

**Employee and Supervisor Ratings of Motivation:  
Main Effects and Discrepancies Associated  
with Job Satisfaction and Adjustment  
in a Factory Setting<sup>1</sup>**

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Research and theory on employee job satisfaction and well-being has increasingly concentrated on both intrinsic and extrinsic motivational factors. According to self-determination theory (Deci & Ryan, 1985), autonomy, relatedness, and competence are three intrinsic psychological needs that, if fulfilled in the workplace, will lead to greater satisfaction, performance, and general well-being. This study examines employee and supervisor perceptions of the employee's autonomy, competence, and relatedness in the workplace, as well as the degree and direction of discrepancies between employee and supervisor reports. Both employee and supervisor ratings of intrinsic motivational factors were significantly related to work satisfaction, psychological health, and self-esteem, after controlling for the extrinsic factors of pay and job status. Results of discrepancy analyses were somewhat supportive of overrating being associated with greater well-being and job satisfaction. Discussion of the results ties this study to relevant research from a self-determination perspective and to the growing literature on discrepancies and self-perception.

Early research on job satisfaction and workers' attitudes was based on the premise that satisfied workers would be motivated to perform effectively (e.g., Roethlisberger & Dickson, 1939). The antecedents of job satisfaction were thus studied in the expectation that manipulation of such factors would ultimately lead to higher productivity. Reviews of job satisfaction (Brayfield & Crockett, 1955; Schwab & Cummings, 1970; Vroom, 1964), however, indicate that, although high job satisfaction is reliably related to low employee turnover and absenteeism (e.g., Mobley, 1977; Mutchinsky, 1977; Ross &

Zander, 1957; Steers & Rhodes, 1978), it is typically only modestly and/or indirectly related to job performance.

This lack of a clear relationship between satisfaction and performance led to increased interest in other correlates of job satisfaction, such as enhanced personal adjustment and health (Deci & Ryan, 1985; Lawler, 1982; McGregor, 1960). Some evidence indicates that high perceived control over work-related outcomes is related to low levels of physical symptoms (Burke, 1969; Chadwick-Jones, 1970; Palmer, 1969; Spector, 1986) and that high satisfaction is associated with fewer on-the-job accidents (Vroom, 1964), though these issues have still not been extensively researched. Several motivational frameworks have been used to conceptually examine these issues (Herzberg, Mausner, & Snyderman, 1959; Porter & Lawler, 1968; Vroom, 1964; Vroom & Deci, 1992), all assuming essentially that higher levels of motivation, resulting from the opportunities to satisfy important psychological needs in the workplace, will result in positive work-related behaviors, job-related attitudes, and general well-being.

More recently, self-determination theory (Deci & Ryan, 1985) suggests that individuals in a given social context will be more self-motivated and experience greater well-being to the extent that they feel competent, autonomous (or self-determined), and related (or connected) to others. If an individual's job provides these nutrients then the theory would predict that the person will be more likely to evidence greater task enjoyment, general job satisfaction, and psychological adjustment. Opportunities to experience autonomy, competence, and relatedness on the job also promote an internal perceived locus of causality (deCharms, 1968) for behavior and thus can yield a high degree of self-motivation and commitment (Deci & Ryan, 1985).

Several extensive reviews of both experimental and field studies support this conceptual framework (e.g., Deci & Ryan, 1987, 1991; Ryan, 1993; Ryan & Stiller, 1991). They have shown, for example, that autonomy-supportive (as opposed to controlling) settings promote the experience of self-determination, resulting in increased intrinsic motivation (e.g., Plant & Ryan, 1985; Ryan, Mims, & Koestner, 1983), improved problem solving and learning (Benware & Deci, 1984; Grolnick & Ryan, 1987), and enhanced self-esteem and well-being (e.g., Grolnick & Ryan, 1989; Ryan & Grolnick, 1986). In addition, experiences of relatedness have also been found to promote motivation and subjective well-being (Ryan, Stiller, & Lynch, 1991).

