Participative Goal-Setting: Social, Motivational, and Cognitive Factors

Miriam Erez and Revital Arad
Faculty of Industrial Engineering and Management, Technion-Israel Institute of Technology

This study examined three explanations of why participation in goal setting may lead to increased performance—the social factor of group discussion, the motivational factor of involvement in goal setting, and the cognitive factor of information. A 2 × 2 × 2 experimental design (low and high levels of group discussion, involvement, and information) was used to study a sample of 96 white collar employees who worked on a personnel selection task. Results indicated that the social and motivational factors of participation increased performance quantity, incidental learning, goal acceptance, group commitment, and satisfaction. The motivational and cognitive factors significantly contributed to performance quality, but the cognitive factor did not significantly affect performance quantity and work attitudes.

Extensive research on participation in goal setting and decision making (PDM) has revealed that numerous factors, both cognitive and motivational, are inherent in the process of participation but that different studies have emphasized different factors in this process. (Behe & Love, 1983; Campbell & Gingrich, in press: Cochr & French, 1948; Earley, 1985; Erez, Early, Hulin, 1985; Erez & Kanfer, 1983; Latham & Steele, 1983; Lewin, 1943, 1951; Locke & Schweiger, 1979). The present study distinguishes between three different factors evolving from the studies reviewed; a social factor of group discussion, leading to a decision, a motivational factor of involvement in goal setting, and a cognitive factor of information sharing.

Social, Motivational, and Cognitive Factors

Traditional studies have emphasized the socio-dynamic process in participation, whereas more recent studies have focused on the motivational factor of involvement in decision making and goal setting. Just recently attention has been drawn to the cognitive factor of information sharing involved in PDM. Participation has been conceived in the traditional studies as "group discussion leading to a decision" (Lewin, 1943, p. 63). This has proved to be a powerful technique for overcoming resistance to change and for increasing goal acceptance and its consequent performance (Coch & French, 1948; Lewin, 1943, 1951). The socio-psychological and motivational mechanisms underlying group participation were taken to be: group consensus, involvement in goal setting, commitment to public decision and involvement in group discussion (Bennet, 1955).

More recent studies on participation have mainly examined the effect of one component in the process of participation—the actual involvement in setting the goal—on goal acceptance, goal difficulty, performance, and satisfaction. Consistent findings were indicated for the positive effect of participation on the difficulty of goals (Latham & Saari, 1979a; Latham & Yukl, 1975; Zander, 1979) and on work satisfaction (Locke & Schweiger, 1979). However, inconsistent results have been found by studies examining the effect of participation on goal acceptance and performance. For example, positive effects were found in research by Earley (1985), Erez (in press), Erez, Early, and Hulin, (1985), Erez and Kanfer (1983), Matsui, Oniglatco, and Kakuyama (in press), and Vroom and Yetton (1973). Conversely, Latham and his colleagues (see Latham & Steele, 1983, for a review) found no significant differences between participation and no participation as long as the level of goal difficulty and the level of information were held constant (Dossett, Latham, & Mitchell, 1979; Latham & Sarri 1979a, 1979b; Latham & Steele, 1983; Latham, Steele, & Saari, 1982; Latham & Yukl, 1975). One explanation for the inconsistent results might be differences in the operationization of the social factor of group interaction. In the research by Latham et al., participation has been examined in dyadic relationships between one participant and one experimenter/ supervisor. On the other hand, in the traditional research, as well as in research by Erez (in press), Erez et al. (1985), and Matsui et al. (in press), participation took place in larger groups of peers. Thus, social interaction has been minimal, and it may account for the differences in the results of the two lines of research. The dyadic setting of one subject versus one supervisor may not enhance the effect of involvement in goal setting to the same extent as the social process of group discussion. To test the above argument, the separate effects as well as the interaction effect of involvement and group discussion should be examined.

In addition to the social and motivational factors, several researchers have argued that information sharing plays a central role in the process of participation (Bartlem & Locke, 1982; Latham & Saari, 1979b; Locke & Schweiger, 1979; Locke, Shaw, Saari, & Latham, 1981) and in particular for complex tasks (Campbell & Gingrich, in press). Although the level of information has differed between PDM conditions in numerous studies, its independent effect on performance has rarely been
examined. A reexamination of some of these studies reveals that the participative groups were better informed than the non-participative groups, and that this difference may have accounted for the superiority of the former group (Bartlem & Locke, 1982; Latham & Saari, 1979b; Neider, 1980). Such post hoc interpretations of the information effect need to be tested by a controlled experiment.

