

New work attitude measures of trust, organizational commitment and personal need non-fulfilment

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Within research on the quality of working life the variables of trust, organizational commitment and the fulfilment of personal needs play an important part. Yet relevant measures with adequate psychometric support are difficult to locate, especially ones applicable to blue-collar British working populations. The present paper introduces new measures of these variables, each of which has a number of subscales. Internal homogeneity, reliability and factor analytic data are described which show the scales to be psychometrically adequate and stable. To support the future use of the measures for diagnostic and evaluative purposes, normative data are also provided.

The three scales reported in this paper add to the work previously reported in Warr *et al.* (1979), where it was argued that there exists a need to develop robust, short and generally applicable instruments relevant to multivariate research into the quality of working life. To that end the paper presented psychometric data in support of seven new measures covering work involvement, intrinsic job motivation, higher order need strength, perceived intrinsic job characteristics, self-rated anxiety, job satisfaction and life satisfaction. The latter two measures included a number of subscales.

The present paper extends this work by introducing three additional instruments, each with subscales, together with details of their psychometric properties and standardization data. These measures are, (a) *interpersonal trust at work*, (b) *organizational commitment*, and (c) *personal need non-fulfilment*. All the scales have been developed primarily for use with UK blue-collar employees, and for that reason have been kept fairly brief, with the content of items easily understood.

Interpersonal trust at work

Trust as a common word in ordinary language retains much of that meaning when employed as a concept in social science. It refers, in the main, to the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people. This willingness will in turn affect the way in which one behaves towards others. The concept of trust appears in a variety of publications dealing with behaviour in organizations and in institutional settings (e.g. Schein, 1969; Argyris, 1970; Fox, 1974). In general, the consensus of opinion is that trust between individuals and groups within an organization is a highly important ingredient in the long-term stability of the organization and the well-being of its members.

Three main approaches can be distinguished in empirical investigations of trust. They differ in the degree to which the variable is directly measured. The most indirect method is that of inferring trust from other forms of behaviour. An example of this procedure can be found in Rosen & Jerdee (1977) in which trust is inferred from the willingness of persons in a position of power to involve subordinates in participative decision-making. The second

approach is to create a situation in which the development of trust between or within groups is essential to the performance of a prescribed task, and thus the level of performance is taken as an index of the degree to which trust has developed. This approach is most in evidence in games theory applications; see the reviews by Deutsch (1973) and by Lindsfold (1978). The third approach, and the one most relevant to the present paper, is the measurement of trust as a directly experienced evaluative or affective reaction, by means of a self-report scale.

There are a number of such scales designed to measure trust as an individual difference variable, referring to the respondent's degree of trust in other people in general, or in social groups and institutions (e.g. Wrightsman, 1964; Rosenberg, 1957; Rotter, 1967; Shure & Meeker, 1967), but there are very few which refer directly to the context of a work or organizational setting. Hrebiniak & Alutto (1972) mention use of a six-item work-related trust scale by Hrebiniak (1971). Jones *et al.* (1975) have a scale measuring employees' confidence and trust in their leader. However, neither of these two work-related trust scales is available in detail from the literature. Also both are phrased for, and standardized on, American populations.

The development of the present scale of *interpersonal trust at work* recognizes that, with regard to mutually dependent work groups within an organization, trust may be placed along two different dimensions: (i) faith in the trustworthy intentions of others, and (ii) confidence in the ability of others, yielding ascriptions of capability and reliability. From the viewpoint of blue-collar employees each of these dimensions can refer to either (a) peers or (b) management thereby providing a fourfold classification.

Organizational commitment

The concept of *organizational commitment* refers to a person's affective reactions to characteristics of his employing organization. It is concerned with feelings of attachment to the goals and values of the organization, one's role in relation to this, and attachment to the organization for its own sake rather than for its strictly instrumental value. As a positive outcome of the quality of work experience, the concept can be regarded as a factor contributing to subjective well-being at work.

Buchanan (1974), in a study on the development of *organizational commitment*, distinguishes three components:

Identification—pride in the organization; the internalization of the organization's goals and values.

Involvement—psychological absorption in the activities of one's role

Loyalty—affection for and attachment to the organization; a sense of belongingness manifesting as 'a wish to stay'.

Definitions of the first and third components are held in common with other authors such as Steers (1977) and Porter *et al.* (1974). The second component (involvement) is also viewed by these authors in a broadly similar way, but differences exist. Buchanan deals with involvement as a form of satisfaction obtained from one's work and activities carried out in the job role. This is similar in conception to one aspect of Lodahl & Kejner's (1965) scale of *job involvement* and to Hackman & Oldham's (1976) *internal work motivation* scale (for a discussion of the distinction between aspects of *job involvement*, see Warr *et al.*, 1979). An alternative view, provided in Porter *et al.* (1974), is of a high level of effort in the job on behalf of the organization. The difference between the two positions is whether or not a person's involvement with his work goes beyond the job itself such that he works hard both for his own satisfaction and for the sake of the organization.

The most widely used scale of *organizational commitment* is one by Porter, see Mowday *et al.* (1979), but, having been designed specifically for American employees, the phrasing of items is often not appropriate for the present target population. Instances of its use can be found in Porter *et al.* (1974), Stone & Porter (1975), Dubin *et al.* (1975) and

Steers (1977). Other authors employing the concept of *organizational commitment*, such as Brown (1969), Hall *et al.* (1970), Patchen (1970), Lee (1971), Sheldon (1971) and Hrebiniak & Alutto (1972), have used scales of their own devising, often for specific populations, which are thus of limited use for purposes of comparison. Other authors have compiled *organizational commitment* scales as composites of other available scales, e.g. Buchanan (1974), Schwyhart & Smith (1972). Common to all the articles examined which use a specific measure of *organizational commitment* there is a failure to quote in detail all the items in the questionnaire, one or two examples being given at best.

There is also little psychometric support offered for the scales, this being limited in most cases to the internal consistency of items within the scale and not encompassing retest or factor analytic characteristics. These omissions, together with the sometimes *ad hoc* nature of the measures and lack of UK standardization data, point to the need for a scale such as is offered in this paper.

For the present measure of *organizational commitment* the three component distinctions given by Buchanan (1974) are maintained, together with his definitions for 'identification' and 'loyalty'. The 'involvement' component, however, is now defined as the willingness to invest personal effort as a member of the organization, for the sake of the organization.

Personal need non-fulfilment

Although the scheme of psychological needs proposed by Maslow (1954) has not received strong empirical support, its underlying notion of various types of need being differentially expressed according to hierarchical relationships has had continuing conceptual appeal. In more recent years increasing attention has been focused on the 'higher' needs of people in non-managerial and non-professional jobs where the opportunities for the satisfaction of such needs are relatively restricted by the nature of the tasks performed. Job redesign programmes are a move towards incorporating into job structures the possibility of increasing higher order need satisfaction.

Recent research interest has pointed to the role of higher order needs as moderators of relationships between job characteristics and job satisfaction, e.g. Hackman & Oldham (1976). The most widely used scales of this type of individual difference variable are the *individual need strength* questionnaire of Hackman & Lawler (1971) and its modified form, the *growth need strength* questionnaire of Hackman & Oldham (1975).

The present focus of interest is on the degree to which Maslow-type 'higher' needs are satisfied in a job or the work environment and not on individual differences *per se*. The present scale is thus to be distinguished from measures of individual differences such as the *growth need strength* instrument of Hackman & Oldham (1975) and the *higher order need strength* scale of Warr *et al.* (1979). Previously attempts have been made to integrate measurement of both the strength of needs and the level of their fulfilment, the best-known scale of this type being the Needs Satisfaction questionnaire of Porter (1961). In a later application of this scale Porter (1962) derived a discrepancy score in relation to need satisfaction by subtracting scores for 'how much is there now?' from scores for 'how much should there be?'. An objection to this procedure of deriving discrepancy scores has been argued by Wall & Payne (1973) who state that there is a difficulty in the interpretation of discrepancy scores *vis-à-vis* independent variables, since that score may be simply reflecting a relationship between 'existing' level scores and the independent variable involved. These authors recommend that respondents be allowed, via an appropriate response format, to perform their own subjective computations, the response then being a resultant of perceived expectations, needs and satisfactions. Cronbach & Furby (1970) similarly recommended that manipulated scores be avoided because of uncertainty in their interpretation, and that raw scores only should be used.

The present *personal need non-fulfilment* scale also employed the Maslow hierarchy of

needs as a conceptual guide to its construction. The item phrasing is suitable for manual workers. The response format requires the respondent to make a single response regarding how much more of a given job characteristic he would like in his present job and work life than he at present has. This format at once allows of a subjective computation of 'have now', 'importance' and 'would like', the response of course being influenced by both the qualities of the present job and by the individual's level of need strength. The measure is thus more akin to Porter's scale than to that of Hackman & Oldham, but refers with both to the same conceptual ground.

METHOD

The samples

Scales to measure the three concepts were developed through two interview studies with blue-collar workers. The sample sizes were 390 and 260 for Study 1 and Study 2 respectively. All respondents were male, full-time employees in manufacturing industries (orders 3–19 of the Standard Industrial Classification, Department of Industry, 1973). Employees had worked in their present job for at least 1 month and ages ranged from 20 to 64 years, with 50 per cent of the sample being below age 41 years. Employment status covered workers up to and including foremen and was categorized on a basis of skill level. Three levels of skill were selected, 'level' being defined in terms of the training required before a person was judged competent at his job. Skilled workers (50 per cent of sample) required months or years of training, semi-skilled (30 per cent) required several weeks, and unskilled (20 per cent) only a few days of training. Respondents within each skill level were also selected according to two categories of firm size, half the sample being from firms employing up to 300 people and half from larger firms.

To obtain a nationally representative sample respondents were interviewed from 20 sampling areas distributed through England, Wales and Scotland, the sampling frame imposed and described above conforming to national demographic characteristics, taken from data provided by the *Department of Employment Gazette* (1978) and OPCS (1970). Data on three other variables were also collected and the percentages of the total sample falling into each level of these variables was as follows.

- (i) Length of service in current job: < 2 years = 29 per cent; 2–5 years = 21 per cent; 6–10 years = 23 per cent; 11–20 years = 18 per cent; > 20 years = 9 per cent.
- (ii) Family dependents: single = 12 per cent; married, no children at home = 27 per cent; married, with children at home = 61 per cent.
- (iii) Extent of union membership in firm: none = 10 per cent; some = 11 per cent; most = 31 per cent; all = 48 per cent.

Procedures

The items for all three scales were generated afresh by the authors. However, distinctions drawn by Buchanan (1974) and the familiar levels of Maslow's (1954) *need hierarchy* served as conceptual guides to the *organizational commitment* and *personal need non-fulfilment* scales respectively.

The questionnaires were administered to volunteer respondents by female interviewers from National Opinion Polls Market Research Limited of London in the respondents' own homes, as part of a larger survey concerned only with work attitudes. The first study was carried out in November 1977 and the second in March 1978.

In both studies the present scales were presented within a single questionnaire package, both studies variously including other scales (i.e. those bearing scale code nos 1, 2, 3, 4, 5 and 8 as described in Warr *et al.*, 1979). Interviewers introduced each scale with its own short explanatory note and then read out each item in turn. The respondent then chose one from a set of responses listed on a card for each of these items; for 50 per cent of

respondents the order of response alternatives was reversed. A complete package of seven scales took about 30 minutes to complete. Interviewers in pilot and main studies were given instructions to report those items creating difficulties of comprehension and none of the items so reported was included in the final form of the scales. These same questionnaires have subsequently been used in a self-completion format also quite successfully.

All three scales were reduced in length after analysis of their respective first studies, those items with the lowest item-whole scale correlations being dropped to retain the best scaling three or four items per subscale. Psychometric and standardization data were then recalculated. *Trust* and *organizational commitment* scales received their second standardization run in the second study, but the *personal need non-fulfilment* scale, which received its first run in the second study, has not yet undergone a large sample verification run.