Furthermore, research in organizational settings has shown that self-determination theory (Deci & Ryan, 1985) is directly applicable to the workplace. For example, an intervention based on the theory was implemented with managers and subordinates in a major corporation (Deci, Connell, & Ryan, 1989). The intervention focused on teaching managers to show greater support for employees' self-determination by considering the subordinates'

<sup>1</sup>The authors gratefully acknowledge participants in Ilardi's spring 1990 seminar on Group Dynamics in Organizational Settings who assisted in data collection, and the invaluable help of the employees and management in the upstate New York shoe factory where the data were gathered. The authors also wish to acknowledge Ed Deci, Elizabeth Whitehead, and other members of the Motivation Research Group at Rochester who made contributions. Funding was provided by a faculty research grant from the University of Rochester and by grants from NICHD (HD19914) and NIMH (MH18922) to the Motivation Research Group.

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frame of reference, providing informational feedback, minimizing the use of controls, and acknowledging subordinates' feelings. Evaluations of the program showed that managers' orientations did change toward greater support for self-determination in the work place, and such changes were subsequently associated with subordinates having more positive perceptions of the work climate and improved work attitudes. In a second study from the self-determination perspective, Kasser, Davey, and Ryan (1992) examined the work motivation of chronic psychiatric patients in a vocational rehabilitation setting. They assessed the degree to which workers experienced autonomy, competence, and relatedness on the job, finding that employees who rated themselves, or were rated by their supervisors, as higher on these dimensions evidenced greater work participation and performance.

The present study extends this line of research by examining worker perceptions of competence, autonomy, and relatedness in a factory setting. Specifically, we will examine whether workers' experiences of autonomy, relatedness, and competence in a factory milieu are related not only to overall job satisfaction, but also to self-esteem and mental health. In order to assess the unique contribution of these motivational variables to satisfaction and mental health outcomes, all analyses will control for the influence of the extrinsic variables of job status and pay.

Another interest of this study concerns the ramifications of the level of agreement of employees and their supervisors concerning the employee's motivation. A growing literature suggests that discrepancies may constitute useful information about the employee and about the employee-supervisor relationship. Disagreement between employees and their supervisors on motivation and performance ratings is relatively common—a meta-analysis by Harris and Schaubroeck (1988) revealed that typically only a modest correlation exists. This employee-supervisor discrepancy is often viewed as a sign that persons are not "accurate" in their self-perceptions, and the disagreement could be seen as a reflection of the accuracy with which employees perceive the feedback they receive. However, some researchers (e.g., Baird, 1977) suggest that discrepancies may be useful in predicting outcomes for the employee. For instance, discrepancies may tell something about self-motivating strategies on the part of employees, or about lack of ability to "connect" with employees on the part of supervisors. At the very least, discrepancies carry information about perceptions of the self and the work environment. For example, Kasser et al. (1992) found that large discrepancies between psychiatric patients' ratings of motivation and those of their supervisor were associated with lower participation, poorer performance, and lower social adjustment.

Other research has examined the relationships between discrepancies and various outcomes in educational settings. Connell and Ilardi (1987) explored discrepancies between self-perceptions of competence and either teacher

appraisals or objective test scores for fourth through sixth graders. They found that children who overrated their own competence were more anxious and had lower self-esteem than underraters. Ilardi, Assor, and Lin (1992) detected differences in performance outcomes for high-school students whose self-ratings were discrepant from objective test scores and from parent ratings of competence. Phillips (1984, 1987) studied children who were highly competent and who underrated their own performance, theorizing that under-ratings of competence could serve as a self-protective strategy. She found that children who underrated their own performance held very low expectations for success, were anxious about performance evaluations, believed that significant adults did not think highly of their abilities, and did not persist in tasks. Taylor (1989) theorized that "positive illusions" (e.g., overrating) can have beneficial mental health and self-esteem outcomes, as well as performance outcomes, and Baumeister (1989) has noted that there may be an optimal margin for such discrepancies (maximum benefits occurring within that margin). Assor, Tzelgov, Thein, Ilardi, and Connell (1990) presented data from elementary-school children that provide some support for this view for overrating.