A recent study by Earley (1985) was designed to test the main and interaction effects of information and choice on goal acceptance and performance. In this study, information was given on how to perform the task more effectively, and on the meaningfulness of the goals for the participants. Subjects in the choice versus no-choice condition were allowed to select their own strategy and to determine when they could take a 5-min break. Results demonstrated significant main and interaction effects of choice and information on goal acceptance and performance. The combination of high choice and high information led to the highest levels of goal acceptance and performance.

Based on the above discussion, this study examined three explanations for the effect of participation on performance—the social factor of group discussion, the motivational factor of involvement in goal setting, and the cognitive factor of information.

### Quantity-Quality Performance Paradigm

The discussion of the differences between the cognitive and the motivational factors has an implication for the distinction between performance quantity and quality. Beehr and Love (1983) suggest that effort may be regarded as the action component of performance, whereas information components, such as goals, task characteristics, and feedback, inform employees how to direct their actions. Austin and Bobko (1984) speculate that “quantity requires less cognitive support, whereas quality depends on strategy development and definition” (p. 198).

It has been argued that the goal level induces a systematic trade-off relationship of the quantitative and qualitative aspects of response, because they compete on limited resources (Bavelas & Lee, 1978). Quantity goals prime subjects to concentrate on quantity and disregard the quality dimension of the task. For the same reason incidental learning as opposed to intentional learning may be lower when goals are difficult rather than easy (Austin & Bobko, 1984). However, an alternative assumption suggests that additional resources may be created, or unused resources could be allocated to the performance of the task, if the motivation to perform increases (Humphreys & Revelle, 1984; Kahneman, 1973). Following the above assumption, it may be hypothesized that quantity and quality are not necessarily incompatible. Information and detailed instructions on how to perform the task may direct individuals to better allocate their resources and thereby improve performance both in quality and quantity. Similarly, incidental learning may be improved by a total increase in the amount of resources or effort devoted to the task as a result of an increase in the level of motivation.

Based on the above discussion, the following hypotheses are postulated:

### Effects of participation components on performance

1. The motivational factor of involvement in goal-setting and the social factor of group discussion will positively affect performance quantity.
2. The cognitive factor of information will positively affect performance quality.
3. Quantity and quality are expected to be positively related only when relevant information on action plans is available.
4. The motivational and social components will positively affect incidental learning.

### Method

#### Subjects

The sample consisted of 96 employees in “white collar” occupations, taking part-time professional and academic courses at the Technion-Israel Institute of Technology, and at Haifa University. Eighty-four percent of the subjects were men, mostly engineers and technicians with ages ranging from 23 to 58, mean age 36, and education level from 9 to 24 school years.

Subjects were assigned at random to groups of six, which were in turn assigned to random or eight experimental conditions. Each cell contained two experimental groups. The groups did not significantly (p > 0.5) differ in background variables such as sex, age, and education.

#### Design

The experiment was a 2 x 2 x 2 factorial design consisting of two levels (high/low) of three factors: involvement in goal-setting, group discussion, and information sharing.

#### Task

Subjects were asked to work on a simulated task requiring them, in the capacity of personnel managers of large companies, to evaluate the suitability of certain job application forms to specific job requirements. Each subject received the following material: (a) job descriptions of three open positions, (b) 15 completed application forms (5 for each position), arranged in a fixed sequence so that each position appeared every fifth time, so as to control memorization of the master key, (c) a master key containing 24 job specifications for each position, (d) evaluation forms for each application containing the 24 job specifications. Subjects were required to indicate whether the applicant fitted (+), partially fitted (0), or did not fit (−), with each of the 24 specifications. Then subjects totaled the number of pluses, zeroes, and minuses for each applicant and recorded them.

