

Reactions to Job Characteristics: Reply to Robinson

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Robinson's criticisms of Barnes and Jamieson (*New Zealand Psychologist*, 1977, 6, 14-24) are answered. These concern the purpose of the earlier paper, the doubts expressed with regard to the validity of Hackman and Lawler's theory, errors contained in a table and some interpretations of the results. In addition, this present paper outlines general results obtained from cultural group by higher-need group analyses.

Robinson's (1978) critique of our paper (Barnes & Jamieson, 1977) contains a major general criticism, and three specific criticisms. First she considers that we have failed to state precisely what the paper is designed to achieve, and that we "may give the erroneous impression that the research report provides a test of the Hackman-Lawler theory of job reactions." As a result of this she is critical of claims of scepticism concerning the general validity of the model. Her specific criticisms concern errors in Table 2 of the paper, the interpretation of the results of two items, and the interpretation of the satisfaction scores for Samoan employees in the sample.

As we pointed out, and as Robinson notes, the paper deals with only part of a larger study which was designed to test the Hackman and Lawler (1971) model. The purpose of our earlier paper, while not stated as an explicit aim, was clearly apparent on page 17; "to examine differences among Maori, Samoan and Pakeha employees." We made no claim that the published paper presented a test of the model. The Hackman and Lawler model was described, since otherwise the choice of the 24 variables for which data were provided in Table 2, might well have seemed to the naive reader to be somewhat arbitrary and even puzzling. Admittedly this information could have been included within Method (p. 18). Also I doubt that the small part of the discussion section, where mention is made of the model, is sufficient to convey the impression that the research reported purports to be a test of the Hackman and Lawler theory of job characteristics.

However, data obtained from the larger and as yet unpublished study, do permit a test of the Hackman and Lawler model. In the larger research, two extreme need groups were drawn from the total sample as Hackman and Lawler (1971)

had done (i.e. in the manner generally outlined by Robinson). The main higher order need strength score for the top third of subjects (high-need group) was 6.78 and for the bottom third (low need group), the corresponding mean was 4.74, i.e. still well above the mid point on a seven point scale. Correlations between each of the four job characteristics or core dimensions (variety, autonomy, task identity and feedback) and 19 employee reactions (variables 6 to 24 in Table 2, Barnes & Jamieson, 1977) were calculated for each of the two extreme need strength groups. Like Hackman and Lawler, we found that high order need strength acted as a moderator for relationships between some of the reactions and variety and autonomy, and, like them, that no moderator effects were apparent in the cases of task identity and feedback. However, Hackman and Lawler had proportionately more significant correlations for both need groups than were yielded by our analyses with the data from the New Zealand sample.

Hackman and Lawler also tested the moderating effects of need strength by correlating product scores (variety x autonomy x task identity x feedback) with the employee reaction measures, for each of the two extreme need groups. Nineteen of their high need group correlations and 10 of the low need group correlations were significant. On eight of the satisfaction reaction measures the high need group's correlations with the product scores were significantly higher than those obtained by the low need group. In our own study 13 high need group and three low need group correlations were significant. In addition, high need group correlations for job involvement, general satisfaction and six specific satisfaction items with product scores were significantly higher than those yielded by the low need group. The results

for the total sample thus showed similar but somewhat weaker moderator effects to those contained within Hackman and Lawler's results.

In our previous paper, moderator effects of need strength for each cultural group were not reported, as we felt that the n 's within the need strength x cultural groups were rather low, down to $n = 10$ in the case of the Pakeha extreme need groups. These analyses have been carried out subsequently.

Correlations between the four separate core dimensions and 19 employee reactions were calculated for the thirds of each cultural group distribution who were highest or lowest in terms of desire for higher need scores (Barnes & Jamieson, 1977). Across the four dimensions the high and low groups of Pakeha employees each produced 14 significant correlations (only variety showed the predicted effect). The ordering of high-low group paired correlations was as predicted by Hackman and Lawler in only 54% of the cases, and only two of the 76 high-low group pairs had correlations with the high group's significantly greater than those of the lower group. For Samoan employees, there were 18 significant correlations for the high group and 10 for the low. Variety, feedback and autonomy showed weak differences in the predicted direction. Pairs of high-low correlations were ordered according to Hackman and Lawler's model in 59% of the cases, but only four of the 76 high group correlations were higher than the corresponding low group measures. The results of the Maori group, however, were quite different and to the writer both unexpected and interesting. Thirty-seven of the high group's and nine of the low group's correlations were significant, with predicted differences for each core dimension. Pairs of high-low correlations had the predicted ordering in 83% of the cases, with those for autonomy and task identity being particularly consistent. Fourteen of the high group correlations were higher than the equivalent low group measures and seven of these occurred with the autonomy dimension.

A second analysis examined the correlations between the dimensional product scores and employee reactions for each need x cultural group. The general pattern was similar; the results for the Samoan and Pakeha groups offered slight support for the model while those for the Maori group were more consistent with predictions.