On the basis of this literature, it is obvious that the relationship of discrepancies between employees' and supervisors' motivation-relevant ratings to employees' mental health and job satisfaction will be a complex one. Nonetheless, it seems that overrating by employees relative to their supervisors will generally be associated with more positive outcomes. Therefore, in addition to examining the relation of employees' experience of autonomy, competence, and relatedness to job satisfaction and psychological adjustment, we will examine the relation of discrepancies in reports of the employees' motivation to these outcome measures.

Specific hypotheses are tested concerning both motivation and discrepancies. We predict that: (a) after controlling for the extrinsic motivational factors of pay and job status, individuals who rate themselves as experiencing more competence, autonomy, and relatedness in the work setting (or individuals who are rated by their supervisors as such) will show higher levels of general job satisfaction, mental health, and self-esteem; and (b) individuals whose self-ratings on motivational factors are higher than those of their supervisors (i.e., overraters) will show higher levels of job satisfaction, mental health, and self-esteem than those whose self-ratings are lower than those of their supervisors (i.e., underraters).

## Methods

### Subjects

Subjects were 117 employees of a rural shoe factory located in western

New York. The total sample consisted of 76.7% men and 90.5% Caucasians; 82.9% of the sample had graduated from high school and 5.2% had completed four years of college. The ages ranged from 18 to 60, with a mean of 35.

### Procedures

Management permitted questionnaire administration during normal work hours with no penalties to employees. Throughout the day, groups of 6 to 8 employees were excused from their work stations and led to a nearby table where a member of the research team briefed them about the purpose of the study. If they agreed to participate, they were asked to sign a consent form with the understanding that they could withdraw from the study at any time. Participants then completed the questionnaires while the researcher remained to answer any questions. Employees who participated in the study were entered into a raffle for a grand prize worth \$200.00 and one of two smaller prizes consisting of restaurant certificates.

### Measures

The *Job Descriptive Index (JDI)* (Smith, Kendall, & Hulin, 1969) is a measure of job satisfaction pertaining to six aspects of work. Two of the six subscales were used: satisfaction with the type of work performed and an overall job satisfaction scale, which was added in 1985. Satisfaction is assessed by the respondent indicating whether an adjective or phrase applies to a particular facet of his or her job. If the word applies, the respondent records a "Y" (for Yes). If the word does not apply, he or she records an "N" (for No). If the respondent cannot decide, he or she enters a question mark ("?"). Scores were then weighted (3 for each "Y" response, 0 for each "N" response, and 1 for each omission or question mark) following the suggestions of Smith et al. (1969). A composite satisfaction score for each of the two subscales was formed by summing the respective weights after reversing negatively scored items. The JDI is widely used in the job satisfaction literature (Price, 1977; Robinson, Athanasiou, & Head, 1969; Schreisheim & Kinicki, 1981). Johnson, Smith, and Tucker (1982) reported 3-week test-retest reliabilities for the subscales ranging from .68 to .88, and internal consistency reliabilities from .75 to .93.

The *General Health Questionnaire (GHQ)* (Goldberg & Hillier, 1979) is a 28-item instrument that detects the presence of four nonpsychotic psychiatric disorders: somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. Factor analyses support the construction of the scale. Respondents report on a 4-point Likert scale how frequently over the past few weeks they have experienced particular symptoms related to

their physiological and psychological functioning (e.g., "been getting pain in your head," "felt that life is entirely hopeless"). Scores for each subscale were derived by summing the answers to the respective questions. A total score was derived by summing subscale scores such that a high score reflects a greater frequency of symptoms. Reliabilities for the GHQ based on a 6-month test-retest interval have ranged from .51 to .90. Concurrent validity for each of the subscales has been obtained with independent psychiatric assessments using the Clinical Interview Schedule (Goldberg, Cooper, Eastwood, Kedward, & Shepard, 1970), with correlations ranging from .51 to .76.

The *Self-Esteem Inventory* (Rosenberg, 1965) is a semantic differential scale used to measure global feelings of self-worth. Respondents are asked to rate, on a Guttman scale, how strongly they agree or disagree with statements regarding feelings about themselves (e.g., "at times I think I am no good at all"). Composite scores were generated so that higher scores indicated greater self-esteem. Rosenberg reported a coefficient of scalability of .72 for a sample of high school students. Scale validity has been demonstrated by showing significant associations with such factors as depression, depressive affect, psychosomatic symptoms, and being chosen by classmates as a leader (Robinson, Shaver, & Wrightsman, 1991).

The *Work Motivation Form-Employee (WMF-E)* (Kasser et al., 1992) consists of 15 items rated on a 5-point Likert-type scale designed to tap workers' experience of autonomy, relatedness, and competence on the job. Some of the items were adapted from the Intrinsic Motivation Inventory, which has documented construct validity (Ryan, 1982) and a well-developed factor structure (McAuley, Duncan, & Tannen, 1987). Supervisors were asked to complete the *Work Motivation Form-Supervisor (WMF-S)* for each of their subordinates. This measure is comparable to the WMF-E in all respects except that it asks the supervisor to rate how the employee experiences his or her job along these motivational dimensions.

The WMF-E measures employees' perceptions of the extent to which they experience three motivating factors on their current job: autonomy (six items, e.g., "Do you work because the work is important to you?"), relatedness (three items, e.g., "How much do you consider the people you work with to be your friends?"), and competence (three items, e.g., "How difficult is work for you?"). The WMF-S asks supervisors to rate how they believe the employee feels about his or her work, for example, "(Employee) works because the work is important to him/her." For each employee, a total score was computed for the WMF-E and for the WMF-S by averaging the composite scores of the autonomy, relatedness, and competence subscales. Kasser et al. (1992) reported internal consistency for the WMF-E of .79 and

		Supervisor		
		Low	Medium	High
Employee	Cell	1	4	7
	Low n	17	9	11
	%	14.5%	7.7%	9.4%
	Cell	2	5	8
	Medium n	16	16	10
	%	13.7%	13.7%	8.5%
	Cell	3	6	9
	High n	6	13	19
	%	5.1%	11.1%	16.2%

Figure 1. Cell numbering sequence for discrepancies between employee and supervisor ratings on the Work Motivation Form.

for the WMF-S of .87. Williams, Krusch, Papciak, and Ryan (1992) also used the WMF-E to measure motivation to return to work for chronic back pain patients. Internal consistency of the total score was again high ( $\alpha = .85$ ).

### Discrepancies

In order to analyze employee/supervisor discrepancies, we employed a method presented in Assor et al. (1990). Scores for the WMF-E and for the WMF-S were divided into three levels so that approximately 33% of the scores on each form fell into either a high, moderate, or low category. A 3 × 3 matrix was then formed so that low, medium, and high scores for the WMF-S formed the rows, and low, medium, and high scores for the WMF-E formed the columns. In this way, one can examine discrepancies for different levels of motivators, and one can also pool across different levels of motivators. Cells were then numbered from top to bottom, starting with Cell 1 in the upper left hand corner. As can be seen in Figure 1, cells along the diagonal from upper left to lower right (Cells 1, 5, and 9) represent congruent ratings. Cells one away from the diagonal (Cells 2, 4, 6, and 8) represent moderate over- or under-rating, and cells two away from the diagonal represent extreme over- or under-rating (Cells 3 and 7). Some analyses then compared congruent raters (1, 5, 9) to discrepant raters (2, 3, 4, 6, 7, 8) capitalizing on the

increase in power from the pooling of like cells. Similarly, there are two moderate discrepancy cells for overraters and two for underraters, and these were also pooled for some analyses.

### Extrinsic Motivators

Measures of employee's job status and level of pay were also collected. For job status, each employee was asked to indicate his or her current job title, which fell into one of five levels of the organizational hierarchy. They included: (a) management,  $N = 30$  (manager, officer, foreman, accountant); (b) administration,  $N = 10$  (order taker, credit department, secretary); (c) skilled workers,  $N = 57$  (craftsman, sewer, bottomer); (d) semi-skilled workers,  $N = 15$  (leather cutter); and (e) unskilled workers,  $N = 5$  (maintenance, janitorial, shipping room, lining cutter). Weekly salaries were examined for those employees who gave written consent ( $n = 87$ ). Hence, all analyses using pay as a variable are derived from the subsample of 87. Otherwise, the analyses include the total employee sample of 117.

### Results

In order to test the first hypothesis that intrinsic motivators would relate positively to job satisfaction, adjustment, and self-esteem, eight regression analyses were conducted. In each, the two extrinsic variables (job status and pay) were simultaneously entered at Step 1. Then scores from either the WMF-E or WMF-S were entered at Step 2 so as to assess their unique contributions after controlling for the extrinsic variables.

Results are reported in Table 1. Regarding general job satisfaction, job title was significantly positively related to this measure, such that individuals higher in the company hierarchy reported greater general job satisfaction. Pay was not related to general job satisfaction in this sample. Both employee and supervisor motivation ratings were positively and significantly related to general job satisfaction. Entering the employee rating of motivation increased the amount of variance explained by almost 20%, whereas supervisor ratings of motivation increased the amount of variance by 7%.

The same three variables, job title, WMF-E, and WMF-S, were also significantly associated with satisfaction with the work task. Employee ratings increased the amount of variance over 26%, and supervisor ratings increased it almost 12%. Again, individuals higher in the company hierarchy and those who rated themselves or were rated by their supervisors as more highly motivated reported greater work satisfaction.

Table 1 also presents regressions predicting employee self-esteem and mental health. Extrinsic variables did not significantly relate to these out-

Table 1

*Regression Analyses of Extrinsic and Motivational Factors in the Prediction of Work Satisfaction, Self-Esteem, and Mental Health*

	Satisfaction with job in general			Satisfaction with work on the job		
	$R^2$	$\Delta R^2$	$F$	$R^2$	$\Delta R^2$	$F$
1. Job title			8.50**			7.77**
Pay	.10	.10		.09	.09	
2. WMF-E	.30	.20	23.51***	.35	.16	33.55***
2. WMF-S	.17	.07	7.04**	.21	.12	12.33***

  

	Self-esteem			GHQ		
	$R^2$	$\Delta R^2$	$F$	$R^2$	$\Delta R^2$	$F$
1. Job title			.22			1.87
Pay	.06	.06		.02	.02	
2. WMF-E	.20	.14	14.51**	.08	.06	5.42*
2. WMF-S	.11	.05	4.96*	.07	.05	4.00*

<sup>+</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

comes, although pay was marginally associated with self-esteem. Both the WMF-E and WMF-S variables made significant increments to the variance accounted for in self-esteem, with changes of 14% and 5%, respectively. Both these motivational variables were also related to general mental health. Employee-rated motivation increased the amount of variance accounted for in the GHQ by 6%, and supervisor-rated motivation increased it by 4.5%. In both cases, higher ratings of motivation were associated with greater mental health.

Next we examined whether the three subscales of the WMF-E were differentially related to the dependent variables. Regressions were performed in which the two extrinsic factors and the three subscale scores were simultaneously entered into the equation. Autonomy was significantly associated

with three of the outcomes: general satisfaction,  $F(1, 81) = 15.92, p < .001$ , satisfaction with the work task,  $F(1, 81) = 43.96, p < .001$ , and general mental health,  $F(1, 81) = 8.82, p < .01$ . Relatedness approached a significance for general job satisfaction,  $F(1, 81) = 3.78, p = .07$ , while competence was significantly associated with self-esteem,  $F(1, 81) = 17.14, p < .001$ .

A number of analyses were next conducted to determine whether agreement between supervisor and employee ratings of motivation was related to the latter's job satisfaction, self-esteem, and mental health. Overall, the employee and supervisor ratings on the WMF were significantly positively correlated,  $r = .27, p < .01$ . Although this relationship was rather low, it is consistent with earlier studies (Harris & Schaubroeck, 1988). A series of analyses of variance were next run comparing various types of discrepant individuals. These results are reported in Table 2.

Of initial interest was whether discrepancy per se was associated with the outcome variables. In other words, does disagreement with supervisor, no matter what the direction, relate to work and well-being outcomes? Therefore, congruent raters (Cells 1, 5, and 9 from Figure 1) were compared to inaccurate or discrepant self-raters (Cells 2, 3, 4, 6, 7, and 8). No significant differences were obtained on any of the dependent variables. Previous research (Assor et al., 1990; Connell & Ilardi, 1987; Ilardi et al., 1992) suggests that the direction of discrepancy predicts different outcomes; therefore overraters (Cells 2, 3 and 6), underraters (Cells 4, 7, and 8), and congruent raters (Cells 1, 5, and 9) were compared on the four dependent variables. One result approached significance. Overraters reported the highest general job satisfaction, followed by congruent raters, then underraters,  $F(2, 114) = 2.59, p = .08$ . If we focus only on the comparison between overraters (Cells 2, 3 and 6) and underraters (Cells 4, 7, and 8), then, additionally, overraters report significantly higher general job satisfaction,  $F(1, 63) = 5.41, p = .02$ , and marginally higher satisfaction with the work task,  $F(1, 63) = 3.02, p = .09$ , than underraters.

In addition to a simple comparison between over- and underraters, the groups as defined in this study enable more subtle comparisons within and across discrepancy groups. That is, moderate and extreme over- and underraters may be compared. Evidence from prior research (Assor et al., 1990; Connell & Ilardi, 1987; Kasser et al., 1992) suggests that magnitude of discrepancy may be an important variable, although the evidence is sometimes conflicting. Four separate comparisons were made. First, moderate and extreme overraters were compared, resulting in no significant differences (all  $ps > .18$ ). Similar findings were obtained for the second set of analyses comparing moderate and extreme underraters (all  $ps > .31$ ). Third, moderate overraters (Cells 2 and 6) were compared with moderate underraters



Table 2

*Means and Standard Deviations for Discrepancy Groups*

	Satisfaction with job in general	Satisfaction with work on the job	Self-esteem	GHQ
Inaccurate raters ( <i>N</i> = 65)	39.2 (9.6)	26.3 (10.9)	32.4 (4.7)	38.5 (7.6)
Congruent raters ( <i>N</i> = 52)	37.3 (12.0)	25.9 (11.6)	31.4 (5.2)	38.5 (6.8)
Underraters ( <i>N</i> = 30)	36.4 (8.9)	3.9 (9.6)	31.4 (4.9)	39.0 (5.9)
Overraters ( <i>N</i> = 35)	41.7 (9.5)	28.5 (11.7)	33.2 (4.4)	38.0 (8.9)
Moderate underraters ( <i>N</i> = 19)	37.0 (8.7)	25.1 (8.3)	31.7 (5.0)	38.2 (6.1)
Moderate overraters ( <i>N</i> = 29)	40.7 (10.1)	27.6 (11.8)	33.1 (4.1)	38.7 (9.6)
Extreme underraters ( <i>N</i> = 11)	35.3 (9.5)	21.7 (11.7)	31.0 (4.9)	40.5 (5.4)
Extreme overraters ( <i>N</i> = 6)	46.5 (2.7)	32.8 (10.6)	33.3 (6.3)	34.8 (1.2)

(Cells 4 and 8). Nonsignificant differences were obtained for all dependent variables (all  $ps > .20$ ). Lastly, the comparison of extreme overraters (Cell 3) with extreme underraters (Cell 7), resulted in a significant difference on general job satisfaction,  $F(1, 15) = 7.78, p = .01$ , and a marginal difference on satisfaction with the work task,  $F(1, 15) = 3.72, p = .07$ . In both cases, extreme overraters reported greater work satisfaction. Although no significant differences between the groups were evident for self-esteem, extreme overraters scored lower on the GHQ,  $F(1, 15) = 6.06, p = .03$ . Supplementary analyses examining specific subscales of the GHQ revealed that, in comparison to extreme underraters, extreme overraters reported significantly lower levels of anxiety (Over mean = 1.42,  $SD = .14$ ; Under mean = 1.8,  $SD = .38$ ;  $F(1, 15) = 5.19, p = .04$ ) and social dysfunction (Over

mean = 1.64,  $SD = .20$ ; Under mean = 1.99,  $SD = .22$ ;  $F(1, 15) = 10.43, p = .01$ ) and marginally lower levels of depression (Over mean = 1.06,  $SD = .09$ ; Under mean = 1.32,  $SD = .33$ ;  $F(1, 15) = 3.59, p = .08$ ).

## Discussion

This study examined whether factory workers experiences of autonomy, competence, and relatedness on the job were related to overall job satisfaction and to aspects of personal adjustment and mental health. A further focus was on the effects of discrepancies between worker and supervisor ratings of motivational variables on worker satisfaction and psychological adjustment.

The results generally supported hypotheses regarding the relationship between experiences of autonomy, competence, and relatedness on the job and general job satisfaction, satisfaction with the particular task, self-esteem, and mental health. Whether reported by employee or supervisor, the degree to which the employee was perceived as experiencing autonomy, competence, and relatedness at work was associated with both greater job satisfaction and personal well-being. Analyses of the WMF subscale scores for the employee suggested, more specifically, that the experience of autonomy on the job was particularly salient, being positively and significantly associated with mental health, and both general job and work task satisfaction. This is particularly noteworthy given the factory context of this study, where one might assume that the constraints on autonomy in the workplace are relatively strong compared to many work settings where opportunities for personal initiative and input may be more pervasive. In addition, perceived competence uniquely predicted self-esteem. Our findings relating the fulfillment of these intrinsic psychological needs to job satisfaction and mental health thus add to the growing evidence supporting the relevance of self-determination theory to the work domain. This perspective suggests that when managers attend to workers' experiences of autonomy, competence, and relatedness in the work setting, employee motivation will likely be enhanced (Deci et al., 1989), which in turn can result in higher levels of task performance and persistence (Kasser et al., 1992), job satisfaction, and better psychological adjustment.

With respect to the hypothesis relating discrepancies between employee and supervisor ratings of motivation to employee satisfaction and psychological adjustment, the results were not as strong as expected. Comparisons between congruent and discrepant raters showed only one significant difference, for self-esteem, with discrepant raters being higher. Additionally, comparisons between over- and underraters on job and task satisfaction were in the predicted direction, with overraters showing significantly higher

general satisfaction and marginally higher satisfaction with specific job tasks. Differences between over- and underrating were especially evident for extreme groups, with extreme underrating associated with lower job satisfaction and poorer well-being, consistent with the results of earlier studies (Assor et al., 1990; Ilardi et al., 1992). Because these results rely on cells with very small sample sizes, replication is warranted. Nonetheless, these results lend some support to recent theoretical formulations suggesting that discrepancies between self and other ratings, whether of objective performances or of psychological experiences, are not simply a question of accurate versus inaccurate perceptions. Rather, they can be related to clearly different outcomes in widely varying samples and settings.

A noteworthy limitation of the present study is its correlational approach and the fact that all data were collected at one point in time. Causal relationships between variables can thus only be inferred. In particular the relationship between autonomy, competence, and relatedness on the job and self-esteem and mental health may not be a simple one. In fact, it is highly likely that this association reflects a reciprocal causality in which those employees who do not experience these needs being met in the workplace may develop a poorer self-image and adjustment pattern, whereas those employees with poorer pre-morbid adjustment are prone to derive less of these intrinsic fulfillments at work or elsewhere. Other limiting factors include the small range of outcomes assessed, the use of self-report for assessing adjustment outcomes, and the small sample which constrained the power particularly of the discrepancy analyses.

A central point of self-determination theory is that people work not only for extrinsic rewards, but also to fulfill psychological needs such as those for autonomy, competence, and relatedness. When work settings allow employees to have positive experiences in relation to these needs, motivation is enhanced and workers feel better and are more satisfied with the jobs at which they spend major portions of their lives. This research shows that even in the context of a factory setting the degree to which work satisfies intrinsic psychological needs contributes over and above the issues of pay and status in determining an employee's satisfaction and well-being. More generally, the present findings support the view that the conditions of work and one's well-being are interconnected, and that a focus on intrinsic psychological needs in work settings can contribute to an understanding of individuals' adjustment and satisfaction in life.

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