#### Manipulation

The social factor was manipulated by contrasting two conditions: discussion group versus no-discussion group. In the no-discussion group condition, no opportunity was given for social interaction. In the discussion group condition, social interaction was facilitated by having the group members actively participate in group discussion for 15 min. The content of the discussion varied according to the two information conditions. In the condition of group discussion with high information sharing, the experimenter demonstrated to the group exactly how to fill out the checklist as part of an open group discussion. The topics discussed concerned clarification of task requirements, performance strategies, and methods for improving performance. All group members as well as
PARTICIPATIVE GOAL SETTING

593

specifications marked on the evaluation form by either "+", "-", or "0" within 30 min. Two additional scores were given for the sum of scores for each applicant.

Quality was measured by the percentage of correct performance, calculated by the following equation:

\[
\text{Total score} = \frac{\text{No. of errors}}{\text{Total score}} \times 100.
\]

This measure was not correlated with performance quantity \((r = .03)\). Incidental learning was measured by asking subjects at the end of the experiment to recall as many characteristics of the applicants as they could and write them down. It was decided to use the percentage of correct recall as a measure for incidental learning because total of items recalled is affected by performance quantity, which varied among subjects. Percentage of correct recall was calculated by the following equation:

\[
\text{Total items recalled} = \frac{\text{No. of errors}}{\text{Total items recalled}} \times 100.
\]

Errors included items inconsistent with the application forms.

**Attitudes.** Goal acceptance was measured by a three-item questionnaire, based on Latham and Steele (1983): (a) "Commitment to a goal means acceptance of it as your own personal goal and your determination to attain it. How committed were you to attaining the goal that was set?" (b) "How important was it to you to at least attain the goal that was set?" (c) "To what extent did you strive to attain the goal that was set?" Responses were rated on a 7-point Likert scale ranging from total rejection to total acceptance. Cronbach's \(\alpha = .83\).

Satisfaction was measured by two subscales of the Job Description Index (JDI; Smith, Kendall, & Hulin, 1969)—satisfaction with coworkers (16 items) and with work (15 items). Cronbach's \(\alpha = .86\) and \(\alpha = .78\), respectively.

Group commitment was measured by a 10-item questionnaire, eight of them adapted from the organizational commitment questionnaire of Mowday, Steers, and Porter (1979), and two from the union commitment questionnaire of Gordon, Philpot, Burt, Thompson, and Spiller (1980), with the reference frame converted from "organization" and "union" respectively to "your work group." Responses were again rated on a 7-point Likert type scale ranging from rejection to acceptance. Cronbach's \(\alpha = .69\).

**Procedure**

The experimenter opened the session with a general introduction and administered the forms to all participants. In the training stage, the subjects read the instructions on how to perform the task. Then, they, each in order to ascertain that they had understood the task requirements. In the practice stage, subjects checked the characteristics of as many applicants as they could within 10 min, with performance serving as an ability measure. In the next stage, the social factor of group discussion and the cognitive factor of information were manipulated: (a) Group discussion with detailed and task-relevant information, (b) Group discussion without task-relevant information, (c) Written instructions with relevant information, (d) Written instructions without relevant information. Following the first manipulation stage, subjects were asked to set personal goals for the number of applicants to be evaluated within 30 min, in order to increase the variance of accepting the goal. Then the factor of involvement in goal setting was manipulated: Subjects in the high-involvement conditions were asked to set group goals through discussion or by means of a secret
ballot. In the low-involvement conditions, the experimenter assigned the goal for the group members. Subjects were told that they had to attain the goal set by the group or assigned to them. Then, each subject rated his or her goal acceptance. Next followed the performance stage, in which subjects performed the task for 30 min. Upon its completion, they were tested for incidental learning. At the end of the experiment, subjects filled out questionnaires including items for the manipulation checks, attitudes, and biographical data. Finally they were debriefed.

Results

Manipulation Check

The manipulation effects of the three factors—involvement in goal-setting, group discussion, and information-sharing—were each measured by a two-item questionnaire. Using t tests to compare the high and low groups on each of the respective factors, the following effects were found: a significant effect of involvement in goal-setting, ($M_{HI} = 2.95$, $SD = 1.01$, $M_{LO} = 2.09$, $SD = 1.04$; $t = -4.62$, $p < .001$), and a significant effect of group discussion, ($M_{HI} = 1.95$, $SD = 0.90$, $M_{LO} = 1.35$, $SD = 0.54$; $t = -4.02$, $p < .001$). Yet the information manipulation failed to generate the expected difference in the perceptions of high- and low-information groups ($p > .05$). The same result occurred even when the two items were examined separately. However, despite the fact that subjects in the high- and low-information groups did not differ in their reports about information level, the information manipulation itself had a strong significant effect ($p < .001$) on performance quality, as will be reported later.

Performance. Hypotheses concerning performance were tested by MANOVA procedure for a three-way ANCOVA (analysis of covariance) to control for ability. Homogeneity of slopes of the covariate variable on the dependent variables was measured, and no significant differences ($p > .05$) between cells were found for all performance measures. The means and standard deviations for all performance measures are presented in Table 1.

Performance quantity. The three-way ANCOVAs demonstrated one significant main effect of group discussion ($p < .01$) on the total number of items performed and two significant main effects of group discussion ($p < .01$) and involvement in goal setting on the total number corrected for errors. No significant main effect of information, and no significant interaction effects were found. The three-way ANCOVAs are summarized in Table 2.

Performance quantity was higher in the high- than low-group-discussion condition, and performance quantity corrected for errors was higher in the high- rather than the low-group-discussion and involvement-in-goal-setting conditions. Thus, results support the first hypothesis, indicating that the social and motivational factors have a significant positive effect on performance quantity.

An additional post-hoc contrast analysis was conducted to test the effect of involvement in goal setting in conditions that are comparable to Latham et al.'s studies (Contrast 1: high vs. low involvement in goal setting with low discussion and low information and Contrast 2: high versus low involvement in goal setting, with low discussion across high and low information). Results demonstrated significant effects of involvement in goal setting on performance quantity corrected for errors, for both contrasts, Contrast 1, $F(1, 90) = 5.03$ $p < .05$, Contrast 2, $F(1, 90) = 3.92$, $p < .05$.

Performance quality. The means and standard deviations for the percentage of correct responses are presented in Table 1. The three-way ANCOVA summarized in Table 2 demonstrated

| Table 1 |
|---|---|---|---|---|---|---|---|---|
| | High involvement in goal-setting | | Low involvement in goal-setting | | | | |
| | High group discussion | Low group discussion | High group discussion | Low group discussion | High group discussion | Low group discussion |
| Performance quantity | 247.08 | 232.08 | 185.42 | 213.85 | 179.45 | 206.17 |
| Observed mean | 131.68 | 71.12 | 62.32 | 68.62 | 60.61 | 61.34 |
| $SD$ | 266.78 | 233.08 | 192.20 | 185.25 | 205.58 | 199.61 |
| Adjusted mean | Performance quality corrected for errors | 214.85 | 179.54 | 155.25 | 171.92 | 148.00 | 157.00 |
| Observed mean | 119.63 | 42.72 | 57.40 | 52.19 | 52.60 | 45.85 |
| $SD$ | 200.11 | 182.19 | 159.51 | 150.06 | 163.11 | 156.86 |
| Adjusted mean | Performance quality | 86.42 | 79.11 | 83.34 | 80.73 | 82.13 | 76.13 |
| Observed mean | 3.78 | 8.93 | 5.24 | 3.61 | 5.96 | 5.16 |
| $SD$ | 85.84 | 79.13 | 83.14 | 80.04 | 81.78 | 77.35 |
| Adjusted mean | Incidental learning | 96.72 | 85.11 | 59.87 | 78.58 | 82.40 | 79.48 |
| $M$ | 37.04 | 50.58 | 38.84 | 36.58 | 29.18 | 28.32 |
| $SD$ | Note. Info. = information. | 59.43 | 105.0 | 43.69 | 61.16 | 59.43 | 105.0 |

Performance quality.
### Table 2

Three-Way Covariance Analyses for Performance Measures

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>Total performance quantity</th>
<th>Performance quantity corrected for errors</th>
<th>% correct performance quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MS</td>
<td>F(1, 90)</td>
<td>MS</td>
</tr>
<tr>
<td>Regression</td>
<td>189,433.20</td>
<td>51.31***</td>
<td>94,087.55</td>
</tr>
<tr>
<td>Linear</td>
<td>17,435.87</td>
<td>4.72*</td>
<td>37,551.52</td>
</tr>
<tr>
<td>Engagement in goal-setting</td>
<td>12,294.78</td>
<td>3.33</td>
<td>17,087.90</td>
</tr>
<tr>
<td>Group discussion</td>
<td>31,909.30</td>
<td>8.64***</td>
<td>27,472.60</td>
</tr>
<tr>
<td>Involvement in goal setting</td>
<td>300.24</td>
<td>0.08</td>
<td>5,140.11</td>
</tr>
<tr>
<td>Group discussion by information</td>
<td>743.08</td>
<td>0.20</td>
<td>346.39</td>
</tr>
<tr>
<td>Involvement in goal setting by information</td>
<td>260.49</td>
<td>0.07</td>
<td>6.92</td>
</tr>
<tr>
<td>Group discussion by information</td>
<td>345.81</td>
<td>0.09</td>
<td>85.71</td>
</tr>
<tr>
<td>Group discussion by information</td>
<td>204.12</td>
<td>0.06</td>
<td>915.87</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001.

Positive and significant main effects of information (p < .001) and involvement in goal setting (p < .004) and a significant (p < .032) three-way interaction effect of information by involvement in goal setting by group discussion on performance quality. A post hoc comparison among means was conducted using a Scheffé test (Keppel, 1973). The analysis documented that subjects in the combination of low discussion, involvement, and low information performed significantly better than all other high-information conditions—in comparison to high information, high involvement, high group discussion, F(1, 90) = 31.83, p < .001; in comparison to high information, high group discussion, and low involvement, F(1, 90) = 5.30, p < .01.

**Quantity-quality relationships.** No correlation was found between performance quantity and quality (r = .03) when the sample was examined as a group. On the other hand, a significant and significant correlation between quantity and quality was found for subjects with high information (r = .23, p < .05), and no significant correlation was shown for subjects with low information (r = -.07).

**Incidental learning.** The means and standard deviations of recall are presented in Table 1. A three-way ANOVA demonstrated one significant main effect of group discussion, F(1, 97) = 5.50, p < .05. The percentage of correct recall was higher in the high- rather than low-group discussion conditions, as hypothesized.

**Attitudes.** The means and standard deviations of all the attitude measures are presented in Table 3. Hypotheses concerning attitudes were tested using a series of three-way ANOVAs.

**Goal acceptance.** The results of the three-way ANOVA demonstrated two significant main effects, involvement in goal setting (MS = 15.20), F(1, 97) = 7.65 p < .01, and group discussion (MS = 9.42), F(1, 97) = 4.74, p < .05, on goal acceptance, significant interaction effect of these two variables (MS = 7.98), F(1, 97) = 3.56, p < .01. Goal acceptance was higher in the higher- rather than low-involvement and group-discussion conditions. Information had no significant effect (p > .05) on goal acceptance, as was expected. The post hoc analysis of the interaction effect using the Scheffé test demonstrated that goal acceptance was significantly higher for the high involvement/high group discussion condition than for any of the other conditions, F(3, 95) = 5.94, p < .001.

**Group commitment.** The three-way ANOVA demonstrated a positive and significant main effect of group discussion (MS = 19.27), F(1, 97) = 13.37, p < .000. The two other factors had no significant effect (p > .05) on group commitment.

**Satisfaction.** The three-way ANOVAS demonstrated significant main effects of group discussion (MS = 6.18), F(1, 97) = 9.37, p < .01, and of involvement in goal setting (MS = 3.14), F(1, 97) = 4.76, p < .05, on co-worker satisfaction. Co-worker satisfaction was higher for the high-level conditions than their counterparts. As predicted, there was no significant effect of information on co-worker satisfaction. Work satisfaction was not significantly affected by any of the experimental manipulations.

**Discussion**

The present study demonstrates that the three components of participation in goal-setting can be successfully separated and their single effects on performance can be tested. The social factor of group discussion had a significant effect on almost all performance and attitude measures, except for the quality measure: Performance quantity, incidental learning, goal acceptance, group commitment and satisfaction, were significantly higher for subjects who participated in group discussions than for the others.

Previous studies have indicated a trade off between the performance of a focal goal and incidental learning. The present findings suggest that sociopsychological group processes enhance the general level of motivation to allocate a greater amount of resources to the task or actually create additional resources as reflected in the incidental learning.

The group setting seems to be an important factor in enhanc-
ing the effect of participation on performance. The setting of dyadic rather than group relationship in research of Latham et al., might have led to the nonsignificant effect for participation. It is worthwhile to compare the effect of group versus dyadic participation within the same research.

The motivational factor of involvement in goal setting significantly affected both performance quantity and quality, and work attitudes. Its wide impact on both attitudes and performance measures corroborates motivational theories emphasizing goal acceptance and self-control as central motivational factors (Bandura, 1977, 1982; deCharmes, 1968; Deci, 1975, 1980).

Unlike previous studies by Latham et al., the present findings indicated that involvement in setting the goal had a significant effect on performance even though the level of goal difficulty was held constant. Three explanations might be offered for these differences: (a) Involvement in goal-setting significantly \( p < .05 \) affected goal acceptance in the present study, whereas Latham et al.'s studies showed high levels of goal acceptance with no significant differences between the participation and the nonparticipation conditions (Dossett et al., 1979; Latham & Sarri, 1979b; Latham et al., 1982; Latham & Marshall, 1982, Latham & Steele, 1983). The findings implicitly support the two-step model of participation postulating that participation affects performance only if it affects goal acceptance (Coch & French, 1948; Erez, Earley, & Hulin, 1985; French, Kay, & Meyer, 1966).

In the present study, involvement in goal setting took place in groups rather than dyadic settings. It may suggest that the social factor is important for facilitating the motivational effect of involvement in goal setting.

The present study differs from Latham et al.'s studies in its cultural context. Latham’s studies were conducted in North America where the values are strongly individualistic, whereas the present study was conducted in Israel where the values are strongly collectivistic (Hofstede, 1980). It remains to be tested whether the differences in the effectiveness of the participative strategies in the above studies stem from the differences in the manipulation (group versus dyadic participation) or whether it stems from the differences in the socio-cultural context.

The cognitive factor of information was found to have a significantly positive effect on performance quality but not on performance quantity. This result supports the research hypothesis postulating that cognitive information can specifically improve performance quality. Yet the differential effect of information on performance quality versus quantity may be limited to the specific performance measures and to the type of information given to participants in the present study. Information may have had a significant effect on performance quantity if it were specifically directed to increasing quantity.

It should be noted that although information itself had a significant effect on performance quality, the perceived amount and usefulness of information was not significantly different for the high- versus low-information conditions. It may be that participants' perceptions of the amount and usefulness of information were not affected because they had no reference point with which to compare. That is, subjects in each group did not know the amount and type of information varied across conditions.

Quality measures of performance were rarely used in previous studies, and even when in use, they were not pure quality measures but rather quantity measures corrected for errors. The present study controls for the quantity factor by using the percentage of correct responses as a measure of quality. A very high correlation \( r = .96 \) was presented between the quantity measure of total responses and the quantity measure corrected for errors. By contrast, the correlation between the quantity and the quality measures was not significant \( r = .03 \). It is recommended that the percentage of correct responses be retained as a quality measure.

Previous studies assumed a trade off between quantity and quality because they compete for the same resources. However, the present study suggests that both quantity and quality can be

<table>
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<tr>
<th>Measure</th>
<th>High involvement in goal-setting</th>
<th>Low involvement in goal-setting</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>High group discussion</td>
<td>Low group discussion</td>
</tr>
<tr>
<td></td>
<td>High info.</td>
<td>Low info.</td>
</tr>
<tr>
<td></td>
<td>5.59</td>
<td>5.79</td>
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<tr>
<td>Goal acceptance</td>
<td>0.71</td>
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<tr>
<td>Group commitment</td>
<td>3.58</td>
<td>5.18</td>
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<tr>
<td></td>
<td>2.01</td>
<td>1.03</td>
</tr>
<tr>
<td>Co-workers satisfaction</td>
<td>4.06</td>
<td>4.36</td>
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<tr>
<td></td>
<td>1.56</td>
<td>1.49</td>
</tr>
<tr>
<td>Work satisfaction</td>
<td>4.39</td>
<td>4.21</td>
</tr>
<tr>
<td></td>
<td>0.83</td>
<td>0.74</td>
</tr>
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<td></td>
<td>3.79</td>
<td>3.16</td>
</tr>
<tr>
<td></td>
<td>1.72</td>
<td>2.30</td>
</tr>
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Note. Info. = information.
PARTICIPATIVE GOAL SETTING

597


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