventions with tangible organizational outcomes. The responsibility for the operation of subordinate input into decisions has often been left to the discretion of managers, with little or no established procedure to ensure participation. In terms of the properties of participation variable in Dachler and Wilpert's (1978) model, these limited participation endeavours have been informal, direct attempts to involve subordinates in a restricted range of decisions. The access to decisions has frequently been determined by the manager, and the decision content and complexity curtailed to those decisions with minimal potential for repercussions to the organization.
The twin goals of the human growth and development orientation, to enhance both individual growth and organizational effectiveness, have presented participation as a complex management strategy that requires organizational change, and considerable management commitment and resources to implement. The implementation of participation from this viewpoint has involved the development of organizational structures and procedures to facilitate employee participation in decision making. In terms of the properties of participation variable, this approach to participation has been characterized by formal, direct mechanisms to involve employees in the making of decisions related to their work situation. The access to decisions and the type of decisions to be addressed have been determined by the formal participation procedures.

Dachler and Wilpert (1978) summarized the general properties of participation in North America by stating that, "existing participatory systems in the United States, for example, characteristically limit the access of participants to the decision-making process, restrict the range and importance of decisions to be included in the participatory system, tend to be direct and informal, and usually involve a limited social range" (p. 23). It should be noted, however, that a proliferation of activity in the implementation of participative systems in North America in the 1980s saw an increasing number of formal organizational
procedures used to introduce and maintain employee participation.

Contextual Boundaries of Participation in North America

The fundamental contextual boundary of participation in North America is the capitalist economy. Capitalism prescribes the basic infrastructure and the economic relations that guide the structural and functional nature of organizations in North America. The hierarchical structures and profit motivated functions of traditional North American capitalism are generally not supportive of participative social arrangements in organizations.

Employee participation has developed in North America largely for the purposes of overcoming the disruptions from a discontented workforce, and of enhancing the productivity and stability of organizations. As such, efforts to involve subordinates in decision making have developed more as a method of repairing organizational functioning than as a natural form of social arrangements in North American organizations. The increased pressures on the North American economy in the past two decades, stemming from its transition from an industrial to a technological economy, and from increased foreign competition, have heightened attempts to find improved ways of organizing. Employee participation has been a major alternative that has been examined for this purpose.

A consequence of participation being a method of
modifying traditional forms of organizing in North America is that implementing participative arrangements involves changing deeply entrenched attitudes and organizational structures. The contextual boundaries of participation in North America, therefore, are generally quite stringent in resisting the implementation of participatory social arrangements. This point is supported by the very limited forms of participation that have been advocated and utilized in North America.

**Participation, Satisfaction and Performance:**

**The Locke Versus Sashkin Controversy**

The two dominant orientations that underlie participation and present it as an organizational treatment or intervention strategy comprise the opposing sides of the participation-effectiveness controversy. The position advanced by Locke and his associates embodies the productivity and efficiency approach to participation. Sashkin's position applies principles that are characteristic of the human growth and development orientation. The following section will explore this controversy between the two orientations that underlie employee participation in North America.

Locke and Schweiger (1979) presented a comprehensive review of the North American participative decision making (PDM) literature for the purpose of examining the evidence that employee participation "fosters greater organizational
effectiveness than other methods of managing and decision making" (p. 273). The research they reviewed was categorized into four subsections according to the type of methodology used in the studies. The four subsections were: a) laboratory studies, b) correlational studies, c) multivariate experimental and field studies, and d) univariate (controlled) experimental field studies.

The effectiveness of participation in the studies reviewed was assessed on two broad classes of criteria; "satisfaction or morale, and productive efficiency, including decision efficiency" (p. 280). Studies were rated according to the significance of their findings in showing participation to be superior to other methods, inferior to other methods, or showing either no difference or difference attributable to contextual variables.

Locke and Schweiger dismissed the ability of the multivariate field studies to offer valid conclusions about the effects of participation because of the large number of confounding variables present in such studies. Their assessment of articles in the other three categories revealed similar findings concerning the proportion of studies that were rated with PDM as superior, inferior, or no difference, in terms of productivity and satisfaction. Overall, in terms of productivity, 22% of the studies were rated as showing PDM to be superior, 22% were rated as PDM inferior, and 26% were rated as their findings being
contextual or showing no difference. In terms of satisfaction, 60% of the studies reviewed were rated as showing PDM to be superior, 9% were rated as PDM as inferior, and 30% were rated as contextual or no difference. Locke and Schweiger (1979) concluded that

1) with respect to the productivity criterion there is no trend in favor of participative leadership as compared to more directive styles, and 2) with respect to satisfaction, the results generally favor participative over directive methods, although nearly 40 percent of the studies did not find PDM to be superior (p.316).

The Locke and Schweiger review has become the basis for a controversy about the efficacy of participation. Sashkin (1984) countered the estimation of the effectiveness of participation presented by Locke and Schweiger with an article that portrayed participative management not only as a highly effective management approach, but also as an ethical imperative of contemporary managers. Whereas Locke and Schweiger had dismissed multivariate experimental field studies as unable to offer valid evidence about the outcome effectiveness of participation, Sashkin (1984) maintained that "the evidence of 50 years of action research clearly, consistently, and strongly demonstrates the effectiveness of participative management" (p. 6-7). Sashkin focused on several key studies that had displayed very positive
findings for participation (e.g., Coch & French, 1948; French, Ross, Kirby, Nelson, & Smyth, 1958; Marrow, Bowers, & Seashore, 1967) and suggested that participative management is a complex management approach that, if "properly implemented [emphasis added] is clearly effective in improving performance, productivity, and job satisfaction" (p. 6). He then argued that participation had those positive effects "because it fulfills the three basic human work needs: increased autonomy, increased meaningfulness, and decreased isolation" (p. 11). Citing evidence that failure to satisfy the basic human work needs results in physical and psychological harm to employees, Sashkin concluded that "it is ethically unjustifiable to manage nonparticipatively" (p. 17).

In a rejoinder to Sashkin's (1984) article, Locke, Schweiger and Latham (1986) maintained the position of equivocal and generally unsupportive findings for participation in the research literature. They further suggested that participation is a management tool that should be considered on a contingency basis. Sashkin's ethical imperative position was defused with an argument that it was based on a premise of job satisfaction being the right of employees, while Locke et al. (1986) maintained that job satisfaction is the responsibility of both the employer and the employee. Additionally, Locke et al. (1986) presented participation as only one of many job
values that could lead to job satisfaction, which further questioned the centrality of participation to organizational functioning that was implied by Sashkin (1984).

In a reply to Locke et al. (1986), Sashkin (1986) pointed out areas of agreement and of disagreement between his own position and that of Locke and his colleagues. Sashkin noted that both of their positions proposed a number of contingencies that affect the outcomes of participation, both maintained that participation is not ethical when organizational conditions militate against its effectiveness, and the two positions specified similar employee job values and ways to meet them. Areas of disagreement between his own position and that of Locke and associates were identified by Sashkin as differences in interpreting research, a basic misunderstanding regarding employee rights and ethical considerations, and a fundamental difference in their organizational viewpoints.

In keeping with his view that participative management is a complex approach that must be properly implemented to be effective, Sashkin (1986) placed much more credence in the multivariate (complex) experimental field studies that Locke and his colleagues had discounted. Sashkin also noted that in the participative goal setting research (e.g., Latham & Saari, 1979; Latham, Steele, & Saari, 1982), the setting of higher goals resulting from participation had been controlled and therefore the effects of participation
had been methodologically removed.

On the issue of employee rights and subsequent ethical considerations, Sashkin (1986) corrected Locke et al. (1986) by stating that he did not believe job satisfaction to be an employee's "legitimate right". Sashkin clarified that his view of an ethical imperative did not rest on unhappiness, but rather depended on potential psychological and physical damage resulting from nonparticipative work.

Finally, Sashkin (1986) acknowledged that "it is our respective organizational viewpoints that may be the greatest difference between my own position and that of Edwin Locke and his associates" (p. 73). Sashkin described his view as considering participation to be a complex approach, as emphasizing the organizational and group levels of analysis, and as entertaining more liberal alternatives of organizational design. Locke and his colleagues were presented as considering participation primarily in terms of manager-subordinate dyads, as emphasizing the individual level of analysis, and as holding strongly individualistic and anti-socialist values.

Sashkin (1986) noted that the difference in viewpoints between himself and Locke et al. pointed out "how values and ideologies affect logic and science" (p. 74). In conclusion Sashkin stated that "we can construct organizational situations to design conditions in which participation will be effective" (p.74). This point emphasized that, from
Sashkin's perspective, participation is not a simple technique that can be easily implemented. Rather, Sashkin presented participation as a complex management approach that requires change to organizational structure to allow and support the operation of participative social arrangements.

The foregoing account of the controversy between Locke and his colleagues, and Sashkin illustrates how the controversy revolves around opposing views emanating from the underlying productivity and efficiency, and human growth and development orientations to participation. Participation literature that has examined the effects of moderating variables and of mediating variables on the relationships between participation and its outcomes will now be reviewed. These variables that influence the outcomes and the processes of participation suggest an avenue to examining the participation phenomenon from a perspective that subsumes the opposing sides of the participation-outcomes controversy.

Variables that Influence Employee Participation

Although the dominant emphasis in North American participation research has been on investigating the outcomes of participation, some studies have investigated variables that moderate, or that mediate participation-outcome relationships. In the context of the present discussion a distinction will be made between variables that
have been described as moderating the outcomes of participation, and variables described as mediating or intervening in participation-outcome relationships. The former variables, such as personality (Abdel-Halim, 1983; Tosi, 1970; Vroom, 1960) or type of decision (Vroom & Yetton, 1973), have been investigated from the standpoint of how they might, by their presence or absence, change the effects of participation. Several recent review articles on the topic of participation have also examined how methodological variables might moderate the findings of participation research (Cotton et al., 1988; Miller & Monge, 1986; Schweiger & Leana, 1986; Wagner & Gooding, 1987a, 1987b). In this sense these moderator variables are differences in the conditions participation is operating under that influence the outcomes of participation.

Mediating, or intervening variables, are variables that are part of the processes involved in the experience of participation. Variables that mediate participation-outcome relationships are integral aspects of the participation process, regardless of the properties of the participatory arrangements or the conditions under which participation is operating. These variables affect the outcomes of participation because they are part of how the participation process directly influences the attitudes and behaviours of participants while they are involved in making decisions and controlling their work situation.
Variables Moderating the Effects of Participation

In the framework of Dachler and Wilpert's conceptual model of participation, variables that moderate the effects of participation would be described as contextual variables moderating the interdependence between the properties of participation and the outcomes of participation. At various levels of analysis, from the individual to the societal levels, different contextual variables may moderate the effectiveness of participatory social arrangements. In the context of the participation effectiveness controversy, several recent review articles of the participation literature have noted some methodological moderator variables that may have contributed to the equivocal participation-outcome empirical findings.

Methodological variables as moderators of participation research findings.

As well as being the focal point for the controversy regarding the effectiveness of participation, the Locke and Schweiger (1979) review was also a starting point for subsequent literature reviews aimed at explaining the mixed participation-outcome findings. Miller and Monge (1986) performed a meta-analytic review of the participation literature to "refine and extend Locke and Schweiger's findings" (p. 728). In addition to reviewing the empirical literature, Miller and Monge tested three types of models - cognitive, affective, and contingency - that proposed
different explanatory mechanisms through which participation had its effects on satisfaction and productivity. The analyses performed by these authors revealed some interesting findings about the moderating effects of methodological variables on the outcomes of participation research.

Miller and Monge (1986) described three types of models that explain the relationships between participation and its outcomes. According to Miller and Monge, cognitive models of participation emphasize the enhanced flow and use of important information that is facilitated by participative decision making. Writers espousing cognitive models of participation have suggested that employees have important information that could improve organizational decisions (Anthony, 1978; Frost, Wakely, & Ruh, 1974), and that participation in decision making improves employees' ability to implement decisions (Melcher, 1976). The involvement of employees in making decisions has been described as leading to improvements in productivity, which consequently have an effect on job satisfaction.

The affective models of participation were portrayed by Miller and Monge as emphasizing the link between participation and employees' satisfaction as being the most critical. These models have been strongly espoused by theorists from the human growth and development orientation (e.g., Argyris, 1955, 1957, 1964; Likert, 1967; McGregor,
1944, 1960). These theorists "propose that participation will lead to greater attainment of higher-order needs, such as self-expression, respect, independence, and equality, which will in turn increase morale and satisfaction" (Miller & Monge, 1986, p. 730). These improved attitudes lead indirectly to improvements in motivation and, therefore, in productivity.

Miller and Monge presented the third type, contingency models, as proposing that "participation will affect satisfaction and productivity differently for different people and situations" (p. 731). Contingency variables that have been specified in the research literature include personality variables (Abdel-Halim, 1983; Tosi, 1970; Vroom, 1959, 1960), employees' values, (Hulin, 1971; Singer, 1974), and decision situations (Vroom & Yetton, 1973; Vroom & Yago, 1978).

Miller and Monge performed separate analyses for research concerning job satisfaction and productivity. Weighted average effect sizes were computed according to the estimate, as recommended by Hunter, Schmidt, and Jackson (1982). The variance was then computed for each effect size, and sampling error variance subtracted to arrive at estimates of true variance reflected by the correlation coefficients. Moderating variables were considered if the true variance estimate was found to be significantly larger than zero, as determined through chi-square analysis.
The results of Miller and Monge's analyses did not provide support for any contingency models of participation. When possible moderator variables suggested by contingency models were subgrouped there was no reduction of variance in effect sizes for either satisfaction or productivity. Miller and Monge (1986) stated that "there was little support for contingency models of participation, though the lack of measures for several contingency variables could have affected findings" (p. 746).

In terms of the other two types of participation-outcome models, Miller and Monge found some support for cognitive models and strong support for affective models. "The relatively large correlation between participation and productivity in field studies somewhat supports cognitive models. However, the largest subgroup correlation, between perceived participation and satisfaction, provides greater support for affective models of participation" (Miller & Monge, 1986, p. 746).

In addition to the principal findings of their meta-analyses, Miller and Monge reported that their analyses showed that "some of the strongest moderators were methodological variables: in particular, research setting and type of subject played important roles" (p. 745). These findings indicated that for the studies concerned with satisfaction, investigations using nonorganizational subjects in laboratory settings showed weighted correlations
considerably higher (r=.38) than studies involving actual participation in organizations (r=.16), or organization members' perceived participation regarding a specific issue (r=.21). For the productivity studies not investigating goal setting, "field studies showed a moderately high positive correlation (r=.27), and laboratory studies yielded either no correlation (assigned versus participative task manipulation, r= -.01) or negative correlations (authoritarian versus democratic leadership manipulation, r= -.33)" (p. 747).

Miller and Monge (1986) attributed the substantial differences in findings they discovered between laboratory and field settings to the greater complexity of tasks normally performed in field settings, as compared to laboratory settings. For the satisfaction findings Miller and Monge concluded that the laboratory research indicated "a relatively high pure effect of participation on satisfaction, but... a host of other organizational influences dilute this effect in field studies" (p. 747). To explain the differences in productivity findings Miller and Monge cited evidence from research of small group behaviour (Cartwright & Zander, 1960), and suggested that authoritarian leadership and centralized group structure were more appropriate for the simple tasks typically performed in laboratory settings. "In contrast, the field studies involving complex problems benefited more from
participative processes" (Miller & Monge, 1986, p. 747).

These findings showing research setting to be a
moderator of participation research results contradicted the
findings of another review. Schweiger and Leana (1986)
compared participation studies conducted in the laboratory
to those carried out in field settings. The conclusion
drawn by Schweiger and Leana (1986) was that "a reasonable
degree of generalizability from the laboratory to the field
has been demonstrated on the PDM research" (p. 159). Miller
and Monge (1986) suggested that the narrative form of review
utilized by Schweiger and Leana might have caused them to
miss the moderating effects of research settings that were
revealed by the more stringent requirements of meta-
analysis.

The question of the moderating effects of
methodological variables on research concerning
participation-outcome relationships also surfaced in Wagner
and Gooding's (1987a) meta-analytic review of the
participation literature. The purpose of the review was to
investigate the discrepancies in American participation-
outcome research by exploring the effects of societal
trends. It was suggested that variations in outcomes
examined and the methods used in participation research
could have been due to "systematic influences such as
changing societal conditions or trends in research methods"
(Wagner & Gooding, 1987a, p. 242). The results of their
analyses suggested that two societal issues, social entitlement and social order, had affected the conduct of participation research and that a major methodological influence had been the use of percept-percept research.

Wagner and Gooding described percept-percept techniques as involving "the collection of predictor (participation) and criterion (outcome) data in a questionnaire administered to a single group of respondents at one point in time (Campbell, 1982)" (p. 244). It was suggested that respondents tend to respond similarly to measures of attitudes toward participation and to measures of degrees of participation when the two types of measures are completed concurrently. Consequently, Wagner and Gooding (1987a) maintained that when research utilized a single administration of a questionnaire measuring both how much participation subjects experienced and their attitudes toward participation, "these spurious similarities are likely to inflate measured effects" (p. 245).

To examine the influence of percept-percept methodology on the participation-outcome findings reported in the research literature, correlations from studies using percept-percept techniques were compared to correlations from studies using multisource methods. Results showed the mean percept-percept correlations to be significantly higher than mean multisource correlations. The combination of societal issues influencing the research questions asked,
and the amenability of some of these questions to percept-percept research methods led Wagner and Gooding (1987a) to conclude that "significant findings published between 1950 and 1985 in American participation-outcome research are mainly the product of percept-percept artifacts" (p. 257).

Pursuing the moderating effects of methodological variables further, Wagner and Gooding (1987b) performed another meta-analysis of the American participation literature to explicitly consider the effects of four situational moderators on five types of outcome. The four situational moderators were a) group size, b) task interdependence, c) task complexity, and d) performance standards. The types of outcome were a) task performance, b) decision performance, c) motivation, d) satisfaction, and e) acceptance.

To control for the previously noted effect of percept-percept methodology (Wagner & Gooding, 1987a), the situational moderator subgroups were nested within percept-percept and multi-source groups. Wagner and Gooding (1987b) defined multi-source correlations as "those that researchers had gathered using at least one objective measure or assigned condition, different respondents for data on participation and outcome variables, or a longitudinal break between the collection of data on both participation and outcome variables from the same respondents" (p. 153).

The results of the meta-analyses showed significant
differences in mean correlations for most of the studies examined on the basis of percept-percept versus multi-source methods. Comparisons assessing the effects of the situational moderator variables on the five outcome variables revealed very few significant differences. For studies grouped under percept-percept methodologies, a significant difference was found only for the variable performance standards on the outcome acceptance. Under the multi-source classification, significant differences were demonstrated for the variable group size on the outcome satisfaction, and for task complexity on the outcomes satisfaction and acceptance.

Overall, the results reported by Wagner and Gooding (1987b) did not differ appreciably from the findings regarding the effects of percept-percept methods versus multi-source methods that were discovered in their previous study (Wagner & Gooding, 1987a). The situational variables examined accounted for "only modest power as moderators in participation-outcome research" (Wagner & Gooding, 1987b, p. 534). The previous finding that percept-percept correlations are typically larger than multi-source correlations was confirmed in the later analyses. However, Wagner and Gooding (1987b) pointed out that the largest subgroup correlation in the Miller and Monge (1986) study, which had been presented as the strongest evidence supporting affective models of participation effects, was
computed from a group of studies including 90% that had clearly used percept-percept data collection techniques.

Wagner and Gooding (1967b) endorsed the finding of Miller and Monge (1986) regarding the type of subject as a methodological moderator and stated it to be "a source of methodological artifact that is comparable in effect to the difference between multi-source and percept-percept measurement examined in the present study" (p. 535). Wagner and Gooding (1987b) concluded by suggesting that their own findings, combined with the type of subjects findings of Miller and Monge (1986), seriously questioned the existence of positive participation-outcome relationships. The support for positive participation-outcome relationships that had previously been presented in the literature (e.g., Locke & Schweiger, 1979; Miller & Monge, 1986) was described as having been based on findings derived from percept-percept and sample artifacts.

Another review of the participation literature revealed an additional methodological moderator variable of the effects of participation. Cotton et al. (1988) compared the job satisfaction and work performance findings of participation research that had operationalized participation in six different ways. The classification of operationalizations used in participation studies was based on three of Dachler and Wilpert's (1978) "properties of participation" variables (formal-informal, direct-indirect,
and access to decisions), a four level decision-content category (Locke & Schweiger, 1979), and whether the participation under study had been long-term or short-term.

Depending on how participation had been operationalized, substantial differences were found in the effects of participation on the outcome variables job satisfaction and work performance. More than 80% of the studies in two groups that Cotton et al. (1988) classified as having operationalized participation as "informal participation" and as "employee ownership" showed both positive job satisfaction and work performance findings. Studies classified as having operationalized participation as "participation in work decisions" showed positive work performance findings and mixed (50% positive) job satisfaction findings. The groups of studies that had operationalized participation as "short-term participation" and as "representative participation" showed no effect on job satisfaction or work performance. The findings of a group of studies that had operationalized participation as "consultative participation" were deemed inconclusive because the methodology used in these studies was judged to have been poor.

The findings of Cotton et al. pointed out an important distinction to be considered in the assessment of participation research. The different operationalizations of participation examined by these authors correspond to the
different forms of participation that can be described with Dachler and Wilpert's (1978) classification variable, properties of participation. The form of participation implemented can clearly be expected to determine the extent to which participation would affect job satisfaction and work performance.

The overall findings of the review articles discussed above revealed important factors to be considered in participation research. The moderator variables that were identified as contributing to contradictory findings in participation research reflected the many contextual variables that operate in different implementations of participative work arrangements. The two moderator variables to be discussed next, locus of control and ability utilization, are variables that operate at the individual level, and therefore may moderate the effects of any form of participatory arrangement.

**Locus of control as a moderator variable**

Lefcourt (1982) defined locus of control as "a generalized expectancy for internal as opposed to external control of reinforcement" (p. 33). O'Brien (1984b) further explained that persons characterized as having an internal locus of control "believe that reinforcements are determined largely by personal effort, ability, and initiative, whereas persons classified as external believe that reinforcements are determined largely by other people, social structures,
luck, or fate" (p.7).

Previous research has provided evidence that it is important to consider locus of control information in investigations concerning people's expectancies and their work experiences. In a review of research concerning the relationship between work activities and locus of control, O'Brien (1984b) noted that some studies had reported that internal individuals are more satisfied with their jobs than externals. Hrycenko and Minton (1974) reported results from research using task-oriented communication networks that showed male internals to be more satisfied with a high power position than a low power position, while externally controlled males showed an opposite preference. Mitchell, Smyser and Weed (1975) found that internally controlled employees "are more satisfied with a participatory management style than are externals and externally controlled employees are more satisfied with a directive style" (p. 629). Internally controlled employees were also found to have higher expectancy scores, instrumentality scores, and perceived control over their work than did externally controlled employees.

The above findings do not demonstrate that the influence of employees' locus of control has either a moderating or a mediating effect on the relationship between participation and the outcomes of participation. For the purposes of the present study the findings of the previous
research will be conceptualized as suggesting a moderating effect of locus of control on the effects of participation. That is, employees' locus of control will be considered a variable that might change the effects of participation depending on the locus of control dispositions of the participants.

The findings cited above as supporting a moderating effect of locus of control on the effects of participation have been qualified by the findings of other studies. Ruble (1976) found no difference in satisfaction between internals and externals when job tasks and work structures were the same. O'Brien (1981) found no difference in satisfaction between internals and externals when perceived job attributes and other factors were controlled statistically. O'Brien (1984b) concluded that, employees' locus of control can, in certain situations, be a significant predictor of their career choices, occupational attainment, job performance, and attitudes toward work. The relationships are reciprocal to some extent, as work structures can determine employees' locus of control. The nature of these relationships must be qualified because of the [low] magnitude of the relationships and the incompleteness of the evidence (p. 58).

Gist (1987) suggested that locus of control should be considered in research using the self-efficacy concept.
"Correlations and interactions between self-efficacy and locus of control need to be specified because they have implications for the performance improvement of individuals and groups in organizations" (Gist, 1987 p. 480). Gist suggested that persons with an internal locus of control might respond more readily to experiences designed to enhance their efficacy perceptions. In contrast, external individuals may be more inclined to attribute improved performance to luck, rather than to change their perceptions of self-efficacy.

Variables Mediating the Effects of Participation

As mentioned above, variables that are conceptually held to mediate relationships between participation and the outcomes of participation are variables that are integral parts of the participation process. Dachler and Wilpert (1978) did not specify in their model the existence of variables that mediate the process of participation. When discussing the implications of their model towards the development of a conceptualization of participation as a dynamic social phenomenon, Dachler and Wilpert emphasized the value of utilizing a systemic approach. An important aspect of a systems conception of participation was described as the ability to transcend a focus on particular variables and, rather, to explore interdependencies among variables. "Rather than formulating the relationship between independent and dependent variables in terms of one-
sided causal relations, the intent is on understanding the process governing interacting components" (p.32).

The conception and investigation of process variables that mediate the relationships between participation and its outcomes are congruent with the suggestion of Dachler and Wilpert to pursue an understanding of the processes governing participation. Mediating variables have been mentioned in several models of participation effects (e.g., Locke & Schweiger, 1979; Miller & Monge, 1986; Sashkin, 1976, 1984), but they have received little direct empirical attention. The theorizing and research discussed below, however, provide a framework which proposes variables and relationships involved in the mediation of the participation process.

**Control expectancies as mediator variables.**

The models of participation effects of Locke and Schweiger (1979) and of Sashkin (1976, 1984) both mentioned employees' sense of control over their work as intervening mechanisms in the operation of participation. Locke and Schweiger included employees' sense of control as a motivational factor that lessened employees' resistance to change and therefore contributed to increased performance. Sashkin (1976, 1984) specified workers' experience of autonomy and increased control over work behaviour as a major intervening mechanism, also leading to increased work performance.
Other recent developments in the organizational literature have provided some conceptual and empirical support for investigating the effects of perceived control as an important mediating variable of the process of participation. Through extensive longitudinal research, Kohn and Schooler (1983) have developed empirical support for the theoretical position that particular dimensions of work experience have an effect on human personality. This is an important development in that it provides support for the theoretical position of the human growth and development theorists, that participative work conditions affect aspects of employees' personalities.

Mortimer, Lorence and Kumka (1986) offered support more specific to the question of perceived control as an intervening variable of participation, from longitudinal research they conducted that spanned two decades. These authors concluded that "work experience, particularly work autonomy, is of major importance in influencing adult psychological development" (p. 136). In that perceived work autonomy can be seen as a reduction in managerial control, similar to the perceived control that is assumed to be gained by employees through the processes of participation, the findings of Mortimer et al. (1986) support the position that process dimensions of participation may operate to influence participants' psychological states.

The findings of Kohn and Schooler (1983) and of
Mortimer et al. (1986) are based on correlational research involving large samples and many variables over a substantial time span. Mitchell (1973) suggested an expectancy theory model that offered a perspective on control expectancies and participation that was more specifically related to employees in particular work situations.

Expectancy theory, originally proposed by Vroom (1964), posits that the work behaviour of an individual is a function of the person's expectations about his/her work situation. The two basic notions of expectancy theory are expectancies and valences. Effort-performance expectancies describe the probability with which a worker expects that his/her effort will lead to a given level of performance. Performance-outcome expectancies, or instrumentalities, describe a person's expectation that effective work performance will lead to the attainment of a given work outcome or reward. The concept valence reflects the value or importance of a particular outcome to the person. According to expectancy theory, "one intends to work hard if (a) he thinks his effort will lead to good performance (E), and (b) he believes that good performance will lead to valued outcomes [the sum of the products of the instrumentalities for valued outcomes]" (Mitchell, 1973; p. 673).

Mitchell (1973) presented an argument for integrating
expectancy theory with basic premises of the employee participation approach. In doing so Mitchell provided separate expectancy models for predicting a person's job satisfaction and work performance. His argument suggested that a person's satisfaction with his/her job is "predicted from the degree to which there is a feeling that the position is instrumental for the attainment of certain outcomes, multiplied by the evaluation [valence] of these outcomes" (p. 671). A person's intention to work hard is determined by his/her expectation that effort will lead to good performance, and that good performance will lead to valued outcomes. A main difference in these two predictive models is that for work performance, "the attitude assessed is the individual's feeling about performance rather than his position" (Mitchell, 1973; p. 675).

Mitchell proposed that participation influences work performance and job satisfaction because it results in more accurate information, which clarifies effort-performance expectancies and performance-outcome instrumentalities. "The effort-performance relationship should be clearer and higher in magnitude under a participative system. By definition, the higher the expectancy, the greater the predicted effort (with the outcome values held constant)" (p. 674). Mitchell seems to be assuming here that when a worker participates in making decisions about work, he/she will know better the type of effort that will lead to
effective performance. Participation enhances job satisfaction because "through participation, the individual should know fairly well which behaviors are likely to be rewarded and which are not" (p. 674). That Mitchell (1973) was considering the intervening processes through which participation operates was evident in his statement that it might also be argued that it is not really "participation" per se that increases motivation but rather the social processes such as clear expectations, control, social influence, and the choice of rewards...

While this may be true, it does appear that participation, as a descriptive category of management style, does a better job of including these processes than any other category currently prevalent (p. 677-678).

Through a correlational field study Schuler and Kim (1978) supported and refined the expectancy model of participation proposed by Mitchell (1973). The results of the Schuler and Kim study suggested that "through this mediating process, participation in decision making may be positively associated with employees' satisfaction and performance" (p. 655). Their findings also indicated that different mediating effects resulted from effort-performance expectancies than from performance-outcome instrumentalities. In support of these findings it was argued that the effort-performance expectancy was logically
connected with the relationship between participation and performance, since the operative result of this expectancy is performance. Instrumentalities, on the other hand, refer to a relation between performance and valued outcomes, which suggests a more direct relationship between participation and satisfaction (through outcomes satisfying employees' wants and needs) than between participation and performance.

Neider (1980) used the expectancy motivation theory framework to investigate the influence of participation on employees' effort and productivity. In a quasi-experimental field study using retail store salespersons, Neider found that productivity and effort levels increased only when the participation process clarified the effort-performance expectancy and when valued outcomes were attached to high performance.

Schuler (1980) used the original argument of Mitchell (1973), the findings of Schuler and Kim (1978), and other findings regarding the relation between PDM and role conflict and ambiguity (Schuler, 1977; Morris, Steers, & Koch, 1979), as the bases for a model describing the process of participation. Schuler (1980) suggested "not only that expectancy and role perceptions may explain the process by which (how) participation in decision making works, but they implicitly suggested a model in which expectancy and role perceptions are intervening variables between participation and satisfaction and performance" (p. 332). Although this
work remains only suggestive, it does offer testable relationships between participation and measurable mediating variables that could be investigated to provide a better understanding of the social phenomenon of employee participation.

**Self-efficacy as a mediating variable.**

A related concept that has recently been applied to understanding work behaviour is self-efficacy. Self-efficacy is very similar to the concept effort-performance expectancy. Bandura (1986) defined perceived self-efficacy as "people's judgments of their capabilities to organize and exercise courses of action required to attain designated types of performance. It is concerned with... judgments of one's capability to accomplish a certain level of performance" (p. 391). The main sources of information that lead to the development of self-efficacy beliefs have been described as a) enactive attainment, or experienced successful performance, b) vicarious experience, or observing others performing successfully, c) verbal persuasion, and d) physiological state, or information interpreted from one's somatic arousal (Bandura, 1986).

Gist (1987) noted that self-efficacy has a relationship to effort-performance expectancies (E1) in expectancy theory, but she pointed out two distinctions. First, she observed that "while E1 focuses on a belief that effort will lead to desired performance, self-efficacy focuses on a
conviction that one can execute the required behaviour" (p. 477). The second distinction concerned measurement differences that had been noted by Locke, Frederick, Lee, and Bobko (1984). Most important among these measurement differences were that; a) self-efficacy measures cover a range of performance levels, while expectancy measures typically assess a particular performance goal, and b) self-efficacy measures require two types of ratings: a yes/no rating for each level of performance and a confidence rating for each of those dichotomous ratings.

Most of the research using the construct self-efficacy has dealt with such issues as fear arousal (e.g., Bandura & Adams, 1977; Bandura, Reese, & Adams, 1982) and the treatment of phobics (e.g., Bandura, 1983; Lee, 1984). The application of self-efficacy to work situations has only occurred quite recently. Barling and Beattie (1983) found, through multiple regression, that a measure of self-efficacy predicted objective measures of insurance sales performance while response-outcome expectancies did not. These authors noted that their findings support the theoretical hypotheses of self-efficacy in the organizational context. Barling and Beattie (1983) also suggested that an advantage of the self-efficacy concept in the area of organizational behaviour may be that "it designates the precise nature of the relevant cognitive belief... that influences subsequent behaviour" (p. 49).
The relevance of self-efficacy for investigating organizational behaviour was further supported by Locke, Frederick, Lee, and Bobko (1984). In a study investigating the effects of self-efficacy, goals, and task strategies on goal choice and task performance, Locke et al. (1984) interpreted their findings as follows:

The most unexpected finding of this study was the very powerful effect of self-efficacy even with ability and past performance controlled. Self-efficacy was found to affect goal level, task performance, goal commitment,... and even the choice to set a specific (quantitative) rather than a non-specific goal. These results give very strong support to Bandura's (1982) claim that self-efficacy is a key causal variable in performance and show that its effects on performance are not only direct but indirect as well. (p. 247).

Locke et al. (1984) also noted, as a puzzling aspect of their findings, that self-efficacy had shown such considerable success in predicting performance, while the concept expectancy (effort-performance expectancy) had previously been consistently unsuccessful in showing a positive relationship with performance in goal-setting studies. A distinction made via a personal communication with Bandura regarding self-efficacy as a much wider concept
than effort-performance expectancy, and differences in methodology used for the two concepts were used to account for the differences in results.

Some of the findings in the Locke et al. (1984) study were replicated by Taylor, Locke, Lee, and Gist (1984) in a field investigation of Type A behaviour. Taylor et al. (1984) found that self-efficacy was related to the personal research productivity goals and to the actual productivity of university faculty.

In an exploration of the theoretical and practical implications of the self-efficacy concept for studying organizational behaviour, Gist (1987) discussed the potential for self-efficacy to be utilized in the areas of personnel selection, leadership, training, and vocational counselling. On the basis of previous self-efficacy research findings, Gist suggested that the potential for applying the self-efficacy concept to understanding organizational behaviour was promising. In closing, however, she noted that further empirical support was required to substantiate the relevance of self-efficacy for organizational applications.

The application of self-efficacy to the mediating processes of participation-outcome relationships is supported both conceptually and empirically. Theoretical support comes from statements by Bandura (1982) that the unresponsiveness of the social environment can adversely
affect performance and create feelings of futility by curtailing the opportunity for people's competencies to be expressed. Participative modifications to a work environment would entail changes to a social environment that Bandura described as allowing percepts of self-efficacy to be realized. Additional activities that would accompany employee participation, such as increased involvement in decision making, would also provide opportunities for enactive attainments to increase percepts of self-efficacy in novel work activities introduced through participation. Finally, Bandura (1982) suggested that "in any given instance behavior would be best predicted by considering both self-efficacy and outcome beliefs" (p. 140). The findings of the studies mentioned above, that have applied self-efficacy to work situations, have provided empirical support for these conceptual suggestions (Barling & Beattie, 1983; Locke et al., 1984; Taylor et al., 1984).

**Skill-utilization as a mediating variable.**

A different perspective on the relationships between employees' influence in decision making and the outcomes of participation can be derived from research conducted by O'Brien (1984a, 1984b, 1986). O'Brien (1984a) reported a large scale correlational investigation (N=1383) into the relationships between employees' control orientations and their skill-utilization, influence, and income. Findings from the study indicated that skill-utilization and income
were related to employees' control orientations as measured by the Rotter (1966) internal-external control scale, but employees' perceived influence on the job was not. O'Brien (1984a) interpreted these findings as indicating that "the major job determinant of locus of control is not whether an employee can affect decisions about the job environment but rather the content of the job itself" (p. 70).

The findings of O'brien (1984a) introduce a competing hypothesis to the thesis of the present research. The present study is proposing that the increased influence gained by employees working in participative work environments increases their control expectancies, which mediate improvements in job satisfaction and work performance. The question raised by the findings of O'brien (1984a) is whether functioning in a participative work environment may result in employees perceiving greater skill-utilization due to the process of being involved in making decisions. This increased skill-utilization might then be the important variable associated with increasing control expectancies, and thereby the outcomes job satisfaction and work performance. For these reasons it is important to include the skill-utilization variable in the present research and to assess its impact on the participation-outcome relationships to be examined.
Hypotheses

A prominent controversy in the employee participation literature concerns the relationships between PDM and two outcomes of PDM, job satisfaction and work performance. The controversy has centred on examining and interpreting years of participation-outcome research. Recent review articles of the participation literature have questioned the validity of the findings from participation-outcome research because of methodological artifacts (Wagner & Gooding, 1987a, 1987b), and because very different operationalizations of participation had been used in participation research (Cotton et al., 1988). The present research examined the relationships between participation and the outcomes job satisfaction and work performance by examining the participation process in work groups characterized by three levels of subordinate participation in decision making.

The three levels of employee participation were operationalized according to three types of work arrangements which were operating at a residential facility for developmentally delayed persons. One type of work arrangement involved a deliberate organizational intervention to develop participative work procedures in two residential work groups. Employees from two residences were involved in a year-long employee participation demonstration project from September 1986 to August 1987. A two-week training program was used to develop employee capabilities
and organizational mechanisms for participative decision making about normal work functions on these two residences. The mechanisms developed during the training program were then implemented to create formal participation procedures on the two residences.

The second and third types of work arrangements were determined by measuring the types of decision making procedures and the amount of influence reported by employees working in six other work groups in the research setting. These measurements revealed one group of three residential work groups that reported informal participative decision making and another group of three work groups that reported low participation in decision making.

The job satisfaction and work performance of direct-care employees working under the three different types and degrees of participation were compared. It was expected that higher job satisfaction and work performance would be found for the employees in the work groups with decision making procedures allowing for greater participation in decision making (PDM).

The measurement instrument used to measure job satisfaction in the present study included scales for intrinsic, extrinsic, and general satisfaction. The intrinsic satisfaction scale was considered the most appropriate for comparing differences in job satisfaction resulting from different forms of PDM. Intrinsic
satisfaction refers to employees' satisfaction with the experience of performing different aspects of the job, such as the amounts of independence or variety in the job. Extrinsic satisfaction refers to employees' satisfaction with factors external to performing the job, such as satisfaction with compensation or security. Intrinsic satisfaction was more appropriate for the present study because variation in PDM primarily reflects differences in aspects of the job itself, and not in factors external to performing the job.

In the context of the present study, participation was considered an organizational control mechanism that exerts less imposed managerial authority and control over subordinates than more traditional, non-participative control structures. Following the rationale of Bandura's (1986) self-efficacy theory and the expectancy motivation models of Mitchell (1973) and Schuler (1980), it was expected that these two types of work-related control expectancies would differentially mediate the relationships between participation and employees' work performance and job satisfactions. Enhanced expectancies regarding the ability to perform the necessary work tasks (self-efficacy) were proposed to be related to higher work performance for employees working on residences with relatively higher PDM (Bandura, 1986; Barling & Abel, 1983; Barling & Beattie, 1983; Locke et al., 1984; Taylor et al., 1984). Clearer
instrumentalities regarding the relationship between effective work performance and valued outcomes were proposed to be related to increased intrinsic job satisfaction for employees working on residences with relatively higher PDM (Mitchell, 1973; Schuler, 1980; Schuler & Kim, 1978).

Formal statements of the hypotheses investigated in the present research follow:

1) The more participative the work conditions are in residential work groups, the higher is the intrinsic job satisfaction of the direct-care employees.

2) The more participative the work conditions are in residential work groups, the higher is the work performance of direct-care employees.

3) Performance-outcome instrumentalities mediate the relationship between more PDM being utilized in residential work groups and the correspondingly higher intrinsic job satisfaction of the direct-care employees in those groups.

4) Perceived self-efficacy beliefs mediate the relationship between more PDM being utilized in residential work groups and the correspondingly higher work performance of the direct-care employees in those work groups.

**Ancillary Analyses**

In addition to the stated hypotheses, the potential influence of the variables, perceived skill-utilization and locus of control were also explored. The research of O'brien (1984a, 1984b) has suggested that skill-utilization
may be an important determinant of employees' control expectancies. Since the present study is considering employees' control expectancies as a variable integral to the relationships between PDM and the outcomes of PDM, it is important to assess the role that skill-utilization might play in these relationships.

Locus of control is another variable that may affect the control expectancies that are proposed to mediate the relationships between PDM and its outcomes. In that locus of control is a more generalized control expectancy than self-efficacy or instrumentalities, it may have an effect on these work situation-specific expectancies, as suggested by Gist (1987). The potential for locus of control to influence employees' job satisfaction (O'brien, 1984b) and their satisfaction with participative versus directive management styles (Mitchell, Smyser, & Weed, 1975) were additional reasons to include the locus of control variable in the present study.
Method

Subjects

Data from two samples of direct-care employees in a Provincial Schedule One residential facility for developmentally delayed persons were used in the present research. The official job designation for all of the participants was Developmental Service Worker - level two. For expediency they will be referred to as residential workers, for the remainder of this thesis.

Data collected from the primary research sample of 62 residential workers in eight residential work groups were used to test the hypotheses of the present research. The residential workers in the eight residential work groups who participated in the present research were classified into three levels of subordinate participation in decision making reported on the residences.

The second sample consisted of pre-intervention data collected from 20 residential workers on two residences in 1986, before a participative management intervention commenced. Residential workers on these two residences were included in the primary research sample. The pre-intervention data were used to test for differences in job satisfaction and quality of worklife of residential workers on the two residences before, and two years after, a major PDM intervention. The two research samples are outlined in Figure 1 and described in the following subsections.
Outline of the Composition of the Two Research Samples Used in the Present Research

Primary Research Sample

In September and October, 1989, 62 residential workers on eight residences completed questionnaires on job satisfaction, quality of worklife, and the other variables which were used to test the hypotheses of the present research. The eight residences were classified according to the level of PDM on each of the residences, as measured in semi-structured interviews of the residential workers. The classification resulted in the 62 subjects in the primary research sample being categorized as follows:

Formal Participation Residences - Fifteen residential workers on the two residences that had been involved in the 1986 participative management intervention.

Informal Participation Residences - Twenty-five residential workers on three residences that were classified as having informal PDM.

Non Participation Residences - Twenty-two residential workers on three residences that were classified as not having PDM.

Pre-intervention Sample

Evaluation research pretest data on the job satisfaction and quality of worklife of 20 residential workers in two residences which were involved in a year-long participative management demonstration project which commenced in September, 1986.
Primary Research Sample

Sixty-two permanent, full-time residential workers served as voluntary participants in the primary research sample. These 62 subjects were divided into three groups, based on a classification of the degree of PDM measured in their residential work groups.

The primary research sample was comprised of 48 females and 14 males with an overall mean age of 34.3 years (SD=8.5). The tenure of these participants ranged from one to 26 years, with a mean of 10 years. Classification of the primary research sample according to the PDM measured on the residences resulted in the following three groups of subjects: a) 13 females and 2 males (mean age=31.8, SD=6.3) on two residences classified as Formal Participation (FP) residences, b) 16 females and 9 males (mean age=37.6, SD=8.7) on three residences classified as Informal Participation (IP) residences, and c) 19 females and 3 males (mean age=32.2, SD=8.7) on three residences classified as Non Participation (NP) residences.

Pre-intervention Sample

The pre-intervention sample consisted of 15 females and 5 males with a mean age of 31.3 years (SD= 8.62). In 1986, these residential workers were working on two residences that were about to be involved in a participative management demonstration project. Job satisfaction and quality of worklife data collected from these residential workers in
1986 as pretest data for evaluation research of the 
demonstration project were utilized for the present 
research. The residential workers on these two residences 
in 1989 were included in the 1989 test administration. 
Therefore, the pre-intervention data provided information on 
the residences in one of the three PDM classifications of 
the present research before a major PDM manipulation. 

Recruitment of Subjects

The initial potential subject pool for the primary 
research sample consisted of all the permanent, full-time 
residential workers on 10 of the 27 residences in the 
facility. Each of the 27 residences in the facility had 
staff complements of 9 to 13 residential workers for around-
the-clock care of the residents. During a typical day shift 
on a residence, three residential workers and an assistant 
supervisor would be on duty under a residence supervisor. 
The client populations of the residences varied from 10 (for 
two special care residences) to 35 developmentally delayed 
adults.

The residential workers from ten residences were asked 
to participate in the present research. These ten 
residences were selected for the present research on the 
following bases: 1) to have two residences that had 
experienced a PDM intervention in the past, and 2) to have a 
group of additional residences with no formal PDM experience 
that; a) had comparable work duties for residential workers
because of the functional level of the residents, and b) were not involved at the time in an organizational intervention.

Two of the ten residences had been involved in a participative management project from September, 1986 to August, 1987, and had reportedly been using participative decision making since that time. The remaining eight residences had not experienced a concerted effort to establish PDM, and the nature of decision making used on these residences was not known at the start of the present research. Consequently, at least two of the ten residences that were invited to be involved in this research were assumed to be operating with participative decision making procedures.

During recruitment of subjects the research was described to the residential workers as an investigation of the impact of residence work procedures on direct-care residential employees. I informed the employees on the designated residences of the research in person at staff meetings, or by way of a memo (see Appendix A) if they were not at one of the meetings. All potential subjects were informed that involvement in the research was voluntary. Two-thirds of a residence's permanent, full-time residential worker complement was considered adequate involvement to represent a residence. Of the 102 permanent, full-time residential workers on the ten residences, 18 decided to not
participate in the research. Two residences that were approached were not included in the research because not enough residential workers completed the questionnaires to adequately represent those residences. Nine residential workers were not available due to maternity leave, extended sick leave, or Workman's Compensation Board leave. The responses of four residential workers were rejected for research purposes because two of these employees had only recently been transferred to their residence, and the questionnaires of the other two were unusable. Consequently, the primary sample for this research consisted of 62 permanent full-time residential workers from eight residences in the research setting.

Research Design

A quasi-experimental design was utilized in a field setting. The primary independent variable, PDM, had been manipulated in two of the eight residences involved in this research three years prior to the start of the present study. These two residences had been involved in a year-long demonstration project in participative management.

Two years after the completion of the participative management demonstration project, the data for the present research were collected. The levels of PDM in the two project residences, and in six other residences in the facility, were measured with semi-structured interviews and questionnaires administered to direct-care employees. These
measures of PDM were administered by research assistants who were blind to the purposes of the research and to the previous involvement of two of the residences in the participation project.

An assumption of the present research was that the two project residences would comprise one distinct level of PDM in comparison to the other six residences. It was anticipated that an additional level of PDM would be evident in the six residences that had not received a PDM intervention. The design of this research, therefore, allowed for the comparison of residential workers in two residential work groups in which PDM had been manipulated, to the residential workers in six other residential groups with unmanipulated, but presumably different levels of PDM.

Pretest data on the job satisfaction and the quality of worklife of residential workers on the two demonstration project residences in 1986 were compared to job satisfaction and quality of worklife data collected from residential workers on these two residences during the present research. Nine of the fifteen subjects from these two residences in the primary research sample were also in the pre-intervention sample. The pre-intervention data allowed the effects of the PDM intervention on the job satisfaction and quality of worklife of residential workers to be assessed with a pretest-posttest comparison.
Measurement Instruments

Measurement instruments were used in this study to measure variables that were conceptualized in four different ways. First, the primary independent variable, level of PDM being utilized on the residences, was measured with semi-structured interviews, a group influence questionnaire, and with subjective data. Second, two ten-item scales were developed to measure the two variables, self-efficacy and performance-outcome instrumentalities, which were conceptualized as variables that mediate the relationships between participation and its outcomes, work performance and job satisfaction. Third, two outcome variables of employee participation, work performance and job satisfaction, were measured as dependent variables. Finally, three supplementary variables were measured; the variables skill-utilization and locus of control were measured to examine their effects on the relationships between participation and the mediating and outcome variables, and the variable quality of work-life was measured to assess the effectiveness of a participative management intervention.

The measurement instruments are described below according to which type of variable they were used to measure.

Independent Variable

Semi-structured interviews.

An interview questionnaire was developed to measure the decision making procedures routinely used on the residences.
The questionnaire was comprised of seven questions, which are included in Appendix B. The first two questions were designed to allow the interviewer to establish rapport with the subjects and to get a general sense of the subjects' disposition toward their work. The remaining five questions presented hypothetical scenarios that might occur on the subjects' residences. Subjects were asked what they thought would happen on their residence should each of the scenarios occur. The five scenarios dealt with situations involving 1) changes to how their work was done, 2) changes to facility policy, 3) disruption of the residence work schedule, 4) the subject changing a work duty, and 5) a residence staff meeting.

Interviewers had recording sheets (also in Appendix B) with room to make notes on the subjects' responses and a rating scale for each scenario, ranging from one to four, to rate the subjects' responses. The responses were rated on how participative the subject described the decision-making procedure to be for each of the hypothetical scenarios. The coefficient alpha = .77 for the five-item interview scale.

**Perceived Group Influence Scale.**

Two perceived influence measures were initially utilized in the present study. One seven-item scale measured perceptions of personal influence over decisions concerning work activities and coordination activities at work (Moch, Cammann, and Cooke, 1980). Six of these seven
items were modified into a Perceived Group Influence Scale. Items on this scale measured subjects' perceptions of how much influence the residential workers in their work group, as a whole, had on making decisions on their residences.

The Perceived Group Influence Scale was used in the classification of the residences on the independent variable, PDM. Since the group influence scale was a modification of the personal influence scale, and the Pearson correlation between the two scales was $r = .88$, the personal influence scale could not have been considered a separate measure. Consequently, the personal influence scale was not used in data analyses. The items of the Perceived Group Influence Scale are included in Appendix C. The coefficient alpha = .92 for the Perceived Group Influence Scale.

Mediating Variables

Self-efficacy Scale.

A ten-item measure of self-efficacy (see Appendix D) was developed for the purposes of this study according to the procedures outlined by Locke et al. (1984). Each of the ten items consisted of a statement of belief in the ability to perform a job task of the residential worker position, with a blank at the end of the statement. Each statement was followed by descriptions of four levels of work performance, ranging from adequately to exceptionally well.

Subjects were instructed to write yes or no beside each
performance level to indicate whether they felt capable of that level of performance, and to fill in a percentage rating to express their certainty of each rating. The job tasks used in the ten items were obtained from the job analysis portion of the development of a Behaviourally Anchored Rating Scale for residential workers at the research location in 1986.

The item format used for the items measured the magnitude and the strength dimensions of self-efficacy. The magnitude of self-efficacy was reflected by the level of performance to which a subject responded positively, and the certainty ratings indicated the strength of self-efficacy. Locke et al. (1984) noted that this item format was supported by a study by Ilgen, Nebeker, and Pritchard (1981) that empirically assessed fifteen types of expectancy theory scale formats.

Two methods of scoring the self-efficacy items were described by Locke, Motowidlo, and Bobko (1986). The method described as being used by Bandura was to record the certainty, or strength rating given for the highest level of performance (on the magnitude rating) to which the subject indicated he or she could perform successfully. An alternate scoring procedure described by Locke et al. (1986) was to record the mean score for all the levels of performance to which the subject indicated a positive magnitude rating. Both methods of scoring were utilized in
the present study and the internal reliability of the self-efficacy scale was calculated for scores obtained with each method. Since a higher coefficient alpha ($\alpha = .82$) was obtained in the present study for the scoring method used by Bandura, the Bandura scoring procedure was used to calculate the self-efficacy scores used in the data analyses of this research.

Post hoc examination of the response patterns obtained on the self-efficacy scale revealed a restricted range of scores on the Self-efficacy Scale. Ninety percent of subjects scored within the top 37% of the scoring range of the scale and 50% scored within the top 18% of the scale. The restricted response variance evident for this scale will be considered in the discussion of the interpretation of the self-efficacy findings in Chapter 4.

**Instrumentality Scale.**

A ten-item scale to measure performance-outcome instrumentalities (see Appendix E) was constructed as described above for the Self-efficacy Scale. As suggested by Barling and Beattie (1983), the same performance tasks were used for the instrumentality items as were used in the self-efficacy items to maintain consistency between the two variables. The same scoring procedure used for the self-efficacy items was used for the instrumentality items. The coefficient alpha = .82 for the Instrumentality Scale.

Examination of the response patterns for the
Instrumentality Scale showed that the instrumentality scores were not as restricted in range as the self-efficacy scores. Ninety percent of the subjects scored within the top 60% of the Instrumentality Scale's score range, and 50% scored within the top 38% of the scale.

Valency Scale.

In expectancy theory, valence refers to the value that a person attaches to a particular outcome, or consequence of work performance. Since the valence of a work outcome describes how valuable, or important the outcome is to a person, valence is critical to performance-outcome instrumentalities.

To obtain outcomes of work to include in the performance-outcome instrumentalities items that were important to the residential workers, a short Work Outcomes Survey was administered to employees on seven of the residences approached to participate in the present research. The survey explained what was meant by work outcomes and asked what consequences of effective work performance were important to the residential workers. A copy of the Work Outcomes Survey is included in Appendix F.

The results of the Work Outcomes Survey identified four outcomes of effective work performance that the residential workers reported as being valent to them. These work outcomes were incorporated into the Instrumentality Scale items. The four valent work outcomes obtained from
administering the Work Outcomes Survey were also developed into a four-item Valency Scale. The purpose of administering the Valency Scale was to confirm that the outcomes included in the instrumentality items were, in fact, valent outcomes for the participants in the present research.

The Valency Scale is included in Appendix G. The items' anchor descriptors, ranging from 1) very unattractive to 5) very attractive, were the descriptors Ilgen et al. (1981) recommended for valence items. The mean scores on the four valence items for all 62 subjects ranged from 4.0 to 4.5 on the five point scales, indicating that the residential workers in the present research did find these to be valued outcomes of work.

**Dependent Variables**

**Minnesota Satisfaction Questionnaire.**

The Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Dawis, England, & Lofquist, 1967) was used to measure the job satisfaction of the residential workers. The MSQ consists of 120 items which comprise 20 five-item subscales measuring satisfaction with numerous aspects of the work experience. A composite general satisfaction subscale is comprised of one item from each of the 20 five-item satisfaction subscales. Each item on the MSQ has a 5-point rating scale ranging from (1) "very dissatisfied" to (5) "very satisfied." The MSQ is a self-administered instrument
which takes approximately 20 minutes to complete. Readability is at the fifth grade level.

Extensive research concerning the psychometric properties of the MSQ have been reported by Weiss et al. (1967). These authors suggested that the MSQ subscales were found to have adequate internal consistency reliabilities, as estimated by the Hoyt analysis of variance method. "Of the 567 Hoyt reliability coefficients reported ... (27 groups with 21 scales each), 83% were .80 or higher and only 2.5% were lower than .70" (Weiss et al., 1967, p. 14).

The concurrent validity of the MSQ was supported by evidence that it differentiated between occupational differences in job satisfaction. Statistically significant differences in MSQ data were found between 25 occupational groups. The relative means for each of the occupational groups showed that the occupational differences in job satisfaction as measured by the MSQ were comparable to results reported in the research literature (Weiss et al., 1967).

The results of factor analyses of the 20 MSQ subscales, computed from the data of 14 norm groups, were also reported by Weiss et al. (1967). Although the results of factor analyses suggested slightly different factor structures for some of the occupational groups, Weiss et al. reported that the results "in general indicate that about half of the common MSQ scale score variance can be represented by an
extrinsic satisfaction factor, defined by the two Supervision scales, Company Policies and Practices, Working Conditions, Advancement, Compensation and Security. The remaining scales define one or more intrinsic satisfaction factors, accounting for the other half of the common variance" (p. 23). These 13 remaining MSQ subscales were included in a scale to measure intrinsic job satisfaction for the purposes of the present research.

**Behaviorally Anchored Rating Scale.**

The work performance of the residential workers involved in the present research was measured by having supervisors rate their subordinates' work performance. The rating instrument used was a Behaviourally Anchored Rating Scale (BARS) performance appraisal form. This BARS form (see appendix H) was previously developed for the DSW-2 job classification at the facility where the present research took place. An analysis to determine the internal reliability of the eight-item scale resulted in a coefficient alpha=.85.

**Supplementary Variables**

**Perceived Skill-Utilization Scale.**

Four items developed by O'Brien and Dowling (1980) were used to measure perceived skill-utilization (see Appendix J). O'Brien and Dowling reported a coefficient alpha=.78 for the Perceived Skill-Utilization Scale. The coefficient alpha calculated from the present sample was .73.
Work Locus of Control Scale.

The locus of control of subjects measured with the Work Locus of Control Scale (WLCS) (Spector, 1988). The WLCS (see appendix I) was described by Spector (1988) as "a 16 item measure of generalized control beliefs in work settings" (p. 335). Spector reported that the WLCS correlated significantly with Rotter's (1966) I-E Scale, as well as with "job satisfaction, intention of quitting, perceived influence at work, role stress and perceptions of supervisory style" (p. 335). The coefficient alpha of the WLCS was reported as .85 for four sample groups (n=783), .80 for a sample of mental health workers (n=160), and .75 for a sample of convenience store workers (n=287). The coefficient alpha from an analysis of responses from the 62 residential workers in the present sample was .87.

Quality of Worklife Survey.

A Quality of Worklife Survey (QWLS) was compiled with thirteen items from a questionnaire which was developed for survey research in 1983 at the research site of the present study. The QWLS was used to compare subjects' responses to those of employees involved in participation research three years prior to the present study. The items, which are included in appendix K, concern employees' social and higher order needs, and their degree of perceived control over their work. The coefficient alpha calculated from the present sample was .84.
Procedure

The present study made use of a manipulation of the main independent variable, participation in decision making, at the same research location three years before the present research commenced. Since I had conducted program evaluation research of the participation intervention from 1986 to 1987, pretest data on the employees working on the two residences involved in the participation project were available for use in the present research. Before describing the procedures used in the present research, the 1986 participative management intervention will be briefly described.

1986 Participative Management Intervention

The 1986 participative management intervention began with an intensive two-week training workshop in PDM for all of the supervisory and direct-care employees on the two residences. The training focused on such topics as participative management, team building, leadership effectiveness, creative problem solving, and participative performance appraisal.

After this training the staff returned to their residences and integrated participatory procedures into their normal work routine. An organizational change that was central to the functioning of PDM on the two residences was the initiation of bi-weekly team meetings. These meetings became the forum in which much of the subordinate
involvement in decision making took place. The employees on the residences made up the agendas for the meetings by writing points for discussion on an agenda sheet posted in the residence office. The meetings were conducted by a rotating chairperson and secretary; the secretary of one meeting became the chairperson of the next meeting. At the meetings all decisions were made through group discussion and majority vote of the staff present. The project coordinator, acting as the supervisor of the two residences, attended the meetings in a non-voting advisory capacity.

Evaluation research of the demonstration project found statistically significant differences in the job satisfaction and quality of worklife of the 20 residential workers on the two project residences between 1986 and 1987. The scores on the MSQ Intrinsic, Extrinsic and General Satisfaction scales, and on the Quality of Worklife Survey for the residential workers on the project residences were more positive at the end of the project. The scores on these scales for 11 residential workers on two comparison residences remained relatively stable.

At the end of the one year demonstration project the assistant supervisor from one of these two residences was promoted to become supervisor of both residences, which continued to function participatively. The assistant supervisor of the other project residence was promoted to become supervisor of two other residences, one of which was
classified as an informal participation residence in the present research.

1989 Data Collection

A research proposal was presented to four residential unit directors and their consent was obtained for the employees on ten of the residences in their units to be involved in the research. Employees working on the residences were then approached and asked to participate in the study.

In an attempt to obtain work groups that operated both participatively and non-participatively, particular residences were invited to become involved in the research. The residential workers working on two residences that had been involved in a participative management project from 1986 to 1987 were asked to participate in this research. Residential workers from eight other residences were also invited to be involved. As mentioned above, however, two of these eight residences were not included in the research.

The present research was described to participating employees in all the groups as dissertation research that was exploring the impact of residence work procedures on residential workers, with the goal of improving the work experiences of direct-care workers. Before the questionnaires measuring the dependent variables of the present research were administered to subjects, a preliminary Work Outcomes Survey was administered to
residential workers or the residences to obtain valent outcomes to include in the items of the Instrumentalities Scale.

Two stages of data collection were then performed. First, measures of job satisfaction, work performance, self-efficacy, instrumentalities, skill-utilization, work locus of control, and quality of worklife were administered to the full-time residential workers on all eight residences who had volunteered to participate in the research. When all the employees on a residence who had volunteered to participate in the research had completed the questionnaires, the second stage was initiated. In the second stage data was collected from the residential workers in order to classify the residences on the level of PDM experienced by residential workers.

**Measurement of research variables.**

During stage one of this research, questionnaires were administered to residential workers individually, or in groups of two or three, in a private area on or near the residence they worked on, during their working hours. The questionnaires were administered by myself and by psychometrists who were employed at the residential facility where the research took place. Each psychometrist received standardized instructions on how to administer the questionnaires (see Appendix L). Convenient times for the questionnaires to be administered were scheduled with the
residence supervisors.

Before administering the questionnaires, the researcher informed the subject(s) of confidentiality and of their right to withdraw, asked them if they had any questions, and asked them to read and sign a consent to participate in research form (see Appendix M). If a residential worker chose to not participate in the research, he/she would not sign the consent form and would return to work. The subjects were asked to not discuss the questionnaires with their co-workers until after their co-workers had completed them. Testing time was less than one hour.

Data on subjects' work performance were obtained by having their supervisors rate the subjects' performance on Behaviourally Anchored Rating Scales. The BARS forms were given to the supervisors of the residences involved in the research after all the residential workers on their residence who were going to participate in the research had completed the questionnaires. The completed BARS forms were picked up from the supervisors approximately one week later.

PDM classification of residences.

The second stage of the research was to classify the residences included in the research according to their level of participation. Approximately two weeks after all the employees on a residence who had volunteered for the research had completed the stage one questionnaires, semi-structured interviews and a short perceived influence
questionnaire were administered to as many of the subjects on that residence as was possible. The perceived influence questionnaires were administered to subjects whether or not it was possible to schedule them for interviewing.

The interviews were conducted by three graduate students in psychology and a cooperative work program student doing a work term for the psychology department at the research setting. The standard instructions that were given to the interviewers are included in Appendix N. All interviewers were blind to the purposes of the research, and to the fact that some of the employees they interviewed may have been working on residences that had been involved in an employee participation project.

Three types of data were used to classify the residential work groups according to the level of participation residential workers experienced in the making of work-related decisions. The primary criterion was the interviewers' ratings of employees' responses to questions about how decisions would be made in hypothetical scenarios described by the interviewer. These data were termed the "semi-structured interview data" and were used to classify the residences according to the routine decision making procedures used on the eight residences.

The secondary criterion was comprised of residential workers' responses to the Perceived Group Influence Scale. This scale provided a measure of the amount of influence the
residential workers, as a group, had on making decisions under the different types of decision making procedures that were identified with the first criterion. The subjects' responses to the scale were termed the "perceived group influence data".

Finally, qualitative data were used to substantiate the classification of the residences into the levels of decision making determined with the two criteria described above. The qualitative data were in the forms of information gained from monitoring a team meeting, from management training, and from informal conversations with facility personnel. The participation classification of residences was completed before any of the other data were analyzed.

It was originally anticipated that two types of decision making procedures would be found on the eight residences; participative and nonparticipative decision making. As will be explained below, however, preliminary results of the primary classification criterion data suggested a three-level classification. The three-level classification was not supported by the secondary classification criterion. Therefore, both a three-level and a two-level classification were examined to determine which was the most appropriate level of analysis.

The semi-structured interviews were conducted with 51 of the 62 subjects in the present research. Examination of the interviewers' ratings revealed that residential workers
on the two residences that had experienced the participative management intervention in 1986 clearly comprised one distinct group in terms of the procedures routinely used to make decisions. Notes of the residential workers' responses made by the interviewers during the interviews indicated that these employees reported that most decisions on the two residences were made by majority vote of residence staff during biweekly team meetings. Since formal PDM procedures had been established on these two residences during the 1986 participative management intervention, these were classified as Formal Participation (FP) residences.

The interview ratings for one group of three residences were moderate in relation to the FP residences. The interviewers' notes indicated that the residential workers on these residences reported that their residence supervisors were influenced by input from the residential workers and that decisions were sometimes made with a majority decision of the residence staff during occasional meetings at shift-change. These three residences were classified as Informal Participation (IP) residences because there were no formal mechanisms established on these residences for subordinates to routinely participate in decision making.

The interview ratings for the remaining three residences were low in relation to the FP and the IP residences. The interviewers' notes for residential
workers' responses on these three residences presented a range of opinions regarding the influence of residential workers in decision-making situations. Although a few residential workers on these three residences reported majority decisions, most reported that decisions were made unilaterally by the supervisor. A description of decision making typical of what was reported on these residences was that group input would be obtained, and the supervisor would then make the decision that he or she wanted to make. These three residences were classified as Non Participation (NP) residences.

The classification of residences described above was subjected to statistical analyses to verify that the three categories obtained represented distinct levels of PDM. The results of the analyses, which are presented in the next chapter, revealed that the three-level classification was supported by the interview data and the qualitative data.

The Perceived Group Influence Scale data, however, showed a statistically significant difference between the FP residences and both the IP and the NP residences, but no difference between the latter two groups of residences. Due to this disagreement in classification between the primary and the secondary classification criteria, two approaches to analyzing the data in this study were examined.

The first approach was to analyze the data according to the three-level classification. This strategy assumed that
the three-level classification represented three types of
decision making procedures that allowed for different
amounts of subordinate input into making decisions. The use
of this classification also assumed that, although the three
groups of residences were different in terms of reported
decision making procedures, only the formal participation
procedures were associated with employees having a greater
sense of genuine influence in making decisions.

The second approach to analyzing the data was to
determine a classification of the residences that met both
the primary and secondary classification criteria and was
supported by the qualitative data. This approach assumed
that the Perceived Group Influence Scale was a valid
criterion on which to classify the work groups. This
position would hold that, in addition to reported
differences in decision making procedures used on the
residences, an important distinction to be made was in
differences in how much influence employees perceived they
had in making decisions.

A two-level classification was determined empirically
by assessing the differences between various two-way
combinations of residences according to the semi-structured
interview data and the perceived group influence data. A
classification using six of the eight residences (n=48)
conformed to both of these types of classification criteria
data and was also supported by the qualitative data. The
two Formal Participation residences of the three-level classification constituted one group. Four of the remaining six residences were found to comprise a second group that was different from the FP residences on all three types of classification data.

Results from analyses run using this two-level classification did not differ appreciably from the findings gained with the three-level classification. Consequently, the results from analyses using all 62 subjects in the three-level classification of residences are reported in the next chapter.

Debriefing

Written summaries of the research and the major findings were provided to both the administration of the facility and the ten residences that were initially invited to participate in the research. To ensure confidentiality of the work groups that had participated, it was not revealed which of the residences had been in each of the three classifications. The identities of the two residences that were not included in the research were also not revealed in these reports.

Debriefing meetings were arranged to present the research summaries to the work groups that had been invited to participate, and to answer any questions from the residential workers. A meeting was also held with the residential administrator to discuss the research findings.
Statistical Analyses

Several statistical procedures were utilized to analyze the data of the present study. The statistics used ranged from paired samples and independent groups t-tests, to hierarchical multiple regression analyses. The following points are discussed to clarify the use of the statistics used for this research.

T-tests

To assess the effects of the participative management intervention which began on two residences in 1986, t-tests comparing data collected in 1986 with similar data on job satisfaction and quality of worklife collected in 1989 were computed. As indicated above, these two residences were classified as FP residences in the present research. Since nine of the residential workers on the FP residences were also involved in the 1986 intervention, a "within subjects" analysis was possible.

Two paired samples t-tests were run to test whether the 1986 PDM intervention had had a lasting effect on the job satisfaction and the quality of worklife of the nine employees that were on these two residences both in 1986 and in 1989. In addition to the paired samples t-tests, independent samples t-tests were run to assess differences in job satisfaction and quality of worklife between the 20 pre-intervention subjects on the FP residences in 1986 and the 15 employees on those residences in 1989.
A concern when using t-tests to assess differences over time is the possibility of regression toward the mean (Horowitz, 1974). A difference between testings may appear statistically significant partially because the scores obtained on the second testing have regressed toward the population mean. This is particularly likely if the sample mean score on the first testing is substantially above or below the overall mean score on that test for the population.

A comparison group was used as a methodological safeguard against regression toward the mean in the evaluation research of the 1986-1987 participation intervention. The use of the comparison group demonstrated that the improvements in job satisfaction and quality of worklife between 1986 and 1987 were attributable to the intervention and were not the result of regression toward the mean. Consequently, the possibility of regression toward the mean operating in t-tests that were run to assess the continuation of improved job satisfaction and quality of worklife of residential workers had already been accounted for during the evaluation research of the 1986-1987 PDM intervention.

Since the analyses to assess the effects of the PDM intervention are not central to the hypotheses tested by the present study, the results from these analyses will be included in an appendix. The general findings of these
analyses will be discussed as preliminary information in the presentation of the results of hypothesis one in the Results Chapter.

Analysis of Variance Procedures

One-way analysis of variance (ANOVA) was used to verify the PDM classification of residences according to the primary and the secondary classification criteria. A one-way ANOVA compared the semi-structured interview data and the perceived group influence data between the three groups of residences.

When more than two groups are included in an ANOVA, a significant finding does not specify which groups are significantly different from each other. To reduce the chance of a Type 1 error (Tabachnick & Fidell, 1983), a Scheffé test was used to determine which treatment means differed from each other at a statistically significant level. Tabachnick & Fidell (1983) advised that the Scheffé test is the most conservative of such tests.

The four hypotheses of the present research were posed to test two aspects of the relationships between the variables under study. Hypotheses one and two focused on differences in intrinsic job satisfaction (for hypothesis one) and in work performance (for hypothesis two) between the employees working in groups of residences with different levels of participation in decision making. Since these two hypotheses were concerned with differences between groups,
they were tested with one-way ANOVAs.

For hypothesis one, a post hoc analysis was also performed. The thirteen subscales of the MSQ Intrinsic Satisfaction Scale were used as dependent variables in a one-way multivariate analysis of variance (MANOVA). The patterns in subscale scores between the groups of residences in the different classifications of PDM were examined to assess the meaning of a statistically significant difference in the overall MANOVA.

A 2X2 ANOVA was used to investigate an interaction effect between residential workers' locus of control (intrinsic vs. extrinsic) and the level of participation they perceived on their residences (high vs. low perceived group influence). The classification of subjects into internals and externals on the basis of their Work Locus of Control Scale scores resulted in a sample of 28 subjects for this analysis.

Hierarchical multiple regression

Hypotheses three and four each concerned the assessment of relationships between single dependent variables and two independent variables. The dependent variables were intrinsic job satisfaction for hypothesis three, and work performance for hypothesis four. The independent variables were PDM and performance-outcome instrumentalities for hypothesis three, and PDM and self-efficacy for hypothesis four. Hierarchical multiple regression analyses were
utilized to examine these relationships.

Tabachnick and Fidell (1989) pointed out that there are three major types of multiple regression. They described differences among the three regression strategies as involving "what happens to overlapping variability due to correlated IVs [independent variables] and who determines the order of entry of IVs into the equation" (p. 141). In hierarchical regression, the order in which independent variables enter the regression equation is specified by the researcher. As each independent variable enters the equation, it is assigned the unique and overlapping or shared variability it contributes to the regression equation at its own point of entry into the equation (Tabachnick & Fidell, 1989).

Hierarchical multiple regression allows the researcher more control than the other two multiple regression procedures in terms of examining the contingencies among the independent variables in a regression equation. In addition, significance tests can assess the proportion of the variance in the dependent variable that is accounted for by individual independent variables. Hierarchical regression is therefore useful for testing hypotheses because the variables in question can be considered and assessed in an order determined by theoretical considerations rather than by the statistical criteria of the regression program.
Tabachnick and Fidell (1989) advised that the squared semipartial correlation ($sr^2$) is a very useful measure of the importance of an independent variable to a regression equation. In hierarchical regression the $sr^2$ of the first variable entered into a regression equation shows the total proportion of the variance in a regression equation (both its unique variance and the variance shared with other variables) that is attributable to that variable at the point it enters the regression equation. For successive independent variables the $sr^2$ represents only the unique proportion of the variance in the dependent variable which is accounted for by that independent variable. Tabachnick and Fidell (1989) note that the $sr^2$ of a variable can be statistically assessed with an $F$-ratio calculated as follows:

$$F = \frac{sr^2}{(1-R^2)/df(residual)}$$

where $R^2$ refers to $R^2$ after all IVs are considered, and $df(residual)$ refers to the residual degrees of freedom at the final step of the regression.

Hierarchical multiple regression analysis was appropriate for testing hypotheses three and four. Each of these hypotheses dealt with one independent variable acting as a mediator of another. As indicated earlier, the instrumentalities of residential workers were postulated to mediate the relationship between PDM and intrinsic job satisfaction. In the same manner the self-efficacy beliefs
of residential workers were postulated to mediate the relationship between PDM and work performance.

The analytic strategy used to test hypotheses three and four consisted of two stages. First, regressions were run with the single independent variable, PDM, entered to assess the relationships between PDM and each of the outcome variables, intrinsic job satisfaction and work performance. The second stage was to run hierarchical regressions on the respective dependent variables with first the proposed intervening variables (instrumentalities for hypothesis three and self-efficacy for hypothesis four), then the PDM variable entered into the regressions.

The rationale for entering the proposed mediating variables before PDM in the hierarchical regression was that these were the focal variables in the relationships between PDM and the outcome variables that the hypotheses were examining. By entering the mediating variables first, both the unique variance they contributed to the outcome variables, and the variance in the outcome variables they shared with PDM were attributed to the mediating variables. In addition, entering PDM into a hierarchical regression after the proposed mediating variable had been entered provided an estimate of the unique variance in the outcome variable accounted for by PDM.

The total variance in the outcome variables attributable to the mediating variables was compared to the
total and the unique proportions of variance attributable to PDM. These comparisons provided a pattern of results that was used to determine the extent to which the intervening variables might have performed a mediating role.

A particular pattern of results from the two-stage regression strategy was required to support each of hypotheses three and four. First, the initial regression with only the PDM variable entered as an independent variable would have to show that the total proportion of variance in the dependent variable attributed to PDM was statistically significant. Also, the unique variance in the dependent variable contributed by PDM, with the variance of the proposed mediator variable partialled out (sr² for PDM at step two of the hierarchical regression) would have to be at a statistically non-significant level. This would indicate that a critical portion of the variance contributing to PDM reaching a level of statistical significance in the first regression equation was accounted for by the mediating variable.

The pattern of results described above would indicate that the variance in the dependent variable attributed to the intervening variable had contributed to raising the proportion of variance accounted for by PDM to a statistically significant level. Conceptually, this pattern of results would imply that it was the change in the proposed mediating variable that had resulted in the change
in the outcome variable. If each of the variables, instrumentalities and self-efficacy, contributed a substantial proportion of variance to their respective outcome variables that was different from the unique variance attributable to PDM, the possibility that they may mediate between PDM and the outcome variables would be supported.
Results

This chapter will be organized as follows: First, results of statistical analyses used to assess the PDM classification of residences will be presented. Second, the results of the analyses used to test the hypotheses of the present research will be described. Hypotheses one and two were tested using analysis of variance procedures. Multiple regression analyses were used to test hypotheses three and four. Finally, ancillary analyses that were used to examine the roles that the variables skill-utilization and locus of control play in the relationship between PDM and job satisfaction will be presented. All of the statistics were performed using the SPSS/PC+ program.

Verification of PDM Classifications

Data were analysed to assess the classification of residences into three different levels of employee participation in decision making. Results from analyses based on the semi-structured interview data and on the Perceived Group Influence Scale data will be presented. Descriptions of qualitative data concerning the management styles used on the residences will also be presented to support the three-level classification.

Semi-structured Interview Data

Fifty-one of the subjects in the primary research sample were interviewed. Based on the semi-structured interview data, each of the eight residences were classified
into one of three levels of decision making. A one-way ANOVA was run to compare the three levels of participation. The total mean rating was 12.00 (\(n=19\), \(SD=3.43\)) for the NP (non-participation) residences, 14.33 (\(n=18\), \(SD=2.38\)) for the IP (informal participation) residences, and 17.36 (\(n=14\), \(SD=2.13\)) for the FP (formal participation) residences. The ANOVA shown in Table 1 indicated a statistically significant difference between groups, \(F(2, 48)=15.12\), \(p<.001\).

Table 1

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>231.37</td>
<td>2</td>
<td>15.12</td>
<td>.001</td>
</tr>
<tr>
<td>Within groups</td>
<td>367.21</td>
<td>48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Results of the Scheffé procedure indicated that the interviewers' ratings for all three groups of residences were different from each other at a statistically significant level. Therefore, the classification of residences into three distinct groups on the basis of interviewers' ratings was supported.

Perceived Group Influence Scale Data

A one-way ANOVA using the Perceived Group Influence Scale (PGIS) data was run to compare the degree of involvement in decision making the residential workers in
each of the three levels of PDM felt they had in making work-related decisions. Fifty-six of the 62 subjects in the primary research sample completed the PGIS.

The mean scores on the PGIS for the residential workers in each group of residences were: 23.75 (n=20, SD=6.31) for those on the NP residences, 25.00 (n=23, SD=6.01) for the IP residences, and 32.15 (n=13, SD=6.99) for the FP residences. As shown in Table 2, a one-way ANOVA indicated a statistically significant difference for the PGIS scores.

Table 2

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>613.99</td>
<td>2</td>
<td>7.61</td>
<td>.001</td>
</tr>
<tr>
<td>Within groups</td>
<td>2137.44</td>
<td>53</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Scheffé procedure indicated that the difference between the FP residences and both the IP and the NP residences was statistically significant. There was not a statistically significant difference between the NP and the IP residences.

This finding reveals that the residential workers on the FP residences have higher perceived influence than the residential workers at the other two levels of PDM. There is not, however, a difference between the perceived group
influence of residential workers on the IP residences and those on the NP residences.

**Qualitative Data**

Qualitative data regarding the form of decision making utilized on the eight residences provided information that supported the classification of the residences into the FP, IP, and NP levels of PDM. The types of qualitative data utilized were, a) the monitoring of one of the biweekly team meetings used on each of the FP residences for residential workers to make decisions related to their work, b) the knowledge that one of the supervisors on an IP residence had received training in participatory management, and c) information gained from informal conversations with facility personnel.

The team meetings for both of the FP residences were chaired by a rotating chairperson, as described above in the Method chapter section regarding the 1986 participative management intervention. Issues that were open for discussion and decision making by the direct-care staff included anything that concerned the residents, the operation of the residence, or the work that the residential workers performed.

If a residential worker had an issue to be discussed he or she would put the issue on an agenda list for the upcoming team meeting. Each issue discussed at a team meeting was introduced by the residential worker who had put
it on the agenda list. Issues raised at the team meetings that were monitored for this research included: whether to change the work schedule by introducing a 12:00 PM to 8:00 PM midshift during weekdays; developing staff input into shift-assignment decisions during a holiday period; changes to behaviour programs for individual residents; the necessity of bed rails for some residents' beds; and planning a party for the residents.

When decisions were necessary the decisions were made by stated agreement, or by a majority vote of the residence staff present. Although the assistant supervisor on one of the two FP residences had a more prominent role in terms of clarifying issues, the decisions were clearly made by the direct-care staff on both FP residences.

Qualitative data for the IP residences took the form of the known supervisory training of one of the supervisors, and informal conversations I had with other facility personnel. The supervisor of one of the three residences that were classified as IP had been an assistant supervisor (team leader) on one of the current FP residences while that residence was involved in the participative management project. This supervisor had therefore been trained in PDM from the management perspective. During informal conversations with residential workers on the two residences this person now supervises, it was expressed that this supervisor obtains their input for many decisions that are
made on these two residences. However, a formal procedure for residential workers to regularly make residence decisions had not been established on these two IP residences.

Other indirect information gained through discussions with other supervisors and direct-care staff in the facility supported the classification of another IP residence. The supervisor of this IP residence was described by both the residential workers on that residence and by other personnel in the facility as involving subordinates in decisions. Similar indirect information from residential workers and other facility personnel was obtained regarding the more directive management styles of the supervisors on the three residences that were classified as NP residences.

Summary of PDM Classification Analyses

The procedures utilized to verify the classification of the eight residences provide qualified support for the classification of participative decision making into three groups of residences. The results of the analysis of interview data confirms three distinct groups of residences according to differences in routine decision making procedures that allow residential workers different amounts of input into decisions. The qualitative data provide additional support of the three-level classification by offering information about different supervisory styles used on the three groups of residences. The analysis of the
Perceived Group Influence Scale data, however, reveals that only the decision making procedures used on the FP residences are associated with residential workers reporting that they experience more influence in decision making.

As explained in the Method Chapter, two approaches to analyzing the data of the present research were considered because of the conflicting findings for three-level and two-level classifications. Since the primary classification criterion supported the three-level classification on the basis of differences in decision making procedures, and the two-level classification did not provide substantially different findings, the findings reported below were obtained from the three-level classification data.

Tests of Hypotheses

Data from the 62 residential workers in the primary research sample were used to test the hypotheses of the present research.

Analyses of Variance

As explained earlier, hypotheses one and two focused on differences in job satisfaction and work performance between employees working in groups of residences with different levels of participation in decision making. Consequently, analysis of variance procedures were used to test for the differences between groups.
Effects of PDM on job satisfaction.

Before analyses were run to test hypothesis one, preliminary analyses were performed to assess the effects of the 1986 participation intervention on the job satisfaction and quality of worklife of residential workers on the two FP residences. For the purposes of the present study these analyses accomplished a methodological check of a manipulation to a main independent variable, PDM, that had occurred three years prior to the present study.

Since this methodological check is secondary to the analyses run to test hypothesis one, the results of analyses performed to accomplish it are included in Appendix O. In general, the findings of the analyses assessing the effects of the 1986-1987 participation intervention on residential workers' job satisfaction and quality of worklife indicate that the positive effects of the intervention recorded in 1987 have been maintained for two additional years. This indicates that, in testing hypothesis one, a causal relationship can be inferred between the level of participation on the FP residences and the intrinsic job satisfaction of residential workers on those residences.

Hypothesis one stated that residential workers on residences operating under higher levels of PDM would have relatively higher levels of intrinsic job satisfaction. A one-way ANOVA was run to test for differences in intrinsic job satisfaction between the residential workers in the
three groups of residences.

The total mean scores on the MSQ Intrinsic Satisfaction Scale for the three groups of residences were 219.45 (SD=34.18) for workers on the NP residences, 221.56 (SD=30.58) for the IP residences, and 237.20 (SD=26.22) for the FP residences. As can be see in Table 3, the ANOVA did not show a statistically significant difference between the groups.

Table 3

One-way ANOVA of Intrinsic Job Satisfaction Between the NP, IP, and the FP Residences

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>3194.90</td>
<td>2</td>
<td>1.66</td>
<td>.20</td>
</tr>
<tr>
<td>Within groups</td>
<td>56608.01</td>
<td>48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After obtaining these ANOVA results a post-hoc analysis was performed to explore the reasons for the non-significant finding. A one-way multivariate analysis of variance (MANOVA) was run on scores of the 13 subscales of the MSQ Intrinsic Satisfaction Scale between the three groups of residences. This analysis was conducted to determine the pattern of scores between the three levels of PDM (non, informal and formal PDM).

Pillai's criterion was used to infer population differences on the basis of the sample data collected.
Tabachnick and Fidell (1983) suggested that Pillai's criterion is more robust than other available criteria for analyses of smaller sample sizes with unequal numbers of subjects in the groups being compared.

Table 4 shows that, using Pillai's criterion, the combined intrinsic job satisfaction subscales were affected to a statistically significant degree by the three levels of PDM, $F(26, 96) = 2.39, p < .001$. The results reflected a strong association between the PDM classification levels and the combined intrinsic satisfaction subscales, $\eta^2 = .65$.

### Table 4

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
<th>Approx. F</th>
<th>Hypoth. df</th>
<th>Error df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillai's</td>
<td>.786</td>
<td>2.39</td>
<td>26.00</td>
<td>96.00</td>
<td>.001</td>
</tr>
</tbody>
</table>

The statistically significant overall MANOVA finding indicates that the residential workers in the residences with the three levels of PDM have different patterns of scores on the 13 MSQ intrinsic satisfaction subscales. This significant result suggests that different patterns of scores on particular subscales of the intrinsic satisfaction scale may have accounted for the non-significant ANOVA finding for the total scale scores.

To determine the nature of the patterns on subscale
scores between the three levels of PDM, the univariate F-ratios, and the means and standard deviations for the 13 subscales of the MSQ Intrinsic Satisfaction Scale were examined. The patterns of scores for the MSQ intrinsic satisfaction subscales can be seen in Table 5.

When considering the univariate ANOVAs associated with a statistically significant MANOVA finding it is important to be aware of the correlations among the dependent variables of the MANOVA (Tabachnick & Fidell, 1983). The correlations between the 13 subscales of the MSQ Intrinsic Satisfaction Scale are presented in Table 6.

The mean scores for the first five MSQ subscales listed in Table 5 (MSQ subscales regarding satisfaction with independence, authority, responsibility, variety, and creativity) showed the predicted pattern between the three levels of PDM; intrinsic satisfaction increased in direct relation to higher levels of PDM. The mean scores for the next three MSQ subscales (regarding satisfaction with ability utilization, achievement, and activity) were higher for employees on the FP residences than for the employees on the NP and the IP residences.

For the two MSQ subscales, satisfaction with social service and with coworkers, the mean scores for employees on the FP and the NP residences were higher than for employees on the IP residences. The MSQ subscale, satisfaction with social status, was the only MSQ intrinsic satisfaction
Table 5

Means, (Standard Deviations), and Univariate F-ratios for Employees in the NP, IP, and the FP Groups of Residences on the Subscales of the MSQ Intrinsic Satisfaction Scale

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Group NP</th>
<th>Group IP</th>
<th>Group FP</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence</td>
<td>15.59 (4.28)</td>
<td>17.56 (3.61)</td>
<td>19.13 (3.48)</td>
<td>3.95*</td>
</tr>
<tr>
<td>Authority</td>
<td>15.68 (2.19)</td>
<td>16.68 (2.78)</td>
<td>17.87 (1.92)</td>
<td>3.73*</td>
</tr>
<tr>
<td>Responsibility</td>
<td>16.18 (3.46)</td>
<td>17.44 (2.94)</td>
<td>18.53 (2.47)</td>
<td>2.74</td>
</tr>
<tr>
<td>Variety</td>
<td>16.09 (3.89)</td>
<td>17.40 (3.24)</td>
<td>18.40 (3.68)</td>
<td>1.93</td>
</tr>
<tr>
<td>Creativity</td>
<td>15.32 (4.13)</td>
<td>16.40 (3.32)</td>
<td>17.73 (3.67)</td>
<td>1.90</td>
</tr>
<tr>
<td>Ability Utilization</td>
<td>16.45 (4.01)</td>
<td>16.16 (3.54)</td>
<td>18.73 (3.39)</td>
<td>2.52</td>
</tr>
<tr>
<td>Achievement</td>
<td>17.73 (4.05)</td>
<td>17.24 (3.23)</td>
<td>18.93 (2.02)</td>
<td>1.23</td>
</tr>
<tr>
<td>Activity</td>
<td>18.09 (4.29)</td>
<td>18.12 (3.07)</td>
<td>19.60 (2.82)</td>
<td>1.03</td>
</tr>
<tr>
<td>Social Service</td>
<td>20.91 (2.16)</td>
<td>19.12 (2.40)</td>
<td>20.47 (1.36)</td>
<td>4.58*</td>
</tr>
<tr>
<td>Coworkers</td>
<td>19.09 (4.18)</td>
<td>16.40 (3.92)</td>
<td>18.93 (4.62)</td>
<td>2.94</td>
</tr>
<tr>
<td>Social Status</td>
<td>5.82 (2.24)</td>
<td>15.52 (2.71)</td>
<td>14.20 (3.73)</td>
<td>1.57</td>
</tr>
<tr>
<td>Moral Values</td>
<td>17.77 (2.67)</td>
<td>18.04 (2.79)</td>
<td>18.67 (3.02)</td>
<td>0.46</td>
</tr>
<tr>
<td>Recognition</td>
<td>14.73 (4.46)</td>
<td>15.48 (4.08)</td>
<td>16.00 (3.95)</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Note. * These would be p<.05 significance levels in the univariate context, but cannot be legitimately evaluated.
### Table 6

**Pearson r Correlations Between the Subscales of the MSQ Intrinsic Satisfaction Scale**

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>Authority</td>
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<td>.57**</td>
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<td></td>
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<td></td>
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<tr>
<td>Variety</td>
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<td>.39**</td>
<td>.71**</td>
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<td>.76**</td>
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<td>.70**</td>
<td>.66**</td>
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<td>.51**</td>
<td>.73**</td>
<td>.52**</td>
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<td>.32*</td>
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<td>.39**</td>
<td>.48**</td>
<td></td>
</tr>
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<tr>
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<td>.51**</td>
<td>.51**</td>
<td>.36*</td>
<td>.48**</td>
<td>.44**</td>
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<td>Moral Values</td>
<td>.59**</td>
<td>.35*</td>
<td>.62**</td>
<td>.39**</td>
<td>.46**</td>
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</tr>
<tr>
<td>Recognition</td>
<td>.52**</td>
<td>.46**</td>
<td>.65**</td>
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### Table 6

<table>
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<tbody>
<tr>
<td>Activity</td>
<td>.73**</td>
<td></td>
<td></td>
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<tr>
<td>Social Service</td>
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<td>.05</td>
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<tr>
<td>Moral Values</td>
<td>.51**</td>
<td>.38*</td>
<td>.34*</td>
<td>.50**</td>
<td>-.06</td>
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<td>Recognition</td>
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<td>.35*</td>
<td>.22</td>
<td>.34*</td>
<td>.35*</td>
<td>.31*</td>
</tr>
</tbody>
</table>

* p<.01; ** p<.001
subscale with the mean score for employees on the FP residences lower than the mean scores for employees on the NP and the IP residences.

The group means on the last two MSQ subscales listed in Table 5, satisfaction with recognition and with moral values, were in the predicted direction but the differences were too small to be considered substantively different.

The patterns in eight of the eleven MSQ intrinsic satisfaction subscales described above that exhibit substantial differences between the three PDM levels show the employees on the residences with the greatest participation in decision making, the FP residences, to have the highest intrinsic job satisfaction. On two of the remaining three subscales, the satisfaction of employees on the FP residences is higher, along with the satisfaction of employees on the NP residences, than the satisfaction of employees on the IP residences.

The overall pattern of these eleven MSQ subscales, considered in the context of the highly significant MANOVA finding, supports the assertion that the highest level of PDM is associated with the highest intrinsic job satisfaction of residential workers. The assertion that the intrinsic job satisfaction of residential workers on the IP residences is higher than that of employees on the NP residences is not so clearly shown in the patterns of the mean scores for the individual subscales. On four of the
MSQ intrinsic satisfaction subscales the mean scores are essentially the same for employees on the NP and the IP residences, and on two of the subscales the NP mean scores are higher than the IP mean scores.

In consideration of hypothesis one, it is important to note the aspects of intrinsic job satisfaction described by the first five subscales listed in Table 5, which do support the hypothesized pattern of intrinsic job satisfaction being directly related to the level of PDM. Of the 13 subscales of the MSQ Intrinsic Satisfaction Scale, these five pertain to aspects of intrinsic job satisfaction that are arguably the most logically conducive to being affected by working in a participative work environment.

A one-way ANOVA was run to assess differences in a composite score of these five subscales between the three levels of PDM. The group means were 78.86 (SD=14.99) for residential workers on the NP residences, 85.48 (SD=13.06) for the IP residences, and 91.67 (SD=12.25) for the FP residences. As shown in Table 7, the ANOVA obtained a statistically significant difference between group means, \(F(2, 59) = 4.03, p < .02\). Results of the Scheffé procedure indicated that only the difference between the FP residences and the NP residences was statistically significant.

These findings indicate that the residential workers on the FP residences have higher satisfaction than workers on the NP residences. On this measure of the five subscales of
Table 7
One-way ANOVA of Satisfaction Subscales Composite Scores
Between the NP, IP, and the FP Residences

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1492.30</td>
<td>2</td>
<td>4.03</td>
<td>.02</td>
</tr>
<tr>
<td>Within groups</td>
<td>10914.16</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

the MSQ Intrinsic Satisfaction Scale most logically related to PDM the satisfaction of employees on the IP residences is not different from the satisfaction of workers on either the NP residences or the FP residences.

The results obtained from the MANOVA suggest that the residential workers working under the highest level of participation have the highest intrinsic job satisfaction. There is some question concerning a difference in intrinsic job satisfaction between employees on the residences at the NP and the IP levels of PDM. However, the significant MANOVA finding for the 13 MSQ intrinsic satisfaction subscales, the overall pattern of mean scores for those subscales, and the higher satisfaction of workers on the FP residences over workers on the NP residences on the five MSQ subscales most relevant to PDM provide qualified support for hypothesis one; the intrinsic job satisfaction of residential workers is higher in relation to the level of PDM under which they work.
Work performance under different levels of PDM.

The second hypothesis of the present study stated that the more PDM was utilized in residential work groups, the higher would be the work performance of the residential workers on those residences. The results of a one-way ANOVA comparing the supervisors' total work performance ratings of residential workers between the three groups of residences are shown in Table 8. The results showed a statistically significant difference, \( F(2, 59) = 9.29, p < .001 \) between the means of the three groups of residences. The mean scores for the NP, IP and the FP residences were 30.36, 28.72 and 34.33, respectively.

Table 8
One-way ANOVA of Work Performance Ratings of Residential Workers Between the NP, IP, and the FP Residences

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>298.42</td>
<td>2</td>
<td>9.29</td>
<td>.001</td>
</tr>
<tr>
<td>Within groups</td>
<td>947.46</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A Scheffé procedure indicated a statistically significant difference between the mean work performance score for employees in the FP residences and the means for employees on both the IP and the NP residences. There was not a statistically significant difference between the IP and the NP residences.
The method used to obtain the supervisors' ratings of their subordinates' work performance requires caution in the interpretation of the work performance findings. Six different supervisors rated the performance of their respective subordinates. This introduced the possibility of differences in work performance ratings due to raters' biases, or systematic differences in how the different supervisors approached the task of rating their subordinates' work performance.

To examine the possibility of bias in ratings due to raters' tendencies, the pattern of ratings for each of the supervisors were compared by examining the frequency distributions of the individual raters. Figure 2 shows the frequency distributions of the work performance ratings by each of the six supervisors. The possibility of a positive leniency error (Landy, 1985) and/or a rating restriction (McCormick & Ilgen, 1985) were suggested in the frequency distributions of Supervisors B and F. The frequency distribution of Supervisor C may reflect a negative leniency error (Landy, 1985).

Landy (1985) stated that leniency errors occur when raters are unusually harsh (negative leniency) or unusually easy (positive leniency) in their ratings. He also suggested that these rating errors "usually come about because the rater is applying personal standards to the rating scale" (p. 177). McCormick and Ilgen (1985) defined
Figure 2

Frequency Distributions of Work Performance Ratings of Residential Workers by the Supervisors That Made the Ratings in Each Level of PDM.

<table>
<thead>
<tr>
<th>Non-Participation Residences</th>
<th>Informal Participation Residences</th>
<th>Formal Participation Residences</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
<td>**</td>
</tr>
<tr>
<td>39</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>35</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>*</td>
<td>***</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>***</td>
</tr>
<tr>
<td>22</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Supervisor

Note. Scores are total work performance ratings on eight five-point scales made by residence supervisors of the residential workers working on their residence(s) that were involved in the present study.
a rating restriction as "the tendency to use c..ly a restricted range of the rating scale when assigning ratings to individuals" (p. 84).

McCormick and Ilgen added that rating restriction sometimes occurs in combination with a leniency tendency. They cautioned, however, that restricted range may not be the result of a rater's tendencies, but may indicate the actual range of the ratees' performance. This is an important consideration in terms of the performance ratings for the residential workers on the FP residences. There were substantially different work conditions on these residences, due to the use of PDM, that can account for the higher work performance of the residential workers.

The results of analyses comparing supervisors' ratings of residential workers' work performance between the residences in the three levels of PDM provide partial support for hypothesis two. The ANOVA and the Scheffé procedure indicate that the higher ratings of work performance for residential workers on the FP residences are significantly different from the ratings for residential workers on the IP and the NP residences.

Multiple Regression Analyses

Hypotheses three and four concerned assessment of the relative importance of two variables, instrumentalities and self-efficacy, that had been proposed to mediate the relationships between PDM and two outcomes of PDM, job
satisfaction and work performance. Hierarchical multiple regression was used to test the mediating potential of these two variables within the context of the relationships between PDM and the respective outcome variables.

To obtain an initial measure of the associations between the variables used in the present study, Pearson r correlations were computed between the following variables: the three-level classification of PDM, perceived group influence, instrumentalities, self-efficacy, intrinsic job satisfaction, work performance, skill-utilization, and locus of control. Results from these correlations are displayed in Table 9.

Table 9

Pearson r Correlations Between the Main Variables of the Present Research

<table>
<thead>
<tr>
<th>Variables</th>
<th>PDM</th>
<th>PGI</th>
<th>Instr</th>
<th>SE</th>
<th>IJS</th>
<th>WP</th>
<th>SU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Group Influence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instrumentalities</td>
<td>-.07</td>
<td>-.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>.18</td>
<td>.07</td>
<td>.41**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Job Satisfaction</td>
<td>.20</td>
<td>.42**</td>
<td>.17</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work Performance</td>
<td>.29</td>
<td>.32*</td>
<td>.17</td>
<td>.14</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill-Utilization</td>
<td>.15</td>
<td>.29</td>
<td>.19</td>
<td>.08</td>
<td>.61**</td>
<td>.23</td>
<td></td>
</tr>
<tr>
<td>Work Locus of Control</td>
<td>-.19</td>
<td>-.44**</td>
<td>-.07</td>
<td>-.11</td>
<td>-.12</td>
<td>-.09</td>
<td>-.25</td>
</tr>
</tbody>
</table>

Note. PDM=Three-level PDM classification. n=56 for Perceived Group Influence Scale, n=62 for remaining variables.

a Lower Work Locus of Control Scale (WLCS) scores indicate more internal locus of control responses, while higher WLCS scores indicate more external locus of control responses.

* p<.01; ** p<.001
Instrumentalities as a mediating variable.

Hypothesis three stated that performance-outcome instrumentalities mediate the relationship between greater use of PDM on residences and the higher intrinsic job satisfaction of employees working on residences using more PDM. Performance-outcome instrumentalities refer to the probability with which employees expect that effective work performance will be followed by their obtaining a particular work outcome.

For the purposes of hypothesis three, the MSQ Intrinsic Satisfaction Scale score was used as the dependent, or criterion variable in a regression analysis. A regression was first run on the dependent variable with the single independent variable, the three-level PDM classification (PDM). As shown in Table 10, regression of PDM on intrinsic job satisfaction resulted in an $R^2 = .20$, $F(1, 60) = 2.64$, $p = .11$. The $R^2$ for PDM was .04.

The three-level PDM classification did not account for a statistically significant proportion of the variance in the total scores on the MSQ Intrinsic Satisfaction Scale. Consequently, the first criterion to show the instrumentality variable to have potential for mediating the relationship between PDM and intrinsic job satisfaction was not met. Stage two of testing hypothesis three was therefore unnecessary. Hypothesis three was not supported.
Table 10

Regression of the Three-Level PDM Classification on the MSQ Intrinsic Satisfaction Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDM</td>
<td>8.34</td>
<td>.20</td>
<td>.20</td>
<td>.04</td>
</tr>
</tbody>
</table>

Additional analyses were performed to ensure that a mediating influence of employees' instrumentalities was not being obscured because of the contradictory patterns of scores on the 13 subscales of the MSQ Intrinsic Satisfaction Scale. The two stage hierarchical regression strategy was used with the composite score of the five MSQ subscales and with the scores for the individual MSQ subscales Authority and Independence. These additional analyses also failed to provide support for hypothesis three.

Self-efficacy as a mediating variable.

Hypothesis four stated that self-efficacy perceptions mediate the relationship between greater degrees of PDM used on residences and the higher work performance of employees working on residences using more PDM. Self-efficacy refers to the degree to which a person believes that he/she is able to successfully perform a given task.

The results of stage one for testing hypothesis four are presented in Table 11. The regression of the single independent variable, PDM, on the dependent variable, work
performance revealed an $R^2 = .29$, $F(1, 60) = 5.52$, $p = .02$. The $R^2 = .08$ for the PDM variable. This result reveals that the total variance of the three-level PDM classification accounted for a statistically significant proportion of the variance in the residential workers' work performance scores.

Table 11

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta</th>
<th>R</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDM</td>
<td>1.70</td>
<td>.29</td>
<td>.29*</td>
<td>.08</td>
</tr>
</tbody>
</table>

*p < .05

The second stage of testing hypothesis four was to run a hierarchical regression on the dependent variable, work performance, with first the variable self-efficacy, then PDM entered into the regression equation. The results of this regression are presented in Table 12. The first step of the regression, with only the self-efficacy scores entered, showed an $R = .14$, $F(1, 60) = 1.18$, $p = .28$. After the self-efficacy scores and the three-level PDM classification were entered into the regression equation, $R = .30$, $F(2, 59) = 2.98$, $p = .06$. The $R^2 = .09$ for the full regression equation. The $sr^2 = .07$, $F(1, 59) = 4.71$, $p = .03$ for PDM after self-efficacy had been entered into the regression equation.
Table 12

Hierarchical Regression of Self-Efficacy and Three-Level PDM Classification on Work Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta</th>
<th>sr²</th>
<th>R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficcy</td>
<td>5.25</td>
<td>.14</td>
<td></td>
<td>.14</td>
<td>.02</td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficcy</td>
<td>3.35</td>
<td>.09</td>
<td>.07*</td>
<td>.30</td>
<td>.09</td>
</tr>
<tr>
<td>PDM</td>
<td>1.51</td>
<td>.27</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Self-eff=Self-efficacy; PDM=Three-level PDM classification. *p<.05

Considering the results displayed in both Table 11 and Table 12 shows that the total proportion of variance in employees' work performance accounted for by PDM is .08, the total proportion attributable to self-efficacy is .02, and the unique proportion of variance in work performance attributable to PDM is .07. When the proportion of variance in work performance attributable to self-efficacy is partialled out of the total proportion accounted for by PDM, the unique variance attributed to PDM remains significant.

These relative proportions of unique and shared variance do not exhibit the pattern of results required to support the role of self-efficacy as mediating the relationship between PDM and work performance. Hypothesis four is not supported.
Auxiliary Analyses

Additional analyses were performed to assess the impact of the variables, skill utilization and locus of control, on the full outcome relationships that were examined in the present research. These variables were not central to the hypotheses being tested in this study. Previous research, however, had suggested that skill utilization and locus of control might influence the relationships between IDM and the outcome variables that were used in the present study.

Skill-Utilization

The research findings of O'Brien (1984a, 1984b, 1986) suggest a competing hypothesis to the hypotheses explored in the present research concerning positive outcomes of participative decision making. The competing hypothesis is that skill utilization is more important determinant of employees' work-related attitudes than is employees' influence over decisions about the job situation. To assess this position implied by previous research, analyses were conducted to compare the proportion of variance in intrinsic job satisfaction attributable to the skill-utilization variable to the proportion attributable to perceived group influence.

The same analytic strategy that was used to test hypotheses three and four was used to determine the relative proportions of variance in satisfaction attributable to skill-utilization and perceived group influence. Analyses
were run using data from the 56 subjects of the primary research sample who had completed the Perceived Group Influence Scale. First, skill-utilization was entered as the sole independent variable in a regression run on the MSQ Intrinsic Satisfaction Scale scores. As shown in Table 13, this regression resulted in an $R=.65$, $F(1, 54)=39.79$, $p<.0001$, $R^2=.42$.

Table 13
Regression of Perceived Skill-Utilization on Intrinsic Job Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta</th>
<th>$R$</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill-Utilization</td>
<td>9.77</td>
<td>.65</td>
<td>.65***</td>
<td>.42</td>
</tr>
</tbody>
</table>

***$p<.001$

Table 14 displays the results of a hierarchical regression run on intrinsic job satisfaction with first perceived group influence entered, then skill-utilization entered. At step one of the regression, with only perceived group influence entered into the equation, the $R=.42$, $F(1, 54)=11.38$, $p<.01$, $R^2=.17$. At step two, with both group influence and skill-utilization entered into the regression equation, $R=.69$, $F(2, 53)=24.64$, $p<.0001$. The $R^2=.48$ for the regression after both independent variables had been entered. The $s_{R^2}^2=.31$, $F(1, 53)=31.47$ $p<.0001$, representing the unique variance of skill-utilization with the variance
attributable to group influence partialled out.

To determine the proportion of variance in intrinsic job satisfaction that was uniquely attributable to perceived group influence, a second hierarchical regression was run with skill-utilization entered first and group influence entered second. The $r^2 = .06$, $F(1,53) = 5.90$, $p < .02$ for group influence with skill-utilization partialled out.

Table 14

Hierarchical Regression of Perceived Influence and Perceived Skill-Utilization on Intrinsic Job Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Beta</th>
<th>$r^2$</th>
<th>R</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group influence</td>
<td>1.91</td>
<td>.42</td>
<td>.42**</td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group influence</td>
<td>1.15</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill-utilization</td>
<td>8.71</td>
<td>.58</td>
<td>.31***</td>
<td>.69***</td>
<td>.48</td>
</tr>
</tbody>
</table>

**$p < .01$  
***$p < .001$

$R^2$ is additive in hierarchical multiple regression (Tabachnick & Fidell, 1989). Consequently, since the total variance for intrinsic satisfaction was $R^2 = .48$ with both group influence and skill-utilization entered into the regression equation, and the proportions of variance uniquely attributable to these two variables were .06 and .31, respectively, the proportion of variance shared by group influence and skill-utilization was $R^2 = .11$. 
The results described above indicate that for the sample examined in the present research skill-utilization is more strongly associated with intrinsic job satisfaction than is perceived group influence. The proportions of the variance in intrinsic job satisfaction that are uniquely attributable to perceived influence and skill-utilization are .06 and .31, respectively. The proportion of variance in intrinsic satisfaction shared by group influence and skill-utilization is .11. These findings provide support for the position that skill-utilization is more strongly related to employees' job satisfaction than is perceived group influence.

Locus of control.

The locus of control of employees has been found to be related to a number of variables that are commonly studied in organizational settings (Spector, 1988). In terms of variables used in the present study, locus of control has been shown to be related to job satisfaction (O'Brien, 1984b), perceived autonomy (Spector, 1988), participatory management, expectancies, and instrumentalities (Mitchell, Smyser, & Weed, 1975).

The previous research findings with the strongest implications for the present research concern the relationship between locus of control and participation in decision making. Mitchell, Smyser and Weed (1975) presented evidence that employees with an internal locus of control
were more satisfied with a participatory management style, while employees with an external locus of control were more satisfied with a directive management style.

To determine if locus of control had an interactive effect, as reported by Smyser et al. (1975), a 2x2 ANOVA was run on the MSQ Intrinsic Satisfaction Scale scores. The two independent variables were locus of control (intrinsic vs. extrinsic) and perceived participation in decision making (high vs. low).

The two levels of locus of control were developed by classifying subjects with scores in the top and bottom thirds of the distribution of the Work Locus of Control Scale scores as intrinsically and extrinsically controlled, respectively. Two levels of perceived PDM (high and low participation) were determined in the same way using the Perceived Group Influence Scale scores. Of the 56 subjects who had completed the Perceived Group Influence Scale, 42 remained after the intrinsic/extrinsic locus of control classification. The perceived influence classification further reduced the sample size for analysis to 28 subjects.

The results of the 2x2 ANOVA are presented in Table 15. As shown in Table 15, no statistically significant effects were found for the work locus of control variable. Consequently, in the present research the locus of control of residential workers does not have the interactive effect with PDM that had been found in previous research.
Table 15

2x2 ANOVA of Intrinsic Satisfaction Scores Between Internal/External Workers With High/Low Perceived Participation in Decision Making

<table>
<thead>
<tr>
<th>Source of variance</th>
<th>SS</th>
<th>df</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus of control</td>
<td>1.63</td>
<td>1</td>
<td>.0</td>
<td>.96</td>
</tr>
<tr>
<td>Perceived PDM</td>
<td>1642.36</td>
<td>1</td>
<td>2.66</td>
<td>.12</td>
</tr>
<tr>
<td>Locus of control x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived PDM</td>
<td>472.10</td>
<td>1</td>
<td>.66</td>
<td>.42</td>
</tr>
</tbody>
</table>

Note. n=28
Discussion

The findings of the present research provide qualified support for positive relationships between PDM and both of the outcomes of participation examined, employees' job satisfaction and their work performance. The findings do not support the position that performance-outcome instrumentalities mediate the relationship between PDM and job satisfaction. Neither is support provided for the mediating role of self-efficacy in the relationship between PDM and work performance.

The present research offers some interesting findings regarding employee participation that are not consequences of testing the hypotheses of this study. The difficulties encountered in classifying the work groups into levels of subordinate participation in decision making reveal some of the complexities of investigating employee participation. At the individual level of analysis, a contextual boundary to the potential of participation may be suggested by the relation between locus of control and perceived group influence. Additionally, the associations between perceived skill-utilization, perceived group influence and intrinsic job satisfaction suggest a relationship that may contribute to understanding the processes of employee participation. These supplementary findings will be included in the following discussion of the research findings.
Summary of Research Findings

The hypotheses of the present research concern the relationships between participative decision making and two outcomes of participation, job satisfaction and work performance. Both the associations between PDM and the two outcome variables, and the operation of two variables (instrumentalities and self-efficacy) that were proposed to mediate the PDM-outcome relationships were examined.

PDM and Job Satisfaction

The results of this research are supportive of previous research that has shown a positive relationship between PDM and employees' job satisfactions. Previous research has often investigated differences in general job satisfaction between groups characterized as participative and non-participative, or as having participative and directive management styles. The classification of PDM into three levels in the present study allows for a more discriminating assessment of the relationship between PDM and satisfaction. The fact that the findings of the present research are based on a measure of satisfaction that includes subscales measuring 13 aspects of employees' intrinsic job satisfaction also provides more specific information about the relationship between PDM and job satisfaction.

The present research is based on an assumption that intrinsic job satisfaction is more relevant to differences in PDM than extrinsic job satisfaction. This assumption is
supported by the analyses of data from the 1986-1987 participation intervention. The intrinsic job satisfaction of residential workers on the FP residences is higher than the intrinsic satisfaction of workers on those residences before the intervention. A difference is not evident for the extrinsic satisfaction of these workers.

The results of analyses of scores on the 13 subscales of the MSQ Intrinsic Satisfaction Scale show a statistically significant difference in the pattern of scores between the three levels of participation used in this study. Profiles of scores on subsets of the 13 subscales cannot be interpreted as representing significant differences between the three levels of PDM. Examination of these profiles is nevertheless informative of the nature of the differences in the pattern of scores between the three PDM classifications.

The clearest indication of a positive relationship between level of PDM and intrinsic job satisfaction is evident in the composite score of the five MSQ intrinsic satisfaction subscales measuring satisfaction with independence, authority, responsibility, variety, and with creativity. Mean scores on these subscales suggest a direct positive relationship between level of PDM and employees' job satisfaction. Residential workers' satisfactions with these aspects of their work show a significant relationship with the level of PDM in the decision making procedures used on the NP and the FP residences.
Participating in making work-related decisions would be expected to influence the characteristics of the residential workers' job that are described by these five intrinsic satisfaction subscales to a greater extent than is the case for the other MSQ intrinsic satisfaction subscales. Being involved in making decisions allows residential workers to assume more authority, independence and responsibility in their jobs if they so desire. The decision making function itself adds variety to the job, as well as any other functions the workers might decide to perform on the residences.

The increase in residential workers' satisfaction with the creativity offered by their jobs on the FP residences appears to be a function of the workers deciding to perform duties they were not doing before the participation intervention. Examples include greater attention to the fashion of the residents' appearance, and elaborate seasonal decorations of the residences.

The remaining eight subscales of the MSQ Intrinsic Satisfaction Scale do not suggest a direct positive relationship between PDM and intrinsic satisfaction. Of these, two subscales (satisfaction with moral values and with recognition) show essentially the same mean scores across the three levels of PDM. The most striking feature of the relative scores between the three levels of PDM on the remaining six subscales is the high satisfaction of the
residential workers on the formal participation residences.

The overall pattern of subscale scores across the three levels of PDM indicates that a deliberate organizational intervention to develop formally structured participative decision making procedures in work groups is related to high intrinsic job satisfaction of residential workers. The overall pattern of scores also suggests that employees' participation in decision making is related to their appraisal of some aspects of the job more than it is to other aspects.

The overall pattern of MSQ intrinsic satisfaction subscale scores in the present study also indicates that the association between informal employee participation and intrinsic satisfaction is different from, and not as strong as, the association between formal participation and intrinsic job satisfaction. This finding must be considered in terms of the particular type and extent of informal participation operating in the research setting of the present study. Cotton et al. (1988) reported that over 80% of participation studies that had participation operationalized as informal participation showed significant job satisfaction and work performance findings. This suggests that the decision making procedures on the residences classified as having informal participation in the present study do not provide the extent of participation that is possible under informal participation arrangements.
It is difficult to draw any firm conclusions from the patterns in scores on subsets of the 13 subscales of the MSQ Intrinsic Satisfaction Scale. The predominantly high scores for residential workers on the formal participation residences, and the direct positive relationship evident on the five subscales most logically related to PDM, however, provide sufficient evidence to support a positive relationship between PDM and intrinsic job satisfaction.

The above findings are not subject to the percept-percept concerns pointed out by Wagner and Gooding (1987a, 1987b). The methodology of the present research utilized data from different instruments at different times to measure the levels of participation and the employees' work-related attitudes.

**PDM and Work Performance**

In terms of work performance, the residential workers on the FP residences have the highest work performance ratings. There is not a difference in work performance ratings between the employees on the informal participation and the non-participation residences.

These findings raise two issues. The first issue is whether the higher work performance ratings for the workers on the FP residences are valid or are, in fact, artifacts of raters' biases. Second, assuming that the work performance findings are valid, an implication is that the properties of participative decision making practices have a definite
influence on the relationship between PDM and employees' work performance.

The validity of the work performance findings of the present research is questionable. The frequency distributions of ratings for three of the six raters provide evidence that encourage caution when interpreting the work performance findings. In terms of a difference between the FP residences and the other two groups of residences, however, the possible positive and negative rating tendencies in the NP residence and the IP residence, respectively, can be considered to balance each other out.

The higher ratings for residential workers on the FP residences were anticipated due to the formal participative working conditions on these two residences. Consequently, although the subjectivity of performance ratings encourage caution in interpretation, the overall findings support the position that residential workers on the FP residences have higher work performance than workers on the other six residences.

The methodology used in the present study does not offer corroborative evidence to substantiate the work performance findings. This is partly due to the nature of the work performed by residential workers. Effective care of developmentally delayed residents does not result in objective work outcomes that are reliably measured. Supervisors' ratings were considered the best method of
measurement available under the circumstances. Considerable efforts to obtain secondary measures of work performance did not identify any potential forms of valid measurement. I was advised by facility personnel at the supervisory, department head, and administrative levels of the organization that indirect measures of performance that were considered would not provide valid data.

The position that the work performance findings of this research represent differential effects of diverse forms of participation is supported by the perceived group influence findings of the present study. The residential workers' perceived group influence between the three PDM levels show the same pattern as the workers' performance ratings; employees on the FP residences have higher perceived influence than employees on either the IP or the NP residences. This suggests that the type or amount of participation exercised by residential workers on the IP residences are not associated with them experiencing more genuine influence than employees on the NP residences. It seems plausible that if the workers on the IP residences do not experience greater genuine influence in making decisions, then informal participation in decision making would not be expected to be related with more effective work performance.

The higher work performance ratings of the workers on the FP residences, on the other hand, are accompanied by
higher experienced influence in making decisions. This suggests that only the formal participative decision making utilized on the FP residences in the present study provides employees with a sense of genuine participation that may be necessary for workers to exhibit higher work performance.

A cautious interpretation of the work performance findings of the present study supports hypothesis four. When the possibility of raters' biases is carefully considered and the role of employees' perceived influence is accounted for, the strength of the performance findings is enhanced. The findings support the position that residential workers working under formal participative decision making procedures have higher work performance than workers with low employee participation.

**Employees' Instrumentalities as a Mediating Variable**

The main thesis of the present research is that two intervening variables, employees' instrumentalities and their self-efficacy beliefs, mediate the relationships between PDM and the variables, job satisfaction and work performance, respectively. The mediating potential is not supported in either case. In fact for hypothesis three, the findings do not support a relationship between the MSQ Intrinsic Satisfaction Scale and PDM. This makes the question of a mediating variable irrelevant.

The reason the MSQ Intrinsic Satisfaction Scale is not related to PDM is evident in the above discussion of the
MANOVA findings for hypothesis one. A significant relationship between PDM and the overall pattern of scores on the 13 subscales results from a MANOVA analysis. However, several patterns of mean scores on subsets of the 13 subscales of the MSQ Intrinsic Satisfaction Scale are in contradictory directions (see Table 5). The score on the MSQ Intrinsic Satisfaction Scale combines these opposing values and thereby reduces the overall differences between the three levels of PDM on the total intrinsic satisfaction score. Consequently, the significant difference in the pattern of subscale scores is not evident for the total scale scores.

Self-efficacy as a Mediating Variable

The pattern of results required to support a mediating role for the variable self-efficacy in the relationship between PDM and work performance is not evident in the present study. A statistically significant relationship between the three-level classification of PDM and employees' work performance is shown in the initial regression of PDM on work performance. When the variance in work performance attributable to employees' self-efficacies is partialled from the total variance attributable to PDM, the unique variance accounted for by PDM remains statistically significant. These results suggest self-efficacy does not mediate the relationship between participation and work performance.
A notable feature of the results from analyses testing the mediating potential of self-efficacy is the small amount of variance evident in the self-efficacy measurements. The distribution of residential workers' self-efficacy responses reveals that scores are restricted in the upper range of the distribution, indicating high self-efficacy for performing the tasks involved in performing their jobs. This may reflect that employees participating in the present research came to their jobs with strong beliefs of their abilities to effectively perform the required work tasks. The limited amount of variance accounted for by self-efficacy may be partly due to the fact that the instrument utilized did not discriminate between this group of employees who all had relatively high self-efficacy beliefs.

The likelihood of employees believing they could effectively perform the duties of their jobs had been anticipated in the construction of the Self-efficacy Scale. This was the reason for including a fourth level of performance, exceptionally well, as an additional anchor point for the response scale on the measure. Locke et al. (1984) recommended three anchor points, representing low, moderate and high performance of the task, for self-efficacy items measuring task performance in laboratory research. The results of the present research suggest that a different scale format may be needed to discriminate the relatively high self-efficacy beliefs of employees' concerning the
performance of their job duties in field research situations.

**Supplementary Findings**

The present research provides some findings that were not directly associated with the hypotheses being tested. These findings resulted from the procedures used to classify work groups into different levels of participation in decision making, and from the deliberate examination of two variables that were supplemental to the main focus of the present research.

**Classification of PDM.**

The first finding arising from the PDM classification of residences is the fact that more than one distinct level of participation, besides the formal participation level, is evident in the organization that served as the research setting. The formal participation residences were expected to be operating under more participative decision making conditions because of the deliberate participation intervention that had occurred two years prior to the present study. At the time the present research took place, however, there had not been a deliberate attempt to establish informal participative decision making in the facility.

Information I gained while conducting the present research leads me to believe that the more participative decision making procedures on the informal participation
residences are largely due to the efforts of the supervisors on those residences. The positive effects of the 1986-1987 participation demonstration project had been reported to the supervisory and the administrative levels of the facility in the year following the official conclusion of the project. In addition, while I was performing the present research there was information disseminated from the provincial ministry which governs the facility in question that announced a plan to develop a participative human relations approach within the ministry.

These sources of positive information regarding movement toward participative management styles are two examples of forces acting on the supervisors in the research setting to encourage informal participation. The facility as a whole, however, is a bureaucratically structured facility operating within a bureaucratic political system. The normative social relations within the facility seem to be overwhelmingly influenced by the bureaucratic organizational structure. This information about the contextual boundaries of participation in the research setting helps to understand both the attempts by some supervisors to manage participatively, and the limited effects these attempts appear to be having on subordinates experiencing more genuine influence.

A second aspect of the PDM classification that exhibits an interesting finding is the limited relationship between
informal participation and residential workers' perceived influence. Two of the measures used to classify residential work groups according to the level of employee participation in the decision making that routinely occurs on the residences reveal cont-adictory findings. The discrepancy is between the amount of input provided by the decision making procedures the residential workers report, and the amount of influence these employees perceive.

The ratings of residential workers' responses to interview questions show three groups of residences with distinct levels of employee input into decisions made on the residences. Results from analyses of the perceived group influence data, however, reveal that only the residential workers in the formal participation residences perceive that the members of their work groups have more influence in the decisions made on the residences.

These findings represent an incongruence between the structure of participative decision making procedures and employees' perceptions of genuinely participating in making decisions. The employees on the informal participation residences report decision making procedures that are distinctly more participative than the procedures used on the non-participation residences. The greater involvement in making decisions that employees on the informal participation residences report, however, is not accompanied by greater perceived influence in making decisions on these
residences.

Locus of control and PDM.

The results of the analysis examining the variable, locus of control do not show the interactive effect between locus of control and PDM on employees' job satisfaction. This finding cannot be considered evidence that locus of control does not interact with PDM in influencing employees' job satisfaction. The classification of subjects in the present sample with Work Locus of Control Scale scores representing internals and externals does not supply an adequate sample size to be provide valid statistical results.

A separate finding regarding locus of control in the present study warrants attention. The correlation between scores on the Work Locus of Control Scale and residential workers' perceived group influence displays a statistically significant negative association between these two variables. This negative correlation indicates that the more internally controlled residential workers are, the more likely they are to perceive group influence in their residential work group. Spector (1988) reported that the research conducted for the development of the Work Locus of Control Scale showed the instrument correlated significantly with perceived influence at work.

The relationship between locus of control and perceived influence suggests that the locus of control of participants
is a contextual boundary variable, at the individual level of analysis, to the potential of a participative decision making arrangement. That is, internals may be more likely to perceive a decision making procedure as allowing them more influence, while externals may exaggerate the constraints of a decision making procedure. In this way the individual control predispositions of internals might enhance the potential for a participative arrangement, while the perceptions of externals would limit its effectiveness.

Another explanation of the correlation between locus of control and perceived influence is that the correlation represents something that the two variables have in common. From a psychometric perspective, it might be argued that the significant correlation is due to an overlap in the constructs the locus of control scale and the perceived influence scale are measuring. In other words, an individual's perception of influence in a particular situation would likely reflect to some degree that person's general control orientation (O'Brien, 1984b). Further research is required to provide a clearer understanding of the relationship between these two variables.

Skill-Utilization and PDM.

The most striking supplemental finding of the present research is the strong association between residential workers' perceived skill-utilization and their intrinsic job satisfaction. The results show that the intrinsic job
satisfaction of residential workers is more closely related with skill-utilization than it is with their perceived group influence. This finding supports the assertion of O'Brien (1984a) that the actual content of a person's job may be more influential in determining employees' work-related attitudes than is the influence they have in making work-related decisions.

The results of the present study show that the unique proportions of variance in intrinsic job satisfaction accounted for by both skill-utilization and perceived influence reach a level of statistical significance. In addition, a substantial proportion of the total variance in intrinsic job satisfaction attributable to skill-utilization and perceived influence is variance that is shared between these two variables. This finding suggests that both perceived influence and skill-utilization have substantial associations with job satisfaction and that these two variables may have a complementary relationship with intrinsic job satisfaction.

Neither perceived group influence or perceived skill-utilization show a direct relationship with the classification of decision making procedures in the present research. In that all the subjects in the present study perform the same job, and that their perceptions of skill-utilization are not related to level of participation in decision making, it appears that the variability in
perceived skill-utilization is due to within group variance. Consequently, the present research does not have a methodological framework that would allow interpretation of this finding. The strong associations between perceived influence, perceived skill-utilization, and intrinsic job satisfaction suggest, however, that these variables may be important variables to consider in future research concerning the processes of employee participation.

Limitations of the Present Study

Several characteristics of the present study limit the generalizability of the findings and the confidence with which the findings can be interpreted. The limiting factors concern characteristics of the sample, the research design and of some of the measurement instruments employed.

The sample of the present study is relatively small and is limited to subjects with one type of job in a single organization. The size of the sample was constrained by the fact that the research was conducted in a field setting. A limited number of employees were available for the study and the voluntary basis of participation in the research further reduced the number of subjects who participated in the study.

Although the homogeneity of the subjects' job increases the internal validity in terms of comparability between groups within the study, it limits the generalizability of the findings. Considering the particular nature of the work
experience involved with providing direct care for developmentally delayed adults in a residential setting, the findings of the present research can not be generalized beyond this type of work situation. It should be noted, however, that very few employee participation studies have been conducted in mental health facilities in the past. Consequently, the findings of the present study are applicable to an area of work that has been largely neglected by previous research.

The contextual boundaries of the potential of participation (Dachler & Wilpert, 1978) present in the research setting of the present study further limit the generalizability of the findings of this research. Foremost among the contextual boundaries of this research setting are the social, political and economic conditions of Ontario, the organizational characteristics of government operated facilities, and the particular organizational dynamics of the residential facility that served as the research setting for this study.

A limitation of the design of the present research is that it does not allow the inference of causality. The research design approaches a quasi-experimental design because of the presence of pre-intervention data for some of the residential workers on the formal participation residences. These data increase the confidence with which the higher job satisfaction of the employees on these two
residences can be considered to have been influenced by participative working conditions. The nature of the findings, however, is basically comparative between three groups of employees who have been classified as working under different levels of participatory working arrangements. Consequently, the research design of the present study does not allow for causality to be implied from the findings.

A characteristic of the present research which is informative for subsequent field research in this area concerns the measurement instruments used in this study. Due to the situation-specific nature of the variables, self-efficacy and instrumentalities, the instruments used to measure these variables were constructed for the present research. The item format described by Locke et al. (1984) was used because it adhered to the conceptual characteristics of the variable, self-efficacy.

This item format has not been reported as having been used in an organizational field setting. The findings of the present study indicate that the item format and the range of the anchor points recommended by Locke et al. (1984) resulted in a restricted range of responses on the high end of the score distribution. This suggests that employees have a high sense of self-efficacy for performing the duties of their jobs. An alternate item format (i.e., Barling & Beattie, 1983) may be more appropriate for
measuring self-efficacy of employees for performing the duties involved in carrying out their work.

Finally, the validity of the supervisors' ratings of the work performance of their subordinates is not certain. The fact that ratings were obtained from six supervisors for different groups of residential workers does not allow for the extent of rating biases to be evaluated. The research conditions at the field setting of the present study were not conducive to obtaining corroborative work performance data. It is suggested that efforts be made in future research into employee participation to obtain multiple measures of employees' work performance in order to substantiate research findings concerning the relationship between employee participation and work performance.

Theoretical Issues

The findings of the present research reflect the ambiguities and incongruities evident in theoretical approaches to employee participation. In terms of the controversy between Sashkin, and Locke and his associates, the findings concerning the relationships between PDM and the two outcomes, job satisfaction and work performance do not clearly support one side of the controversy more than the other. The overall findings of the present research, however, will be discussed as generally supporting the theoretical position of Sashkin. Particular aspects of the findings of this study are also conducive to understanding
employee participation within the context of Dachler and Wilpert's (1978) convergent theoretical framework.

**The Locke Versus Sashkin Controversy**

In the context of the controversy between Sashkin, and Locke and his colleagues about the effectiveness of participation, the present research does not offer clear support for either side of the controversy. The participation-outcome findings of the present study are well described by the conclusions of Locke and Schweiger's (1979) review of the participation literature; the findings provide "equivocal support for the thesis that PDM necessarily leads to increased satisfaction and productivity, although the evidence for the former outcome is stronger than the evidence for the latter" (p. 325). The overall findings of the present research, however, support the view of Sashkin (1984, 1986) that employee participation is a complex management approach that requires proper implementation to be successful.

The results of the present research provide qualified support for positive relationships between employee participation and both job satisfaction and work performance. In terms of findings regarding job satisfaction, a qualification is necessary because participation shows various degrees of association with the different aspects of intrinsic job satisfaction measured by the Minnesota Satisfaction Questionnaire. The work
performance findings are qualified by the uncertainty of whether raters' tendencies may have biased the work performance ratings of residential workers between the different levels of PDM in the present study.

For both the job satisfaction and the work performance findings, clear differences are apparent only between the employees on the formal participation residences and those on the other residences. Clear differences are not evident between the job satisfaction and work performance of residential workers on the informal participation residences and those on the non-participation residences.

These findings reflect the equivocal findings of past research into the relationships between PDM and its outcomes. The micro level of analysis utilized in the present research suggests reasons for the equivocal findings of past participation research. The present study focused on examining the processes of employee participation within different classifications of decision making procedures being used in an organization. This micro level examination reveals that decision making procedures which are relatively distinct in terms of the amount of subordinate influence in making decisions do not result in equally distinct differences in the perceived influence, intrinsic job satisfaction, or work performance of employees in the three levels.

The incongruity evident in the findings of the present
research has implications for how employee participation is conceptualized and empirically investigated. It appears from the present research that both the properties of decision making procedures and the influence perceptions of employees participating in making decisions are important aspects of conceptualizing and operationalizing employee participation. The present research suggests that perceived influence can not be assumed from the presence of particular properties of participation.

Although the findings of this study are qualified, they do support the position of participation being related to the job satisfaction and work performance of employees. In this respect the present research supports the view of Sashkin (1984, 1986) that employee participation has positive effects on employees' job satisfaction and work performance.

Sashkin's position is also supported by the fact that the highest levels on the outcome variables in the present study are evident for employees on the residences with formal participative decision making procedures. Sashkin (1984) maintained that participative management is a complex management approach that effectively improves job satisfaction and work performance if it is properly implemented.

In the present study the highest job satisfactions and work performance are evident for employees on the two
residences that had experienced a comprehensive participation intervention. This participation intervention involved an intensive two-week training program in participative methods, and organizational changes to support the operation of employee participation. The relatively higher job satisfactions and work performance of employees on the residences that had experienced this comprehensive intervention, as compared to workers on the other residences, support Sashkin's position that participative management is a complex management approach.

**The Dachler and Wilpert Conceptual Model**

The conceptual model of Dachler and Wilpert (1978) provides a context for putting the findings of the present research in perspective. Apparent ambiguities and incongruities in the findings of the present study can be seen as manifestations of the classification variables in the Dachler and Wilpert model. Three of Dachler and Wilpert's four classification variables will be used to describe the characteristics of the levels of PDM in the present study and to discuss the implications of the findings.

**Underlying ideological orientations.**

In terms of the classification variable, ideological orientations underlying participation, the human growth and development approach underlies the participative arrangements on the formal participation residences. The
attempts to involve subordinates in decision making on the other residential work groups are not well defined. Consequently, these work groups do not exhibit clear conformance to a particular ideological orientation. An implication of this aspect of the present research is that participative decision making that is clearly based on an ideological orientation is more strongly associated with higher job satisfaction and work performance than informal PDM that is not based on a particular orientation.

In addition to the human growth and development orientation underlying the participation intervention in the present study, it also underlies the present research. The way participation was conceptualized in this study, the questions formulated into hypotheses, and the methodology used were based on assumptions regarding the positive effects of participation on employees and on organizations. It must be assumed that this ideological orientation has influenced the findings of the present study.

**Properties of participation.**

The three levels of participation that were classified from the decision making procedures used on the eight residential work groups in the present study represent three configurations of the properties of participation variables in the Dachler and Wilpert model. The properties of participation evident on the FP residences provide direct participation in work-related decisions to all members of
the work group by means of formally established participatory procedures. Residences classified in the present study as IP residences have occasional impromptu meetings to involve some of the residence staff in decisions that the supervisors consider appropriate. Residential workers on the NP residences report that they are not genuinely involved in providing input into decisions on their residences.

As indicated above, the residences classified as informal participation residences in the present research should not be considered representative of participative arrangements with informal properties of participation. This point, however, emphasizes the imprecision of empirical and conceptual distinctions between different properties of participation that are available. The properties of participation classification variable in the Dachler and Wilpert conceptual model makes explicit the variety of forms that participatory mechanisms might exhibit. Further use of this classification variable in participation research would improve the shared understandings of theorists, researchers and practitioners regarding the many possible forms of employee participation.

**Contextual boundaries of participation.**

The contextual boundaries operating in the research setting of the present study appear to have a prominent influence on the degree of participation evident on
residences other than those involved in the 1986 participation demonstration project. As mentioned above, contextual forces can be seen to be both encouraging and constraining the operation of participative work arrangements.

The success of the 1986 participation project, and some official notifications of changes in human resources policy from the ministry support the development of participative management in the research setting. The bureaucratic structure of the organization and of its socio-political environment, however, militate against participative social arrangements. An important advantage of the systemic nature of the Dachler and Wilpert (1978) model is that it encourages the integration of macro and micro levels of analysis in the consideration of the participation phenomenon. This tendency is most evident in the present study in terms of the different levels of the contextual boundaries of participation in the research setting.

The apparent influence of the contextual boundaries in the present research emphasizes the importance of this variable in the theoretical development of the employee participation construct. Evidence from the present research supports the assertion made by Sashkin (1976, 1984, 1986) and by Dachler and Wilpert (1978) that the contextual boundaries of participation influence the functional effectiveness of participatory social arrangements.
Self-Efficacy and Instrumentalities as Mediators of PDM

The present study does not provide any evidence to support the intervening processes of participation that this research sought to clarify. The fact that evidence of mediating processes is not forthcoming from the present study does not diminish the importance of this question in the context of the Dachler and Wilpert model. The Dachler and Wilpert model conceptualizes participation as a dynamic social process. An understanding of the processes of participation is necessary for the potential of this model to be realized.

Further research efforts into the processes of participation are necessary to develop theoretical positions that explain participation as a dynamic social phenomenon. Such theoretical developments would allow our understanding of participation to overcome the fragmented conceptualizations and research efforts that have characterized the participation literature. The clarification of the processes involved in participative social arrangements would contribute to participation becoming a concept that is central to our understanding of organizing. The findings of the present study concerning the associations between perceived group influence, skill-utilization and intrinsic job satisfaction suggest one possibility for further research in this area.

In general, the present research has implications for
the theoretical development of employee participation as a central concept of organizing. Dachler and Wilpert (1978) suggested that,

if one accepts the notion that different participation potentials are embedded in the total social fabric of which participatory social arrangements are a part, it becomes possible to think of participation within one conceptual framework... As long as we make explicit the value and goal framework out of which particular questions about participation emerged, and as long as we formally integrate these ideological positions, and the stipulations and contradictions they imply, into the overall conception of participation as a social process, then a set of general principles... may make possible the study of participation as a general phenomenon (p. 31).

The present research has acknowledged the underlying ideologies, contextual boundaries and properties of participation of the participatory arrangements under study. Within this framework the differences and similarities in outcomes between the three forms of decision making procedures examined can be conceptualized as differential effects of three composites of variables that define the participation construct.

The fundamental contribution that the present research provides the theoretical development of the participation
construct is that this study has examined participation as a dynamic, multi-faceted construct. By investigating employee participation within the conceptual framework provided by Dachler and Wilpert, the complexities and incongruities are seen as essential attributes of a complex, socially constructed phenomenon. The implicit evidence encountered in conducting this research and the explicit findings of this study suggest that the capability for understanding complex interrelationships that is offered by a systemic theoretical approach is required to attain a more complete understanding of the employee participation phenomenon.

Practical Implications

The present research has several practical implications for implementing employee participation. One implication is that the reported decision making procedures utilized in a work group can not be used to determine how much employees feel they have genuine influence in making decisions. The present research describes a situation in which decision making procedures that reportedly provide subordinates more participation in making decisions do not result in those employees experiencing greater influence.

A related implication is that the efforts of a supervisor to involve subordinates in decision making may not be sufficient to accomplish genuine experienced influence on the part of the employees. The opportunity for employees to occasionally express their opinions on some
issues does not change the established power and influence relationships between supervisors and subordinates in work groups. Unless a supervisor invokes a participative procedure to explicitly modify the distribution of control, or otherwise accomplishes a change to established norms for influence in the work group, the influence perceived by subordinates is not likely to increase.

On the other hand, the findings of the present research indicate that employees' job satisfactions and quality of worklife can be improved by a comprehensive participation intervention. The intervention involved both subordinates and supervisors in two weeks of training designed specifically for this work situation, and incorporated structural changes to the decision making processes in the two work groups. In terms of job satisfaction, the results show that the participation intervention has had the greatest impact on the intrinsic job satisfaction of residential workers.

In addition to a participation intervention improving employees' work-related attitudes, the present study shows that these improvements can be maintained for years after the intervention. Even with changes to the supervisors and to the group membership of the work groups, this study records positive changes in work-related attitudes two years after the official conclusion of the year-long participation demonstration project. It is worth noting that the two
formal participation residences were operating during this time in the context of a bureaucratic organization.

Finally, a practical implication of the present study derives from the finding of a strong association between employees' perceived skill-utilization and their intrinsic job satisfaction. Whether within the context of implementing employee participation or not, this finding suggests that developing ways to allow employees to apply more of their capabilities in the performance of their jobs is an important consideration in the world of work.

**Suggestions for Future Research**

The present research has used the Dachler and Wilpert (1978) conceptual model of participation as a framework for a micro level investigation of the processes of employee participation in decision making. Since this is the first known time such an approach has been undertaken, the present study represents a starting point for future research into the processes of employee participation. Several aspects of the present research suggest points to consider in future research of employee participation.

First, the Dachler and Wilpert conceptual model provides a very useful framework for participation research. The scope of the model allows for research of different conceptions and operationalizations of employee participation to be seen as investigations of particular aspects of the participation phenomenon. In this manner the
Dachler and Wilpert model provides a conceptual context for comparing different perspectives and different implementations of participation. Consequently, use of the Dachler and Wilpert conceptual model as a theoretical framework for future research concerning employee participation would allow for the integration of research findings from apparently diverse studies.

The comparative design of the present study offers a means of examining and obtaining a fuller understanding of the many possible forms of participative social arrangements. The present study has compared three forms of decision making procedures employed by workers with one type of job in a single organizational context. Future comparative research might examine participative arrangements with assorted properties of participation that are emanating from different underlying ideologies within various contextual boundaries. Within the Dachler and Wilpert conceptual model, the findings of such research would offer important insights into the fundamental dimensions of the participation construct.

Further micro level research into the processes of participation is also warranted. The present research has not provided positive evidence regarding the intervening processes between participation and the outcomes of participation, job satisfaction and work performance. This should not deter efforts to investigate the processes of
employee participation. Investigations of the intrapersonal and interpersonal processes that are integral to employee participation hold the promise of a fuller understanding of the essential nature of the micro level of participative social arrangements.

With respect to future research using the self-efficacy concept in field settings, efforts are required to develop a measurement format for measuring employees' relatively high self-efficacy beliefs for performing their work tasks. Modifications to the Locke et al. (1984) item construction strategy used in the present study may produce a format that discriminates within the high range of employees' self-efficacy beliefs about the work they perform. The Likert-style format of Barling and Beattie (1983) offers an alternative approach.

Another methodological suggestion derives from the findings of the present research concerning the outcome of participation, job satisfaction. Even though the measure of job satisfaction used in the present study focuses on the intrinsic job satisfactions of employees, variations are evident in the mean scores of the various subscales of the MSQ Intrinsic Satisfaction Scale. This suggests that participation may influence employees' work-related attitudes with considerable specificity. Greater precision in conceptualizing and measuring the effects of employee participation may result in a greater appreciation of the
particular aspects of employees' attitudes that are affected by participating in decision making.

Finally, it is worth noting the advice of Dachler and Wilpert (1978) for future research into participation to employ a greater emphasis on holistic research approaches. The social phenomenon, employee participation, entails complexities that might not be discernible with traditional empirical methods. Future research that complements analytic research methods with holistic methods may serve to approach the level of empirical capability necessary to investigate the complexities reflected in the Dachler and Wilpert conceptualization of employee participation.

Conclusion

Over 40 years of research into the relationships between employees' participation in making decisions and the outcomes of participation, job satisfaction and work performance, has provided extensive but equivocal evidence regarding the effectiveness of participation. Writers holding different ideological viewpoints have interpreted the participation literature as indicating both negligible (Locke & Schweiger, 1979), and convincing support (Sashkin, 1984, 1986) for positive relationships between participation and the outcomes of participation.

The present study sought to clarify the participation effectiveness controversy by providing evidence regarding how the processes of employees participating in making
decisions might account for changes in employees' job satisfaction and work performance. As well as asking whether different participative arrangements were associated with higher satisfaction and performance, the present study also asked how PDM might affect these outcome variables.

The present investigation into the processes of employee participation does not offer conclusive evidence to clarify the participation effectiveness controversy. It does, however, offer the basis for a conceptual and empirical approach to generate evidence that, in combination with existing information about PDM-outcome relationships, could lead to a fuller understanding of the participation phenomenon. This conceptual and empirical framework can be used to examine the numerous intervening variables have been proposed by other writers (i.e., Locke & Schweiger, 1979; Sashkin, 1976; Singer, 1974) to mediate the relationships between employee participation and its outcomes.

The essential message of the present research is that we must have a clearer shared understanding of what employee participation is, and what it means to organization members, before we can determine the effectiveness of participation. The Dachler and Wilpert (1978) conceptual model, and a research strategy directed at investigating the processes of participatory social arrangements hold the promise for approaching such an understanding of this complex social phenomenon.
APPENDIX A

DESCRIPTION OF RESEARCH
WORK PROCEDURES RESEARCH PROJECT

My name is Jim Cheston, and I am a PhD student in Social Psychology at the University of Windsor. I have met with as many staff on your residence as possible to discuss the involvement of this residence in a research project. The research project is the focus of my dissertation research, which is being supervised by Dr. John LaGipa, of the University of Windsor's Psychology Department. This note is to inform you of the information I shared with your coworkers.

The research will examine the impact of residence work procedures on direct-care staff. The purpose of the research is to look at how residence procedures currently influence employees, and to determine whether they might be changed to improve the work experience of direct-care employees.

If you decide to be involved in the research you will be asked to complete two questionnaires (which, together, take about one hour to complete) during work time. A few weeks later you will be able to discuss the work procedures on your residence with a researcher and/or to fill out a short questionnaire about the work procedures on your residence. The questionnaires have to do with your personal views, and so there are no right or wrong answers. Code numbers will be used on the questionnaires to keep your responses completely confidential. Only summary group statistics will be reported.

In addition to the questionnaires you fill out, your supervisor will be asked to complete a rating form on work performance for each person on this residence that participates. These ratings are for research purposes only. Again, this information will be strictly confidential and no-one at SRC other than your supervisor will know how anyone on this residence has been rated.

It is hoped that this research will lead to improvements in the work experiences of direct-care staff, and your involvement is encouraged. Participation is voluntary, however, and if you decide to participate, you may withdraw from the study at any time. At the end of the research a summary of the research and its main findings will be prepared for your information.

I will be scheduling times with your supervisor for staff to fill out the questionnaires in the next few weeks. Before you fill out any questionnaires, the research will be explained to you in person, and you will be asked to sign a "consent to participate in research" form. If you decide you do not wish to be involved in the research, you can say so at that time and simply return to your work.

If you have any questions about the research, please do not hesitate to call me at extension 2312, or leave a message for me in the Psychology Department.
APPENDIX B

SEMI-STRUCTURED INTERVIEWS
Hi, my name is ____________. I am a graduate student from the University of Windsor, and I would like to talk with you about the work you do here at SRC. As you know, this is part of the research project that Jim Cheston is doing for his doctoral research.

I would like to take some notes while we are talking so I will be able to remember what you have said. Is that alright with you? As with the questionnaires you filled out earlier, any information given by you during our talk will be kept confidential.

a) First of all, how long have you worked here at SRC? And how long have you been on this residence? What is the work like? Do you enjoy it?

I would like to talk with you about the work procedures on this residence. By work procedures, I mean how the work is set up so you accomplish your work; how the duties and areas of responsibility of your job are carried out. For example, a main work procedure for a nurse might be to record patients' vital signs and medical progress on charts every hour.

b) What do you feel are the main work duties, or areas of responsibility, of your job? Are there work procedures, or set ways to carry out these duties? Could you briefly describe them, please?

c) If it was decided that one of these main duties was going to be changed on your residence (for example, ... one of duties mentioned for b above), how do you think the change would be handled?

d) Suppose a policy about client care was changed in this facility. An example might be that residents would now have to spend two hours per week off-residence with a DSW-2. How do you think such a change would be introduced and implemented on this residence?

e) Imagine that the supervisor on your residence is told that for two days next week, the food carts cannot come to your residence. The residents will have to be taken by DSW-2s, two at a time, to eat in the cafeteria. What do you think would happen on this residence to deal with this disruption to the normal work schedule?

f) Now suppose that you thought that one of the main job duties on this residence could be done much more effectively if it was done differently. What would you do?

g) If a staff meeting was held to discuss a problem on the residence, for example the residents' bathing times, how would the meeting go? How would a decision be made on the issue?
INTERVIEW RATING SHEET  

Participant #

a) General appraisal of job: ________________________________

b) Work duties: ________________________________

Procedures: ________________________________

1 _____ 2 _____ 3 _____ 4 _____ 5

   inflexible         flexible

c) Main duty change: ________________________________

Decision:  1 _____ 2 _____ 3 _____ 4

d) Policy change: ________________________________

Decision:  1 _____ 2 _____ 3 _____ 4

e) Residence situation: ________________________________

Decision:  1 _____ 2 _____ 3 _____ 4

f) To change duty: ________________________________

Decision:  1 _____ 2 _____ 3 _____ 4

g) Staff meeting: ________________________________

Decision:  1 _____ 2 _____ 3 _____ 4
APPENDIX C

PERCEIVED GROUP INFLUENCE SCALE
PARTICIPANT #

BELOW IS A LIST OF DECISIONS THAT GET MADE AT WORK. FOR EACH OF THE FOLLOWING DECISIONS, PLEASE INDICATE HOW MUCH SAY YOU FEEL THE DSW-2S, AS A GROUP, ACTUALLY HAVE IN MAKING THESE DECISIONS ON YOUR RESIDENCE.

a) Decisions about how the work is done on this residence.

1 _ _ _ _ _ 2 _ _ _ _ 3 _ _ _ _ 4 _ _ _ _ 5 _ _ _ _ 6 _ _ _ _ 7
No say _ _ _ _ _ Some say _ _ _ _ _ Good deal of say _ _ _ _ _ Very great deal of say

b) Decisions about changing how the work is done on this residence.

1 _ _ _ _ _ 2 _ _ _ _ 3 _ _ _ _ 4 _ _ _ _ 5 _ _ _ _ 6 _ _ _ _ 7
No say _ _ _ _ _ Some say _ _ _ _ _ Good deal of say _ _ _ _ _ Very great deal of say

c) Decisions about how work related problems are solved.

1 _ _ _ _ _ 2 _ _ _ _ 3 _ _ _ _ 4 _ _ _ _ 5 _ _ _ _ 6 _ _ _ _ 7
No say _ _ _ _ _ Some say _ _ _ _ _ Good deal of say _ _ _ _ _ Very great deal of say

d) Decisions about how to settle disagreements between people in your work group.

1 _ _ _ _ _ 2 _ _ _ _ 3 _ _ _ _ 4 _ _ _ _ 5 _ _ _ _ 6 _ _ _ _ 7
No say _ _ _ _ _ Some say _ _ _ _ _ Good deal of say _ _ _ _ _ Very great deal of say

e) Decisions about what to do when someone in your work group does not do his or her job.

1 _ _ _ _ _ 2 _ _ _ _ 3 _ _ _ _ 4 _ _ _ _ 5 _ _ _ _ 6 _ _ _ _ 7
No say _ _ _ _ _ Some say _ _ _ _ _ Good deal of say _ _ _ _ _ Very great deal of say

f) Decisions about how work gets divided up among people.

1 _ _ _ _ _ 2 _ _ _ _ 3 _ _ _ _ 4 _ _ _ _ 5 _ _ _ _ 6 _ _ _ _ 7
No say _ _ _ _ _ Some say _ _ _ _ _ Good deal of say _ _ _ _ _ Very great deal of say

APPENDIX D

SELF-EFFICACY SCALE
The following statements are about how well you believe you can perform different aspects of your job here at SRC.

Following each of the statements there are words (fillers) that might be used to fill in the blank space in the statement. Indicate whether you feel the statement expresses your belief, with each filler included in the statement, by writing Y for Yes, or N for No, in the first space beside each filler.

In the certainty column (the blank space beside each Y or N response you make), write a number between one (1) and one hundred (100) to show how certain you are about the Y or N response for that filler.

The research assistant will answer any questions you have about how to respond to these statements as you do the example item below.

Example:

a) I believe I can skip a rope ________

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If you are clear on how to respond to these statements, please continue.

1) I believe I can prepare a shift report ________

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2) While helping residents with daily routines (i.e., dressing, eating, toileting, etc.) I believe I perform ________

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3) When I am doing paperwork required for my job, I believe I perform __________.

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4) When I am working with my co-workers on a resident's residential program (i.e., behaviour management, vocational, or skill-building), I believe I perform __________.

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5) I believe that I do progress notes __________.

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6) When dispensing medications to the residents, I believe I perform __________.

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7) I believe that I interact with the residents __________.

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8) I believe that I contribute to making decisions about how things are done on this residence _______.

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9) When monitoring residents' activities to ensure their well-being, I believe I perform _______.

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10) I believe I maintain communications with the family of my case client(s) _______.

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APPENDIX E

INSTRUMENTALITY SCALE
THE FOLLOWING STATEMENTS ARE ABOUT YOUR BELIEFS THAT YOU WILL OBTAIN CERTAIN POSITIVE OUTCOMES, OR REWARDS, IF YOU PERFORM YOUR WORK AT DIFFERENT LEVELS OF EFFECTIVENESS.

Answer these items in the same way that you answered the previous items; For each response, make a Y or N response, and your certainty for the Y or N response.

11) I believe that if I prepare my shift reports __________, I will gain recognition from my coworkers.

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12) I believe that if I perform __________ while helping residents with their daily routines (i.e., dressing, eating, toileting, etc.), then I will feel that I am serving the residents well.

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13) I believe that if I perform __________ while doing the paperwork required for my job, then I will gain recognition from my supervisor.

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14) I believe that if I perform __________ while working with my coworkers on residents' residential programs (i.e., behaviour management, vocational, or skill-building), then I will gain recognition from my co-workers.

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15) I believe that if I do progress notes _____, then I will get a sense of fulfilment from doing my work.

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16) I believe that if I perform _______ when dispensing medications to the residents, then I will gain recognition from my co-workers.

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17) I believe that if I interact with the residents ________ then I will get a sense of fulfilment from doing my job.

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18) I believe that if I contribute _________ to making decisions about how things are done on this residence, then I will gain recognition from my co-workers.

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19) I believe that if I perform ________ when monitoring residents' activities to ensure their well-being, then I will gain recognition from my supervisor.

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20) I believe that if I maintain communications with the family of my case client(s) __________, then I will feel that I am serving the residents well.

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APPENDIX F

WORK OUTCOMES SURVEY
Valued Outcomes of Work

Performing a job well can result in a person obtaining various work outcomes, or rewards, for his/her effective performance. Such work outcomes might range from something very tangible, such as a pay bonus or promotion, to more intangible outcomes, such as a sense of personal fulfilment, recognition from one's supervisor, or respect from one's coworkers. Please list below the work outcomes that you feel are available to you for effective performance of your job.

People differ in how much they value the possible work outcomes that might be available for effectively performing their job. After you have listed the work outcomes, please indicate with an asterisk (*) in the "valued outcomes" column, which of those work outcomes you value. Also indicate your preferences by rank ordering your valued work outcomes (the ones you mark with an asterisk) from one (1) to five (5), with 1 being the outcome you value most.

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APPENDIX G
VALENCY SCALE
THE FOLLOWING STATEMENTS ARE ABOUT HOW MUCH YOU VALUE DIFFERENT POTENTIAL POSITIVE OUTCOMES, OR REWARDS, THAT YOU MIGHT GAIN FROM PERFORMING YOUR JOB EFFECTIVELY.

For each of the potential rewards for doing your job effectively that are listed below, indicate on the accompanying scale how attractive that reward would be to you.

1) Being recognized by my coworkers for a job well done.

1 2 3 4 5
Very Somewhat Neither Somewhat Very
Unattractive Unattractive Attractive Attractive Attractive
nor Unattractive

2) A sense of fulfilment from doing my work.

1 2 3 4 5
Very Somewhat Neither Somewhat Very
Unattractive Unattractive Attractive Attractive Attractive
nor Unattractive

3) Being recognized by my supervisor for a job well done.

1 2 3 4 5
Very Somewhat Neither Somewhat Very
Unattractive Unattractive Attractive Attractive Attractive
nor Unattractive

4) A feeling that I am serving the residents well.

1 2 3 4 5
Very Somewhat Neither Somewhat Very
Unattractive Unattractive Attractive Attractive Attractive
nor Unattractive
APPENDIX H

BEHAVIOURALLY ANCHORED RATING SCALE
Work Performance Rating Instructions

Please complete the following work performance rating forms for the work of your subordinates. These ratings will be used for research purposes only. The researcher will be the only person to see the ratings you make. Consequently, these ratings will not influence your subordinates in any way.

Note that the employees' names are not on the rating forms. The employees are identified by temporary research code numbers only. When the researcher records your ratings, the employees' permanent research code numbers (known only by the researcher) will be used so that the ratings made can be matched with the employees' questionnaire responses.

These precautions to protect the confidentiality of your ratings have been made to protect the privacy of your subordinates, and so that you may feel free to rate your subordinates openly and honestly. You can be assured that the ratings you make of individual employees will be kept in the strictest confidence. The group ratings of residences will not be identified either. Only the results of summary statistics, with un-named residences, will be reported to Southwestern Regional Centre.
Temporary Participant #

**Work Performance Rating Form**

Based on the work performance rating scales, circle the number that best describes your rating of this employee on each of the job dimensions below:

Client care/daily duties.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

Case manager duties and responsibilities.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

Staff relations and communications.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

General paperwork.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

Leadership, responsibility, and reliability.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

Programming for residents.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

Medications and health of residents.

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5

Safety of residents

1 _ _ _ _ _ 2 _ _ _ _ _ 3 _ _ _ _ _ 4 _ _ _ _ _ 5
**Work Performance Rating Scales**

**Client care/daily duties**

- Could be expected to show affection through hugging, talking, and/or playing with clients (5)
- Could be expected to take extra care in dressing clients up nicely or putting make-up on female clients (4)
- Could be expected to consistently get residents to their appointments on time (3)
- Could be expected to not bathe or shave clients correctly - would carry out the task but not do it accurately (2)
- Could be expected to sit in office and neglect carrying out daily duties (1)
Case manager duties and responsibilities

1. Could be expected to maintain the progress notes of assigned clients

2. Could be expected to have to be reminded of case manager responsibilities

3. Could be expected to ensure the welfare of assigned clients by acting as their advocate in seeing their physical, emotional and training needs are met

4. Could be expected to maintain good communications with clients' parents by phoning or writing more letters than is the standard practice

5. Could be expected to arrange meetings between the clients and their parents to facilitate better family relations
Staff relations and communications

Could be expected to take over a co-worker's job if they were not feeling well, etc. better family relations

Could be expected to effectively communicate their wants and needs to coworkers

Could be expected to share informations with coworkers

Could be expected to not listen to other people's ideas and not participate in group discussions or decisions

Could be expected to yell at coworkers and put them down
General paperwork

Could be expected to consistently submit reports that are clear, explicit, and detailed

5

Could be expected to properly complete paperwork ahead of schedule

4

Could be expected to do the required paperwork on time

3

Could be expected to hand in incomplete paperwork

2

Could be expected to submit hastily written notes containing inaccurate information

1
Leadership, responsibility, reliability

Could be expected to gain the support of coworkers initiating an activity and effectively delegate job duties to others

Could be expected to help coworkers with their jobs and assist new staff to learn ward routines

Could be expected to follow through on promised performance and not leave until shift duties are completed

Could be expected to be habitually late for work

Could be expected to slough off work onto coworkers and consistently depend on others
Programming for residents

Could be expected to understand programming procedures and to take an active part in developing programs for residents

Could be expected to re-evaluate residents' programs re: timing, type of reinforcement, etc.

Could be expected to make sure reinforcements are done at the appropriate time

Could be expected to ignore targetted behaviours

Could be expected to document programming inappropriately, or to fudge the data
Medications and health of residents

Could be expected to know medications and their side-effects and to notice side-effects of medication on residents

Could be expected to get their medications done and be willing to help others

Could be expected to administer medications with 100% accuracy

Could be expected to frequently leave the medication tray dirty

Could be expected to frequently forget to give medications to residents
Ensure safety of residents

5
Could be expected to effectively handle a crisis so that the safety of the residents is assured

4
Could be expected to notice and act on certain client behaviours that signal impending disruptive behaviour

3
Could be expected to know where all the ward residents are at a given time

2
Could be expected to not supervise residents properly when outside the residence

1
Could be expected to not intervene in behaviour problems, such as when two residents are fighting
APPENDIX I

WORK LOCUS OF CONTROL SCALE
FOLLOWING ARE SOME STATEMENTS ABOUT WORK IN GENERAL. THE STATEMENTS ARE NOT REFERRING TO YOUR PARTICULAR JOB OR YOUR PARTICULAR WORK EXPERIENCE.

For each statement, circle the number on the accompanying rating scale that best describes how much you agree or disagree with that statement about work, in general. Your personal beliefs are important here; there are no right or wrong answers.

1) A job is what you make of it.

1 disagree  2 disagree  3 disagree  4 agree  5 agree  6 agree
very much  moderately  slightly  slightly  moderately  very much

2) On most jobs, people can pretty much accomplish whatever they set out to accomplish.

1 disagree  2 disagree  3 disagree  4 agree  5 agree  6 agree
very much  moderately  slightly  slightly  moderately  very much

3) If you know what you want out of a job, you can find a job that gives it to you.

1 disagree  2 disagree  3 disagree  4 agree  5 agree  6 agree
very much  moderately  slightly  slightly  moderately  very much

4) If employees are unhappy with a decision made by their boss, they should do something about it.

1 disagree  2 disagree  3 disagree  4 agree  5 agree  6 agree
very much  moderately  slightly  slightly  moderately  very much

5) Getting the job you want is mostly a matter of luck.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
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<td>agree</td>
<td>agree</td>
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<tr>
<td>very</td>
<td>moderately</td>
<td>slightly</td>
<td>moderately</td>
<td>very</td>
<td>much</td>
</tr>
</tbody>
</table>

6) Making money is primarily a matter of good fortune.

<table>
<thead>
<tr>
<th>1</th>
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<th>5</th>
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<td>very</td>
<td>moderately</td>
<td>slightly</td>
<td>moderately</td>
<td>very</td>
<td>much</td>
</tr>
</tbody>
</table>

7) Most people are capable of doing their jobs well if they make the effort.

<table>
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<th>5</th>
<th>6</th>
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<tr>
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<tr>
<td>very</td>
<td>moderately</td>
<td>slightly</td>
<td>moderately</td>
<td>very</td>
<td>much</td>
</tr>
</tbody>
</table>

8) In order to get a really good job you need to have family members or friends in high places.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
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<td>disagree</td>
<td>agree</td>
<td>agree</td>
<td>agree</td>
</tr>
<tr>
<td>very</td>
<td>moderately</td>
<td>slightly</td>
<td>moderately</td>
<td>very</td>
<td>much</td>
</tr>
</tbody>
</table>

9) Promotions are usually a matter of good fortune.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>5</th>
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<td>very</td>
<td>moderately</td>
<td>slightly</td>
<td>moderately</td>
<td>very</td>
<td>much</td>
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</table>

10) When it comes to landing a really good job, who you know is more important than what you know.

<table>
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<th>4</th>
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<tr>
<td>very</td>
<td>moderately</td>
<td>slightly</td>
<td>moderately</td>
<td>very</td>
<td>much</td>
</tr>
</tbody>
</table>
11) Promotions are given to employees who perform well on the job.

1  2  3  4  5  6
disagree disagree disagree agree agree agree
much moderately slightly slightly moderately very

12) To make a lot of money you have to know the right people.

1  2  3  4  5  6
disagree disagree disagree agree agree agree
very much moderately slightly slightly moderately very

13) It takes a lot of luck to be an outstanding employee on most jobs.

1  2  3  4  5  6
disagree disagree disagree agree agree agree
very much moderately slightly slightly moderately very

14) People who perform their jobs well generally get rewarded for it.

1  2  3  4  5  6
disagree disagree disagree agree agree agree
very much moderately slightly slightly moderately very

15) Most employees have more influence on their supervisors than they think they do.

1  2  3  4  5  6
disagree disagree disagree agree agree agree
very much moderately slightly slightly moderately very

16) The main difference between people who make a lot of money and people who make a little money is luck.

1  2  3  4  5  6
disagree disagree disagree agree agree agree
very much moderately slightly slightly moderately very
APPENDIX J

PERCEIVED SKILL-UTILIZATION SCALE
THE FOLLOWING QUESTIONS ASK YOU HOW MUCH YOU USE YOUR ABILITIES AND TRAINING ON THIS JOB.

Circle the number on the rating scale following each of the questions below to indicate how much you feel you use that characteristic in your job.

1) Does your job fully utilize your abilities?

1 2 3 4 5
not very some a great a very
at all little deal great deal

2) Does your job fully utilize your training and experience?

1 2 3 4 5
not very some a great a very
at all little deal great deal

3) Do you have the chance to learn new jobs?

1 2 3 4 5
not very some a great a very
at all little deal great deal

4) Does your job allow you to work in the way you think best?

1 2 3 4 5
not very some a great a very
at all little deal great deal

APPENDIX K

QUALITY OF WORKLIFE SURVEY
THE FOLLOWING STATEMENTS ARE ABOUT YOUR PERCEPTIONS OF YOUR JOB.

Please circle the number on the scale following each statement which you think most accurately describes your agreement with the statement.

1) People I work with encourage each other and work together.

1 ______ 2 ______ 3 ______ 4 ______ 5 ______
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree

2) Communications are good among my co-workers.

1 ______ 2 ______ 3 ______ 4 ______ 5 ______
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree

3) In general, my co-workers and I have a good attitude about working here.

1 ______ 2 ______ 3 ______ 4 ______ 5 ______
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree

4) My job requires that I keep on learning new things.

1 ______ 2 ______ 3 ______ 4 ______ 5 ______
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree

5) I am proud to tell people where I work.

1 ______ 2 ______ 3 ______ 4 ______ 5 ______
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree

6) You can give an honest opinion around here without any worry.

1 ______ 2 ______ 3 ______ 4 ______ 5 ______
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree
7) Ultimately, my supervisor has too much control over my job.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree

8) I have a lot of say over what has to be done on my job.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree

9) I have a lot of say over how tasks will be divided among myself and my co-workers.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree

10) I can influence the decisions that affect my job.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree

11) I have a great deal of freedom to run my own job.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree

12) My supervisor encourages me to participate in important decisions.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree

13) My supervisor encourages those he/she supervises to develop new ways of doing things.

1  2  3  4  5
Strongly Disagree Neither Agree Agree Strongly
Disagree Nor Disagree Agree Agree
APPENDIX L

INSTRUCTIONS FOR QUESTIONNAIRE ADMINISTRATION
INSTRUCTIONS FOR QUESTIONNAIRE ADMINISTRATION

Introduction

First of all, introduce yourself to the staff member and acknowledge that you are here to give them the questionnaires to do with Jim Cheston's research. Explain that before the person fills out any questionnaires, you have to tell them some things about the research and have them sign a consent form. Give the person the envelope and have them look at the consent form. The information to be given with respect to the consent form is:

- The research is for Jim's PhD dissertation and is being supervised by Dr. John LaGaipa, a professor in the Psychology Department at the U of Windsor.

- The research is looking at the impact of residence work procedures on direct-care staff. The purpose of the research is to determine whether work procedures can be changed to improve the work experience of DSW-2s.

- Participating in the research involves three things:
  1) Filling out these questionnaires, which will take about one hour, 2) In a few weeks someone from the U of Windsor will come to talk individually with available staff about the work procedures on this residence. Those that do talk with a researcher, and those that don't will be asked to fill out a very short questionnaire about the work procedures on their residence, 3) The supervisor will fill out a rating form on the performance of all the staff under them that participate in the research. Emphasize that these ratings are for research purposes only, and that they will
be strictly confidential - temporary code numbers, etc. These ratings will not be known to anyone other than the supervisor and Jim Cheston (when entering numbers in computer), and will have absolutely no influence at all on their job at SRC.

- All information collected from employees, and collected about employees, will be strictly confidential. Code numbers are being used to maintain their confidentiality. Any reports of the research will be in the form of summary statistics, and neither the identity of individuals, or of residences involved will be reported.

- Participation in the research is voluntary, and if for any reason after deciding to participate they change their mind, they can withdraw from the research.

- After the research is done, a summary of the research and its main findings will be prepared by Jim Cheston, and will be available to all staff that participated in the research.

- Martha Lunenburg, in the library, is the chairperson of the SRC Research Advisory Committee, and any complaints about the research should be reported to her.

When the above information has been presented to the staff member, ask if they have any questions about any of it. If not, they can sign the Consent to Participate form (and you can sign as Witness). Ask to keep the signed consent form separate from their questionnaires, to ensure confidentiality. If they do not wish to participate, they can return to their work.
Administering Questionnaires

Have the person look first at the Minnesota Satisfaction Questionnaire (MSQ). Ask him/her to turn to the first page and fill in questions 1 (sex), 2 (birth date), 3 (education), 4 (classified or not), 6 (tenure on residence), and 8 (tenure at SRC). Next, read the directions on the following page while the person reads along. When done, ask if they understand the directions, and if so have them continue to the next page. When the person has finished the MSQ, ask him/her to look it over to make sure that no questions have been left unanswered.

After the MSQ, have the person read the directions on the cover page of the Research Project Questionnaire. Point out that the first set of questions (1 to 16) are about work in general, and that the questions after those have to do with their job at SRC. Turn to the page with the star on the top, right corner, and explain that these questions are answered a little differently, so the person should let you know when s/he gets to them so you can go over the instructions with him/her.

Have the person begin. When the starred page is reached, go over the instructions and the example item to make sure the person understands that a Y/N response and a certainty response should be made for each filler for each item. When the person is clear on how to respond, have him/her continue.

When the person is finished the Research Questionnaire, again have him/her check it over for missed responses. Have the person put the two questionnaires in the envelope and seal the envelope, keeping the consent form separate. Lastly, THANK PERSON
APPENDIX M

CONSENT TO PARTICIPATE IN RESEARCH FORM
CONSENT TO PARTICIPATE IN RESEARCH FORM

I, ___________________________, agree to participate in the research on residence work procedures that is being conducted by Jim Cheston, a doctoral candidate from the University of Windsor's psychology department. The general purpose of this research has been explained to me as being to assess how residence work procedures impact on employees, with the goal of improving the work experiences of direct care workers. It has been explained to me that Jim Cheston is conducting this research as part of his doctoral dissertation, under the supervision of Dr. John LaGaipa at the University of Windsor.

I am aware that participation in this project will involve filling out a packet of questionnaires, which will take approximately one hour. I am also aware that after filling out the questionnaires I will be asked to discuss, and/or to fill out a short questionnaire about the work procedures on the residence where I work. In addition, I know that my supervisor will be filling out a rating form on my work performance, to be used for research purposes only. I understand that any information collected from me, or about me, will be recorded using code numbers only, and that no names will be used in any reporting of results. I understand that I may choose to withdraw from this study at any time. I am also aware that a summary of the overall results from this research will be prepared by Mr. Cheston and will be available for me to read at the end of the research project.

Finally, it has been explained to me that the Research Advisory Committee of Southwestern Regional Centre monitors research being carried out at the centre. Consequently, any questions or complaints regarding violation of the welfare of participants in this project should be forwarded to Martha Lunenborg, Chairperson of the Research Advisory Committee, Southwestern Regional Centre.

After reading the above information, I understand what my involvement in this research requires and I am willing to be a participant.

Signed: _______________  Witness: _______________
Date: _______________  Date: _______________
APPENDIX N

INSTRUCTIONS FOR INTERVIEWERS
INTERVIEW INSTRUCTIONS

The staff you interview know of this research as an investigation of the influence of work procedures on direct-care staff. The main purpose of this interview, however, is to determine how much influence the person perceives the direct-care staff to have in the making of decisions that concern the work on their residence. Following are some suggestions of what the particular questions are directed at discovering, and some prompt questions that might be used to obtain additional relevant information.

The first few questions under a) (about the subject's tenure and opinion of the job) are to "break the ice" and to begin to develop rapport with the subject. Briefly note the general disposition expressed toward the job (positive, negative, indifferent, etc.). Additional informal conversation might be encouraged if you feel it would make this individual feel more at ease.

Question b) is both a lead-in to the questions that follow, and an opportunity to see how much standardization there is in how their work is carried out. Respondents may require some clarification on what is meant by "work duties". When inquiring about the main duties, three or four is enough for the person to describe. Briefly note the duties mentioned and how they are described. Do the duties reflect the functional level of the clients on that residence?
When inquiring about the work procedures, attend to and note the degree of standardization that is being described. You might gently probe for how much flexibility there seems to be in how the work is carried out; i.e., "Does it have to be done that way?", "Could you do it differently?", or "Is there any room to do that differently?" If the person says there are no work procedures, or set ways to do things, ask how they generally do them.

For questions c) through g), you are looking for how much influence the direct-care workers feel they have in decisions about: c) changes to how their work is done, d) facility policy changes, e) problem situations on their residence, f) influencing change themselves, and g) dealing with a residence problem in a staff meeting. Particular things to attend to are: -Are the decisions handled entirely by the supervisor, with staff being directed on how to change? -Does person say that views of staff would be sought by supervisor? -Would views of staff influence the change? -Would staff be directly involved in deciding how the determined course of action would be implemented?

For the respondent's answer to question f) you might also look for: Would the person try to get the job duty changed? How would idea be presented and who would decide on whether, or how, it would be implemented? Does respondent say he/she would go straight to supervisor? -discuss idea with co-workers? -bring it up at a staff
meeting? -not do anything? Does respondent say that the
decision would be made by the supervisor? -with staff
input? -by the staff?

For questions c) through g), rate the respondents' answers t: each one according to one of the following
classifications:

1) Decisions are generally made by supervisory level staff
without consulting subordinates (DSW-2s).
2) Supervisory staff might ask subordinates for their
opinions on the issue, then supervisor makes the decision.
3) Subordinates are directly involved in making decisions;
their input directly influences the decision made.
4) Subordinates make, and seem largely accountable for
decisions.
APPENDIX O

EFFECTS OF THE 1986-1987 PARTICIPATION INTERVENTION
Effects of the PDM Intervention on Job Satisfaction

Evaluation research of the PDM intervention showed statistically significant differences in the job satisfaction and quality of worklife of the residential workers on the two project residences between 1986 and 1987. These two residences were classified as FP residences in the present research. Consequently, the assessment of the PDM intervention carried out for the present research was to determine if previous improvements in job satisfaction and quality of worklife were still evident two years after the completion of the intervention.

The evaluation research of the 1986-1987 PDM demonstration project utilized the MSQ General Satisfaction Scale, the MSQ Intrinsic Satisfaction Scale, and the MSQ Extrinsic Satisfaction Scale to assess the effects of the PDM project on residential workers' job satisfaction. Table 16 presents the results of paired samples t-tests run on the three MSQ satisfaction scales for the nine subjects on the project residences who were tested both in 1986 and in 1989. As shown in Table 16, statistically significant differences between the two testing times were obtained on all three MSQ satisfaction scales. Examination of the mean scores for the two testing times revealed that the nine residential workers were more intrinsically, extrinsically and generally satisfied on the FP residences in 1989 than they had been prior to the participation intervention.
Table 16

**Paired Samples T-tests on the Three MSQ Satisfaction Scales Between the 1986 Pre-intervention Testing and the 1989 Testing of Nine Subjects on the FP Residences**

**MSQ General Satisfaction Scale**

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<thead>
<tr>
<th>Testing</th>
<th>mean</th>
<th>mean difference</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
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<tbody>
<tr>
<td>1986</td>
<td>54.11</td>
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<td></td>
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<tr>
<td>1989</td>
<td>67.89</td>
<td>13.78</td>
<td>5.01</td>
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<td>.001</td>
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**MSQ Intrinsic Satisfaction Scale**

<table>
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<th>Testing</th>
<th>mean</th>
<th>mean difference</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>188.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>241.11</td>
<td>52.55</td>
<td>5.28</td>
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<td>.001</td>
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**MSQ Extrinsic Satisfaction Scale**

<table>
<thead>
<tr>
<th>Testing</th>
<th>mean</th>
<th>mean difference</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
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<tbody>
<tr>
<td>1986</td>
<td>84.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>102.00</td>
<td>17.22</td>
<td>2.47</td>
<td>8</td>
<td>.039</td>
</tr>
</tbody>
</table>

**Note.** n=9 residential workers who were working on the residences that were involved in the PDM intervention both in 1986 and in 1989.
Independent samples t-tests were used to assess whether the improved job satisfaction found for the nine subjects of the FP residences who were involved in the PDM intervention could be generalized to the residential workers on the FP residences who were not involved in the 1986 intervention. To accomplish this, t-tests were run to compare the pre-intervention data from all 20 pre-intervention subjects to the 1989 data from all 15 subjects on the FP residences.

Before comparing the two groups, t-tests were run to assess the equivalence of scores for the nine residential workers on the FP residences who were tested both in 1986 and in 1989, and those who were tested on only one of these occasions. These preliminary t-tests ensured that comparisons of the full pre-intervention sample to the 15 residential workers on the FP residences in 1989 were not unduly affected by the scores of the subjects who were not tested on both occasions.

The F-ratios for the t-tests on all three of the MSQ scales had high significance level probabilities, ranging from .14 to .83. These probabilities indicated that the variances for the two groups of residential workers were equal. Therefore, the t-test results reported are from t-tests calculated with a pooled estimate of the variances of the two groups (SSPS/PC+ Manual, 1988).

Table 17 presents results from independent t-tests comparing the pre-intervention scores on the MSQ general,
intrinsic and extrinsic satisfaction scales for the nine subjects who were on the FP residences in 1989 to the 11 pre-intervention subjects who were not on the FP residences in 1989. As shown in Table 17, statistically significant differences were obtained for the MSQ General Satisfaction Scale, \( t(1, 18) = 4.85, \ p < .05 \), and for the MSQ Intrinsic Satisfaction Scale, \( t(1, 18) = 4.85, \ p < .05 \). The mean scores for the two groups indicated that the pre-intervention subjects who were not on the FP residences in 1989 had higher general and intrinsic job satisfactions than the pre-intervention subjects who were on the FP residences in 1989. The result for the MSQ Extrinsic Satisfaction Scale approached a statistically significant level in the same direction, with pre-intervention subjects not on the FP residences being more satisfied than those who were on the FP residences.

Table 18 presents results from independent samples t-tests comparing the 1989 scores on the MSQ general, intrinsic and extrinsic satisfaction scales for the nine subjects on the FP residences who were involved in the 1986 PD intervention to the six FP subjects who were not involved in the intervention. As shown in Table 18, results showed no statistically significant differences in scores on the three MSQ satisfaction scales between the two subsets of residential workers on the FP residences. The mean scores for each of the three MSQ satisfaction scales indicate that
Table 17

**Independent Samples T-tests on the Three MSQ Satisfaction Scales Between Pre-intervention Subjects Who Were on the FP Residences in 1989 and Pre-intervention Subjects Who Were Not**

### MSQ General Satisfaction Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>On FP residences</td>
<td>9</td>
<td>54.11</td>
<td>2.20</td>
<td>18</td>
<td>.04</td>
</tr>
<tr>
<td>Not on FP</td>
<td>11</td>
<td>63.82</td>
<td>2.20</td>
<td>18</td>
<td>.04</td>
</tr>
</tbody>
</table>

### MSQ Intrinsic Satisfaction Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>On FP residences</td>
<td>9</td>
<td>188.55</td>
<td>2.20</td>
<td>18</td>
<td>.04</td>
</tr>
<tr>
<td>Not on FP</td>
<td>11</td>
<td>220.82</td>
<td>2.20</td>
<td>18</td>
<td>.04</td>
</tr>
</tbody>
</table>

### MSQ Extrinsic Satisfaction Scale

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>On FP residences</td>
<td>9</td>
<td>84.77</td>
<td>2.00</td>
<td>18</td>
<td>.05</td>
</tr>
<tr>
<td>Not on FP</td>
<td>11</td>
<td>104.45</td>
<td>2.00</td>
<td>18</td>
<td>.05</td>
</tr>
</tbody>
</table>

*Note.* The results reported are from pooled variance t-tests.
Table 18

Independent Samples T-tests on the Three MSQ Satisfaction Scales Between the Subjects on the FP Residences Who Were Involved in the 1986 PDM Intervention and the FP Subjects Who Were Not

<table>
<thead>
<tr>
<th>MSQ General Satisfaction Scale</th>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Involved in intervention</td>
<td>9</td>
<td>67.89</td>
<td>.25</td>
<td>13</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Not involved</td>
<td>6</td>
<td>66.83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSQ Intrinsic Satisfaction Scale</th>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Involved in intervention</td>
<td>9</td>
<td>241.11</td>
<td>.69</td>
<td>13</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Not involved</td>
<td>6</td>
<td>231.33</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MSQ Extrinsic Satisfaction Scale</th>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Involved in intervention</td>
<td>9</td>
<td>102.00</td>
<td>.06</td>
<td>13</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td>Not involved</td>
<td>11</td>
<td>102.67</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. The results reported are from pooled variance t-tests.
the two subgroups within the FP residences can be considered
to have equivalent levels of job satisfaction.

The findings from these preliminary t-tests support
subsequent comparisons between the full pre-intervention
sample of 20 subjects and the 15 subjects on the FP
residences in 1989. The findings for the subjects on the FP
residences show no difference in job satisfaction ratings
between those residential workers who were involved in the
PDM intervention and those who were not involved. The pre-
intervention findings show that the pre-intervention
subjects who were still on the FP residences in 1989 had
lower job satisfaction before the intervention started than
did the subjects who were not on the FP residences in 1989.

This discrepancy in pre-intervention levels of job
satisfaction between the two subgroups of the pre-
intervention sample does not, however, invalidate
comparisons of the full pretest sample to the 1989 FP
subjects. In fact, the combination of the higher pre-
intervention scores from the subjects who were not on the FP
residences in 1989 reduces the likelihood of the statistics
obtaining a Type 1 error due to spuriously low pre-
intervention satisfaction scores of a segment of the pre-
intervention sample.

With the appropriateness of comparisons between the 20
pre-intervention subjects and the 15 FP subjects confirmed,
independent samples t-tests were run to compare the pre-
intervention satisfaction data from all 20 residential workers on the two project residences to the 15 workers on these two residences when they were classified as FP residences in 1989. As shown in Table 19, the results indicated statistically significant differences between the two groups on the MSQ General Satisfaction Scale, \( t(1, 33)=1.96, p<.05 \), and the MSQ Intrinsic Satisfaction Scale, \( t(1, 33)=2.82, p<.01 \), but not on the MSQ Extrinsic Satisfaction Scale.

The findings from the analyses testing the continuing positive effects of the PDM intervention on residential workers' job satisfaction indicate that the PDM intervention had a long-term positive effect on the intrinsic and general job satisfactions of residential workers.

**Effects of the 1986 PDM Intervention on Quality of Worklife**

The same analytic strategy described above to test the effects of the PDM intervention on job satisfaction was used to assess its effect on residential workers' quality of worklife. First, a paired samples t-test was run on the Quality of Worklife Survey (QWLS) scores of the nine subjects on the FP residences who were also involved in the 1986 PDM project. Second, two independent samples t-tests were run to compare the QWLS scores of the nine residential workers on the FP residences who were tested both in 1986 and in 1989, and those of subjects who were tested on only one of these occasions. Finally, an independent samples
Table 19

Independent Samples T-tests on the Three MSQ Satisfaction Scales Between the Full Pre-intervention Sample and all the Subjects on the FP Residences

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>20</td>
<td>59.45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP residences</td>
<td>15</td>
<td>67.47</td>
<td>1.96</td>
<td>33</td>
<td>.02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>20</td>
<td>206.30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP residences</td>
<td>15</td>
<td>237.20</td>
<td>2.82</td>
<td>33</td>
<td>.008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>20</td>
<td>95.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP residences</td>
<td>15</td>
<td>102.27</td>
<td>.87</td>
<td>33</td>
<td>.39</td>
</tr>
</tbody>
</table>

Note. The results reported are from pooled variance t-tests.
t-test was run to compare the pre-intervention QWLS data from all 20 residential workers on the two project residences to the 15 workers on the two FP residences.

The results from the paired samples t-test are presented in Table 20. As shown in Table 20, a statistically significant difference was found, t(1, 8) = 4.44, p < .01 for the QWLS scores between the 1986 testing and the 1989 testing. This finding indicates that the PDM intervention had a positive effect on the quality of worklife reported by the nine residential workers on the FP residences who were involved in the PDM project.

Table 20

<table>
<thead>
<tr>
<th>Testing</th>
<th>mean</th>
<th>mean difference</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>35.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1989</td>
<td>43.33</td>
<td>8.33</td>
<td>4.44</td>
<td>8</td>
<td>.002</td>
</tr>
</tbody>
</table>

The results of the preliminary independent samples t-tests that compared the QWLS scores of the nine subjects who were tested both in 1986 and in 1989 to the subjects who were tested only once are presented in Table 21. No statistically significant differences were found between the nine subjects and either the 11 subjects who were not on the FP residences in 1989, or the six FP subjects who were not
involved in the PDM intervention. These findings indicate that both the pre-intervention sample and the FP sample can be considered homogeneous groups in terms of quality of worklife scores. Consequently, a comparison between the full pre-intervention sample and the FP sample was appropriate.

Table 21

Independent Samples T-tests on the Quality of Worklife Survey Between 1) the Pre-intervention Data of Subjects Who Were and Who Were Not on the FP Residences in 1989, and 2) Subjects on the FP Residences Who Were and Who Were Not Involved in the 1986 PDM Intervention

1) Nine pre-intervention subjects who were on the FP residences in 1989 vs. 11 pre-intervention subjects who were not

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>On FP residences</td>
<td>9</td>
<td>34.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not on FP</td>
<td>11</td>
<td>38.27</td>
<td>1.08</td>
<td>18</td>
<td>.31</td>
</tr>
</tbody>
</table>

2) Nine FP subjects who were involved in the PDM intervention vs. six FP subjects who were not involved

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved</td>
<td>9</td>
<td>43.33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not involved</td>
<td>6</td>
<td>44.00</td>
<td>.13</td>
<td>13</td>
<td>.83</td>
</tr>
</tbody>
</table>

Note. The results reported are from pooled variance t-tests.
Table 22 shows the results of an independent samples t-test on the Quality of Worklife Survey scores between the pre-intervention sample and the 15 subjects on the FP residences. The results showed a statistically significant difference between the two groups, with $t(1, 33)=2.47$, $p<.05$. The findings from the analyses run to test the effects of the PDM intervention on the QWLS scores show that the quality of worklife of the residential workers on the FP residences was higher after the PDM intervention.

Table 22

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>mean</th>
<th>t</th>
<th>df</th>
<th>2-tail probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-intervention</td>
<td>20</td>
<td>36.79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FP residences</td>
<td>15</td>
<td>43.60</td>
<td>2.47</td>
<td>33</td>
<td>.02</td>
</tr>
</tbody>
</table>

Note. The results reported are from pooled variance t-tests.

The findings of the analyses used to assess the effects of the 1986 PDM intervention support the conclusion that the positive effects of the PDM project on residential workers' job satisfactions and quality of worklife were operating two years after the formal completion of the project. For the job satisfaction findings, the positive effects of the PDM
intervention were evident for the intrinsic and general job 
satisfactions of residential workers.

Both paired samples t-tests and independent samples t- 
tests were run to assess the effects of the 1986-1987 
participation demonstration project on the job satisfaction 
and quality of worklife of residential workers. Results of 
paired samples t-tests indicated that nine residential 
workers on the project residences in 1986 were more 
intrinsically, extrinsically, and generally satisfied on the 
FP residences in 1989 than they had been prior to the 
participation intervention. The results of paired samples 
tests also indicated that the quality of worklife (QWL) of 
these nine employees was higher 1989 than in 1986.

Results of independent samples t-tests indicated that 
for all the subjects on the FP residences, the participation 
intervention had a long-term positive effect on the 
intrinsic and general satisfaction of residential workers, 
but not on their extrinsic satisfaction. Results of 
independent samples t-tests also indicated that the QWL of 
all the residential workers on the FP residences was higher 
in 1989 than had been the QWL of the employees on these two 
residences before the PDM intervention.
References


Influence of organizational structure on role conflict


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published in 1911).


Vita Auctoris

Jim Cheston was born on May 22, 1955 to Joyce and Bill Cheston in Vancouver, British Columbia. He graduated from Delta Senior Secondary School in 1973 and then began a nine month trip to Europe later that year.

Jim received a Bachelor degree in commerce and economics from Simon Fraser University in 1980. He worked for Crown Zellerbach Canada in Vancouver from 1980 to 1981. In 1981 Jim bicycled across Canada to Halifax, Nova Scotia where he began studies in psychology. Jim received a Bachelor of Arts degree with honours equivalency in psychology from Saint Mary's University in 1983.

In 1985 Jim received a Master of Arts Degree in Applied Social Psychology from the University of Windsor. He remained at the University of Windsor for doctoral studies in applied social psychology and completed the requirements for his doctoral degree in 1991. His first employment as a psychologist began in 1991 with the Northern Treatment Centre in Sault Ste. Marie, Ontario.

Jim is married to Patti Cheston. They have one daughter, Amelia Rose.