Taken together, the two need strength x cultural group analyses provided reasonable support for the Hackman and Lawler model in the case of Maori subjects, but little support in the cases of the other two cultural groups. It is not possible to state with any certainty why the Maori group-model fit was superior, and too early to decide whether this is generalizable or merely a result of

the subject and/or job samples used. Suffice it to say that these preliminary results support the view that the Hackman and Lawler model may lack general validity across different cultural groups. Admittedly, we would have predicted that the fit with the model would have been better in the case of Pakeha subjects than with the other two groups.

I remain sceptical concerning the general validity of the Hackman and Lawler model. To be fair to Robinson, this scepticism had its genesis in the results of the unpublished larger study rather than in the data reported in our previous paper. For example, inter-rater reliabilities of the ratings of the degree to which each of the four core dimensions (variety, autonomy, task identity and feedback) were present in the jobs were much lower than those quoted by Hackman and Lawler (1971) among employees within jobs ($\bar{X}_r = .39$), between employees and supervisors ($\bar{X}_r = .43$) and employees and a researcher ($\bar{X}_r = .10$). The psychological need measure (Table 2, Barnes & Jamieson, 1977) was a poor discriminator as the low need group's higher-need scores in Hackman and Lawler's study was 5.09 and in ours was 4.74, both well above the mid point of a seven point scale. Many of the correlations between core dimensions and job reactions were very low, or even negative, particularly in the case of the non-satisfaction reaction categories such as level of intrinsic motivation, focus of motivation and rated performance (cf. Hackman & Lawler, 1971, Table 6). I am not alone in these doubts. Salancik and Pfeffer (1977) have also recently pointed to the low levels of variance accounted for by the model when tested. There remain too the questions of the number of core dimensions which can be considered to adequately represent job characteristics (Dunham, 1976; Sims, Szilagyi & Keller, 1976), and whether a compensatory additive model or non-compensatory model is more appropriate (Dunham, 1976) if a multi-dimensional structure is preferred.

Let me now turn to Robinson's specific points.

There are indeed errors in the categorization of the 24 variables listed in Table 2 of the original paper. Variables 5 and 6 should have been categorized separately (as noted by Robinson), and also variables 11 and 12. In addition there is some general untidiness in the asterisked footnotes, an unnecessary line between variables 16 and 17 and the use of lower case "p" as abbreviations for Pakeha. Our manuscript did not contain these errors and so I can only conclude that they occurred later in the publication process.

Robinson challenges our interpretation of two items, "opportunity in [their] job, for participation in the determination of methods, procedures and goals" and "opportunity for personal growth

and development on [their] job." We did not report separate data for these two items. Similar but amended items were included with 10 other items in the measure of desire for higher-order needs, i.e. under "psychological need level" in Table 2 (Barnes & Jamieson, 1977), for which the means and standard deviations for each cultural group on this measure were listed. (This follows Hackman & Lawler, 1971, cf. p. 271.) The New Zealand sample's mean psychological need level (5.79) was lower than that for Hackman and Lawler's sample (6.01). The only data in Table 2 specific to responsibility per se, refer to a focus of motivation item; "It is important to be personally responsible for what I do and check my own work." Rather than questioning Hines' (1975) conclusion concerning New Zealand manual workers' attitudes to responsibility, the results support it. For this item, the New Zealand sample mean, 5.76, was significantly lower than the mean of 6.39 for Hackman and Lawler's sample, $t = 3.84$ $p < .001$.

We did not suggest that the greater satisfaction with their jobs reported by Samoan workers implies that they would become dissatisfied with enriched jobs. What we were suggesting was that the evidence pointed to this group having an instrumental orientation to work. For example, pay is extremely important to people with this orientation, whereas job content factors are less so. Thus in a job, they will be less easily satisfied with a given pay level and more easily satisfied with given job content levels than would a group of workers with a less instrumental and more intrinsically motivated attitude to work. On eight of the eleven satisfaction items (Table 2, Barnes & Jamieson, 1977) the Samoan means were highest; on only one item "Pay" was the Samoan mean the lowest. Finally we suggested that such judgements of satisfaction need to be viewed within the context of the individual's previous work experiences and then speculated that work socialization experiences within New Zealand might lead to the satisfaction judgements of individual Samoans becoming more similar to those of Maoris and Pakehas as their lengths of residence increased.

I am grateful to Dr Robinson for raising these points on our paper and I regret that Claire Barnes was not able to be associated with the reply, particularly in view of her major part in the larger research project. The research area which Hackman and Lawler gave impetus to is a significant one and the question of cross-cultural validity is an important aspect of it. In spite of the criticisms and scepticisms listed earlier, two subsequent studies are under way at the University of Canterbury, both of which are employing the improved Hackman and Oldham (1975) model. Perhaps my scepticism may in time yield and conversion occur along the road to some job enrichment Damascus, or should it be Kalmar?

Readers may obtain copies of the corrected version of Table 2 (Barnes & Jamieson, 1977) and also of the tables from which the results, described in the present paper, are drawn, by writing to the author, Department of Psychology and Sociology, University of Canterbury, Christchurch.

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