Items comprising the scales

Copies of the scales presented in this paper, together with their response cards, appear in Appendix A. Scoring is a simple, unweighted sum of the responses to each item in a scale or subscale, the response scale ranges being 1–7 in *trust* and *organizational commitment* measures and 1–5 in the *personal need non-fulfilment* measure. Items within each measure are randomized in presentation order.

Interpersonal trust at work

Faith in intentions of:	Peers — items 3, 5, 8
	Management — items 1, 7, 12
Confidence in actions of:	Peers — items 9, 10, 11
	Management — items 2, 4, 6

(items 2 and 12 are negatively phrased and need to be reverse scored)

Organizational commitment

Organizational identification — items 1, 5, 8
 Organizational involvement — items 3, 6, 9
 Organizational loyalty — items 2, 4, 7
 (items 2, 3 and 8 are negatively phrased and need to be reverse scored)

Personal need non-fulfilment

Social need non-fulfilment — items 3, 5, 10, 14
 Self-esteem need non-fulfilment — items 2, 8, 11, 16
 Autonomy need non-fulfilment — items 7, 9, 12, 13
 Self-actualization need non-fulfilment — items 1, 4, 6, 15

RESULTS AND DISCUSSION

Psychometric and standardization data

Table 1 shows the psychometric data and the scale scores for each of the measures and subscales in each of the two studies, based on identical sets of items.

Table 1. *Psychometric and normative data for Studies 1 and 2*

Scale	Study 1 (<i>n</i> = 390)				Study 2 (<i>n</i> = 260)			
	Mean item-whole correlation	Coefficient alpha	Mean score	SD	Mean item-whole correlation	Coefficient alpha	Mean score	SD
Trust	0.46	0.85	60.48	12.33	0.43	0.80	63.04	10.23
Faith in peers	0.61	0.77	17.28	3.27	0.54	0.71	17.77	2.90
Faith in management	0.62	0.78	13.68	4.62	0.50	0.69	14.48	4.10
Confidence in peers	0.56	0.74	15.87	3.83	0.62	0.77	16.74	3.69
Confidence in management	0.64	0.79	13.74	4.69	0.55	0.74	14.05	4.14
Organizational commitment	0.64	0.87	44.64	11.45	0.50	0.80	45.37	9.55
Organizational identification	0.57	0.74	15.04	4.38	0.54	0.71	15.77	4.00
Organizational involvement	0.45	0.87	16.99	3.11	0.42	0.71	16.58	3.08
Organizational loyalty	0.67	0.82	12.63	5.51	0.42	0.60	12.99	4.47
Personal need non-fulfilment	—	—	—	—	0.55	0.89	43.57	9.29
Social need non-fulfilment	—	—	—	—	0.42	0.64	10.08	2.58
Self-esteem need non-fulfilment	—	—	—	—	0.56	0.76	11.07	2.80
Autonomy need non-fulfilment	—	—	—	—	0.50	0.72	10.66	2.75
Self-actualization need non-fulfilment	—	—	—	—	0.61	0.80	11.70	3.14

It can be seen that the coefficients of internal homogeneity (mean item-whole r , and alpha coefficients) are substantial in both studies. The tendency for coefficients to be slightly lower in Study 2 than in Study 1 is to be expected since the final form of each scale was compiled from an originally larger pool of items by selecting items with relatively good scaling properties. Internal homogeneity figures could then have been augmented by chance factors to a spuriously high level in Study 1. Independent t tests were made on the difference in mean scores between Studies 1 and 2 as a cross-validated check. The only statistically reliable difference was for the *confidence in peers* subscale of *trust*, ($t = 2.91$, $P < 0.01$), which was responsible for a similar difference found in the overall *trust* scale.

As a further check on scale stability a subsample from Study 1 ($n = 63$) was asked to complete the questionnaire a second time 6 months after that study. These individuals were in the same job at the time of both interviews. The interviews were again carried out by National Opinion Polls after respondents had been contacted regarding their willingness to participate a second time. The results from this back-up study are presented in Table 2 as test-retest reliability data.

Table 2. Test-retest data for a subsample from Study 1 ($n = 63$)

Scale	Test (time 1) mean	Retest (time 2) mean	Correlation between 1 and 2	
			Pearson	Sig.
Trust	58.51	59.33	0.60	$P < 0.001$
Faith in peers	16.97	16.65	0.51	$P < 0.001$
Faith in management	12.97	13.63	0.60	$P < 0.001$
Confidence in peers	15.62	16.20	0.32	$P < 0.011$
Confidence in management	12.95	12.84	0.43	$P < 0.001$
Organizational commitment	44.80	43.79	0.50	$P < 0.001$
Organizational identity	15.11	14.84	0.60	$P < 0.001$
Organizational involvement	17.24	16.73	0.53	$P < 0.001$
Organizational loyalty	12.62	12.55	0.35	$P < 0.006$

Correlated t tests carried out on the two sets of data reveal no differences of statistical significance between mean scores across time, and likewise no reliable differences in variances occur. For the two principal scales of *trust* and *organizational commitment* the correlations show an acceptable level of association. In this respect however, the *trust* subscale of *confidence in peers* and the *organizational commitment* subscale of *organizational loyalty* show less adequate test-retest reliability. The results here indicate that for these subscales individual responses differ over time while the statistical characteristics of the group remain closely similar.

The internal homogeneity data together with cross-validated and test-retest data substantiate the claim for the *trust* and *organizational commitment* scales that they are psychometrically adequate, stable and reliable. Test-retest evidence for the *personal needs non-fulfilment* scale is not yet available on the basis of a national study to support the finding from Study 2. A more detailed breakdown of the normative data into deciles is given in Appendix B. The mean scores for both *trust* and *organizational commitment* are above their scale mid-point but well away from the scale end-points. With the *personal need non-fulfilment* measure the response scale begins to indicate a dissatisfaction with need fulfilment on scale point 3, so that for the whole scale of 16 items 'dissatisfaction' scores are those above a scale mean of 32.0, up to a maximum of 80.0. The norms given in Table 1 indicate only a moderate level of dissatisfaction or lack of need fulfilment in the national sample. What is of interest, however, is the tendency towards larger dissatisfaction

Table 3. *Varimax-rotated factor loadings on four factors^a*

Scale items	Factor 1	Factor 2	Factor 3	Factor 4
<i>Trust</i>				
9·1	–21	23	73	–01
9·2	–04	09	62	04
9·3	09	18	09	52
9·4	–06	11	80	02
9·5	11	23	05	62
9·6	–12	12	76	11
9·7	–12	39	53	11
9·8	–13	06	09	75
9·9	–03	12	02	81
9·1	–06	05	–07	66
9·11	–06	02	14	66
9·12	–16	31	53	06
<i>Organizational commitment</i>				
10·1	–04	68	40	14
10·2	–25	55	34	10
10·3	–15	47	06	01
10·4	–21	61	16	–03
10·5	–08	67	20	15
10·6	–01	58	11	04
10·7	–12	51	–03	15
10·8	–11	39	36	18
10·9	04	65	15	11
<i>Personal need non-fulfilment</i>				
11·1	62	–07	04	–12
11·2	62	–12	–14	–02
11·3	61	03	–01	09
11·4	64	–19	–05	–15
11·5	41	27	–02	–32
11·6	75	–08	–08	–07
11·7	69	–22	–10	03
11·8	65	–11	–25	14
11·9	62	–19	–14	–02
11·10	61	02	–05	–02
11·11	64	–16	–05	08
11·12	53	12	–18	–16
11·13	60	–05	–02	–02
11·14	34	25	–20	–29
11·15	68	–05	01	–08
11·16	59	–21	–21	15

^aDecimal points are omitted. The highest loading for each item is italicized.

scores from lower to higher levels of the Maslow categories of need, a result in agreement with findings of Porter (1962).

Factor analysis

While the concepts which the *trust*, *organizational commitment* and *personal need non-fulfilment* scales measure can be conceptually distinguished and the measures are seen to be structurally quite sound, it is necessary to demonstrate that, as scales, they are also factorially independent even though in correlational analyses they may be in association. Table 3 shows the results of a principal component factor analysis without iterations,

rotated to a varimax criterion, on the item content of the three scales, limited to four factors, which accounts for 46 per cent of the total variance. The data used were those obtained in Study 2 where the *trust* and *organizational commitment* scales were in their final form. The scale code numbers follow the notational system employed in Warr *et al.* (1979)

If the highest loadings on each factor are considered, it can be seen that the *personal need non-fulfilment* and the *organizational commitment* scales load discretely on to Factors 1 and 2 respectively. The scale of *trust*, however, is resolved as two factors. Factor 3 includes all the 'management' subscale items and Factor 4 all the 'peers' subscale items, each set loading discretely on to its respective factor. This four-factor solution gave an optimal result in that it retained the integrity of the measures but provided a separation of the *trust* items into a peers factor and a management factor. This suggests that the principal distinction within the *trust* scale between peers and management items is functionally important; indeed they might best be considered as separate measures.

Correlational analysis

The correlation matrix in Table 4, for all scales and variables used in Study 2, plus three others (scale codes no. 1, *work involvement*; no. 2, *intrinsic job motivation* and no. 8, *anxiety*) which had also been used in Study 1, reveals several points of interest. First, for the demographic variables, it can be seen that Age correlates positively with *faith in management* ($r=0.21$), *organizational loyalty* ($r=0.33$) and inversely with *personal need non-fulfilment* ($r=-0.30$). Whilst Age is mutually linked with Length of Service ($r=0.41$), the latter is not significantly related to any of the variables correlating strongly with Age, apart from *organizational loyalty* ($r=0.24$). Age then appears to be positively associated with *trust in management* and a wish to remain with the employer. The negative relationship of Age with *personal need non-fulfilment* may be due in part to a decrease in the strength of higher needs with age, for a negative correlation ($r=-0.29$) is observed between Age and the variable *higher order need strength*.

With regard to the intercorrelations between the newly introduced scales, all the *trust* subscales correlate substantially with all *organizational commitment* subscales (with the intuitively acceptable exception that the *trust in peers* subscale is unrelated to *organizational loyalty*). This confirms the finding of Hrebiniak & Alutto (1972) that *trust* correlates with *organizational commitment*. *Trust* also correlates negatively and reliably with *personal need non-fulfilment* (but only for *trust in management* subscales) and a possible interpretation here is that need satisfaction fosters positive regard for management. *Personal need non-fulfilment* in turn inversely correlates with all the *organizational commitment* subscales. Need satisfaction as a positive work experience (Steers, 1977) could be thought of as an antecedent of *organizational commitment*.

Other points of note are that *job satisfaction* is substantially correlated with all *trust*, *organizational commitment* and *personal need non-fulfilment* subscales, while *perceived intrinsic job characteristics* is similarly in association with *organizational commitment* and *personal need non-fulfilment*, but only with the *faith in management* scale of *trust*. (*Personal need non-fulfilment* correlations are of course negative since it is a measure of potential dissatisfaction.)

The single scale with generally the highest correlations with most other scales is the *faith in management* subscale of *trust*. Apart from the *higher order need strength* scale, *confidence in peers* and *social needs*, none of which one would expect to be associated with a regard-for-management variable, every other correlation of *faith in management* with other scales is at least moderately high. This is evidently a quite important variable and could be considered as both an outcome of work experience, and a variable contributing to the formation of *organizational commitment*. This same variable and its companion subscale, *confidence in management*, are also the strongest correlates among the presently

Table 4. Scale intercorrelations (decimal points are omitted)

Matrix code	Title of variable or measure	1	2	3	4	5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	Scale code number
(1) Age		-																				-
(2) Skill level		-02	-																			-
(3) Firm size		08	00	-																		-
(4) Unionization		10	-07	42	-																	-
(5) Service		41	17	15	12	-																-
(6) Family		10	07	12	03	15	-															-
(a) Trust		00	00	02	07	-09	-03	-														9
(b) Faith-peers		-14	12	03	10	-11	00	64	-													9(a)
(c) Confidence-peers		-12	09	05	04	-14	-06	61	57	-												9(b)
(d) