IN-DEPTH REVIEW

Work, psychological well-being and performance

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Evidence is reviewed on work performance as a consequence of both psychological well-being and work stressors. There is evidence that some forms of psychological well-being are related to subsequent in-role performance, although the evidence for a causal influence of work stressors on job performance is much weaker. There is also evidence for relationships between some job stressors or well-being and organizational citizenship behaviours. In general, research conducted at the individual level, indicates only weak or provisional relationships. A small number of recent studies indicate stronger associations between average levels of well-being in an organization and organizational performance. It is concluded that more detailed and specific models of well-being and work performance need to be developed. These models need to be tested using methods that can more easily detect subtle variations in well-being and work performance.

Key words: In-role performance; organizational citizenship behaviour; psychological well-being; work performance.

INTRODUCTION

There is little doubt that firm scientific evidence for a causal influence of psychological health or well-being on performance would have profound implications for work design. This paper is concerned with studies that have sought such evidence. The paper begins with definitions of work performance, psychological well-being and job stressors, before presenting a review of current evidence.

Job performance can be defined in terms of whether employee behaviours contribute to organizational goals. This includes in-role performance, or those behaviours necessary for a person to fulfil their formal organizational role, usually as implied in a job description. The definition also includes several other behaviours that are not part of in-role performance, but which do contribute to the attainment of organizational goals: these organizational citizenship or extra-role behaviours include helping colleagues and not complaining about trivial matters at work.

Broadly, there have been two approaches to researching relationships between psychological well-being and performance. One approach is characterized by studies that have examined the direct role of psychological well-being in work performance. As psychological well-being is multi-faceted, this review includes studies that have examined: job satisfaction, an attitudinal indicator of work-related well-being; and affective well-being, the more frequent experience of positive affective states than negative affective states, such as anxiety, depression, anger, boredom and fatigue.

The other approach is characterized by studies that have examined performance as a consequence of those job conditions, or job stressors, assumed to be associated with poor well-being. Such job conditions include, for example, low work autonomy, too many demands, role ambiguity, role conflict and lack of social contact and support from colleagues.

Whilst researchers taking the former approach assume psychological well-being is a cause of poor performance, researchers taking the latter approach need not assume well-being mediates the relationship between job conditions and performance, perhaps assuming performance and well-being have common causes. This review then also makes the distinction between those studies that have examined the link between performance and adverse job conditions, and those that have examined the link between performance and psychological well-being. This review only includes studies of real organizational contexts: laboratory based research with limited ecological validity is ignored.

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reports of performance, instead concentrating on studies that have used either objective indicators of performance, such as sales figures, or others' ratings of performance, usually those of supervisors.

**JOB CONDITIONS AND PERFORMANCE**

**In-role performance**

Jex has recently reviewed the evidence on adverse job conditions and performance.² He concluded 'across all stressors and performance dimensions the relation between stress and job performance is not particularly strong' (p. 66). To take this assertion as face value would be to miss some important details in his review. The assertion appears to be true in general for role ambiguity and role conflict, and currently there is insufficient evidence to draw any conclusions for situational constraints.

For some job conditions, there is some evidence of a relationship with performance. Whilst Jex reports only one study⁶ of work performance and interpersonal conflict, which found no significant relationships, a more recent study¹¹ did find a significant correlation between perceived organizational support and supervisory ratings of performance ($r = 0.22$, $n = 128$). With regard to work demands and work load, the evidence is also equivocal, with some studies of role overload and work load finding negative relationships with performance and some finding positive relationships with performance.² Studies of working hours amongst junior doctors in the UK have revealed that excessive working hours and most especially shift changes are associated with worse performance, possibly because of sleep deprivation.¹² For job autonomy and participation in decision making, both Jex and earlier meta-analytic reviews¹³ conclude that the relationship is weak between performance and these indicators of control over the working environment. However, in another extensive review, Cotton¹⁴ concluded that job control has a consistent, positive influence on performance when implemented in its most radical operational form of semi-autonomous work teams, accompanied by adequate training in self-management.

For work load and job control, the evidence then indicates that job conditions influence performance asymmetrically and only in certain conditions. That is, extreme forms of job control may enhance performance, and extreme working hours may reduce performance. Other studies too have indicated that relationships between job conditions and performance are highly specific. In two studies reviewed by Jex, job stressors specific to the occupations studied were correlated significantly with three out of seven performance indices as measured by supervisor and co-worker ratings in a sample of nurses ($r$ values between $-0.17$ and $-0.27$, $n = 171$),¹⁵ or dollar value of sales for door-to-door book sellers ($r = -0.49$ for chronic stressors, $r = -0.23$ for acute stressors, study unpublished, sample size not specified).¹⁶ Jex also notes several studies that have examined whether individual differences moderate the relationship between job conditions and job performance. As a tentative conclusion, Jex considers that, across a range of adverse job conditions, those employees for whom performance is least likely to be affected are: those who understand the nature and timing of the stressor, have high self-esteem and have high organizational commitment. One study also indicates that different job conditions may interact to predict performance.¹⁷ Role conflict had no effect on supervisory ratings of performance under conditions of high role clarity, but workers in jobs with high role conflict and high role ambiguity had much worse performance ratings than other employees ($n = 359$).

Some studies, then, do indicate that job conditions might influence in-role performance, but only for people with certain characteristics or in certain jobs with specific characteristics or combinations of characteristics.

**Organizational citizenship behaviours**

Organ and Ryan¹⁸ conducted a meta-analysis of 55 studies on organizational citizenship behaviour. They found small but reliable correlations of around 0.20 to 0.30 between managerial supportiveness and fairness in the distribution of rewards and dimensions of organizational citizenship behaviour rated by supervisors or colleagues. More recent studies have added to this meta-analysis. In a study of 157 hospital employees, fairness in the distribution of rewards and organizational support were found to be related to three out of four indices of citizenship rated by supervisors ($r$ values $0.17–0.26$ for fairness, and $0.16–0.25$ for organizational support).¹⁹ In another study ($n = 128$), supervisory ratings of citizenship were found to be related to both organizational support ($r = 0.26$) and organizational politics ($r = -0.35$).¹² A study of administrative and professional workers found significant correlations between supervisory ratings of five indices of citizenship and participation in decisions and supervisory support ($r$ values $0.24–0.35$, $n = 142$).²⁰ In conclusion, then, there is relatively consistent evidence of small but reliable correlations between organizational citizenship and fairness in the distribution of rewards, and interpersonal and organizational supportiveness. There is some evidence that participation in decisions might also be associated weakly with citizenship behaviours.

To summarize both research on in-role performance and organizational citizenship behaviour: there are reliable correlations, yet the overall evidence indicates the relationships are relatively small, or occur only in certain circumstances. Further, much of the evidence reviewed here is both cross-sectional and reliant on self-reports of job conditions. The reliance on self-reports of job conditions is not perhaps a problem, given that it is reasonable to assume it is perceptions of job conditions that influence the psychological states that, in turn, affect performance²¹ and that the enactment of work conditions is partly dependent upon workers' perceptions.²² However, as there is no great body of longitudinal evidence, the exact causal direction is still unclear: it is equally plausible for productive workers to be given
better conditions, as it is for better job conditions to influence performance. Further, the body of evidence can neither rule out that any correlations between job conditions and performance are due to other unmeasured variables (such as managerial style, efficient procedures, policies and strategies).

WELL-BEING AND PERFORMANCE

In-role performance

Many reviews have concluded that there is no close link between job satisfaction and work performance.\textsuperscript{23-25} For instance, Iaffaldano and Muchinsky's\textsuperscript{25} meta-analysis revealed a small average correlation of 0.17 (although others have reported that this relationship is stronger for managerial and professional employees, $r = 0.31$).\textsuperscript{26} More recently, studies have examined affective components of well-being. In a cross-sectional study of nurses,\textsuperscript{17} supervisor or co-worker ratings on all seven aspects of performance studied were significantly associated with nurses' reports of depression ($r$ values $-0.10$ to $-0.40$, $n = 171$). These effects remained significant after controlling for a variety of other variables, including frequency and intensity of stressful events, subjective stress, anxiety and hostility. A more recent cross-sectional study of nurses used structural equation modelling to examine the relationships between supervisor ratings of four indices of performance, anxiety and emotional exhaustion ($n = 220$).\textsuperscript{27} Of the eight well-being-performance relationships tested, the only significant relationship was between emotional exhaustion and irritability with colleagues — itself a questionable measure of performance.

There have been several longitudinal studies of well-being and work performance. In a small-sample longitudinal study ($n = 33$),\textsuperscript{28} a composite self-report index of well-being was significantly associated with supervisory ratings of three indices of performance, taken 1 year after the assessment of well-being ($r$ values $0.38 - 0.47$). Well-being, measured 2 years prior to performance assessment, was not associated significantly with performance, although this is most probably due to low statistical power associated with small sample size. In a similar study ($n = 62$),\textsuperscript{29} there were significant correlations between three out of four performance indices and well-being assessed 1 year and 2 years previously ($r$ values $0.35 - 0.37$ 1 year previously, and $0.38 - 0.52$ 2 years previously).

Whilst the correlations in both studies are much stronger than many reported previously in this review, the study did not control for measures of performance taken at the same time or before the assessment of well-being. Therefore, the observed correlations may be due to initial performance causing both well-being and subsequent performance. This problem did not affect another longitudinal study.\textsuperscript{30} A combined measure of depression and positive emotions was significantly associated with supervisor ratings of performance made 18-20 months after the assessment of well-being ($r = 0.16$, $n = 191$). Although this correlation is relatively small, the relationship remained significant after controlling for performance assessed at the same time as well-being, education, intelligence, age and gender. Further, the correlation between well-being and performance, assessed concurrently, was much stronger ($r = 0.30$).

In two longitudinal studies of public sector workers,\textsuperscript{31} findings indicated that state affect does not have an influence on performance, but more enduring aspects of well-being do. The first study reported was a four stage study over 3.5 years ($n = 81$). A general index of psychological well-being, assessed at the beginning of the study and one year into the study, had significant correlations with two supervisory ratings of performance assessed two, three and three and a half years into the study ($r$ values $0.33 - 0.48$ for 11 out of 12 correlations, one correlation approached significance, $r = 0.25$, $P < 0.06$). These associations remained significant when earlier measures of well-being were used to predict subsequent performance, after controlling for initial performance. These findings were replicated in a two-stage study conducted over 1 year ($n = 78$). All four correlations were significant that assessed the relationship between well-being and supervisory ratings of performance, where measures were either concurrent or well-being was correlated with subsequent performance ($r$ values $0.25 - 0.46$). Further, after controlling for initial levels of performance, well-being averaged over both assessments was significantly related to final ratings of performance.

The evidence that affective well-being is a causal influence on performance is stronger than the evidence reviewed for job characteristics. Despite weak correlations with job satisfaction, assessments of more affective components have been related to performance ratings in several studies. There is a body of longitudinal evidence, and some studies have found that well-being predicts future performance, after controlling for initial performance. However, it appears it is the more enduring aspects of well-being that are associated with subsequent work performance.\textsuperscript{31} It is then not clear from this research the extent to which performance is influenced by enduring changes in well-being brought about by exposure to adverse job conditions, or a predisposition to experience poor well-being that is genetic or developed prior to entering employment. The weaker evidence reviewed earlier on job conditions may suggest the latter explanation. However, given that complex interactions between person and job variables often characterize the work–well-being relationship,\textsuperscript{32} both explanations remain plausible. Another issue concerns the measurement of performance. In all the studies reviewed, performance was assessed by supervisory ratings. It is possible that the observed correlations are partly or wholly the results of 'halo effects', in which workers with better well-being are given better performance ratings because they are liked more by their supervisors.\textsuperscript{30}

Organizational citizenship behaviours

Organ and Ryan also included studies of job satisfaction in their meta-analysis of the correlates of organizational
citizenship. In studies using supervisory or co-worker ratings of citizenship, correlations between satisfaction and two indices of citizenship were around 0.25 ($r = 0.24$ for compliance, and 0.26 for altruism). The magnitude of this correlation is greater than that reported in Iaffalando and Muchinsky's meta-analysis of in-role performance and satisfaction ($r = 0.17$), yet it is still small. It is possible that the relationship between satisfaction and citizenship alters according to circumstances. For example, in a study of 260 service sector workers in 49 work groups, job satisfaction was found to account for 5% of the variance in supervisory ratings of conscientiousness and 13% of the variance in an index of citizenship assessed by supervisory ratings of courtesy to co-workers. Whilst the relationship between satisfaction and conscientiousness was not altered by work group characteristics, the analyses revealed the relationship between satisfaction and courtesy to co-workers became stronger in work groups with greater cohesion.

Whilst the evidence for an association between job satisfaction and citizenship is strong, the evidence for a causal influence of satisfaction is not as strong, because much of the research in this area is cross-sectional. Much of the research relies on measures of job satisfaction as an index of well-being, so there is no body of evidence to indicate whether other aspects of well-being, such as affective well-being, are strongly associated with citizenship. Further, given that job satisfaction contains a strong trait component, it is not clear from this research whether organizational changes that enhance job satisfaction would subsequently enhance citizenship behaviour. There are two arguments that render a work environment explanation more plausible than a pure trait explanation. First, job satisfaction has a stronger association with citizenship than measures of trait affect. Second, evidence reviewed earlier suggests correlations between citizenship and job conditions are around the same magnitude as those between citizenship and satisfaction. However, like the evidence reviewed for in-role performance and well-being, citizenship has been assessed often by the ratings of others, and so correlations might be subject to the same 'halo effect' as might contaminate other performance ratings.

Organizational performance and average satisfaction

It appears that there are small relationships between well-being or job conditions and individual in-role performance and citizenship. There are typically small or qualified relationships between indices of well-being or adverse job conditions and a number of behaviours typically thought undesirable and which might contribute to organizational performance, such as absenteeism, work-related accidents, voluntary turnover, anti-social behaviour such as theft from work and creativity. Therefore, even if job conditions and well-being have only small and diffuse effects on in-role performance, citizenship and other important organizational behaviours at the individual level, aggregated across all behaviours and over individuals and work groups within an organization, could mean that the cumulative effect is substantial.

In his review of job conditions and performance, Jex cites three studies that indicate there is poorer organizational performance for those organizations in which workers report on average more adverse work conditions. In an organizational level analysis of job satisfaction and performance amongst 13,808 teachers in 362 US schools, higher average levels of job satisfaction within schools were associated significantly with better performance on all nine indices of organizational performance derived from ratings given by head teachers ($r$ values $[0.24] \text{to} [0.44]$) and both indices of pupil satisfaction (averaged within schools, $r$ values $0.13-0.17$). After controlling for a number of school characteristics, job satisfaction remained significantly associated with seven indices of performance and one student satisfaction index. In a replication study of 231 sales staff in 26 shops in Hong Kong, average job satisfaction within each shop was significantly associated with increases in sales turnover, at 0.37 (partial $r = 0.42$, controlling for shop size). Unfortunately, both of these studies were cross-sectional, so it is not possible on the basis of either to determine causal direction.

One study of 67 UK manufacturing organizations did use longitudinal data collection, and financial indicators of productivity and profitability, adjusted for industry and firm size. Average levels of job satisfaction were significantly associated with performance one year after collection of job satisfaction data ($r = 0.50$ for productivity, and 0.35 for profitability, correlations computed from statistics supplied in the report). These associations remained significant after controlling for prior performance (partial $r = 0.40$ for productivity, partial $r = 0.22$, partial correlations computed from statistics supplied in the report). By using longitudinal data collection and financial performance indicators, it is possible to make stronger causal inferences than in the other studies.

Taken together, the three studies of average job satisfaction and organizational performance do indicate that average well-being, as indicated by job satisfaction, is related to organizational performance across a range of industries, cultural contexts and performance indicators. The associations are stronger than many of the effects found at the individual level. In particular, those studies that have used financial indicators of performance also overcame many of the rating biases that could contaminate results found in many individual-level studies that use managerial or co-worker reports of performance.

CONCLUSION

Studies that have examined average job satisfaction within organizations have produced the strongest evidence of a link between well-being and performance. However, whilst the evidence is persuasive, the number of studies is limited: better designed studies of this type are needed to develop understanding before reaching firm conclusions. Such studies should attempt to investigate the extent to which job satisfaction mediates
the relationship between job and organizational characteristics and performance, in order to identify suitable interventions to enhance both well-being and performance. Studies should also examine the role of dispositional factors, such as predisposition to experience poor job satisfaction, to determine the extent to which interventions can change satisfaction and performance.

Further research is clearly needed in several other areas. Given the apparent promise of organizational level studies, it is then important to identify how individual behaviour contributes to work group and organizational performance. In part, this means taking a broad view of performance that includes in-role behaviour, organizational citizenship, absenteeism, anti-social behaviour, creativity and innovation. It also means developing better models for specific aspects of well-being and performance. It is also desirable to develop better methods for researching the link between performance and well-being. At all levels of analysis, studies that assess performance and well-being over successive short intervals are better placed to examine how variations in job conditions, well-being and performance are related, and whether performance is related more closely to state well-being, trait well-being or some combination of both.

REFERENCES


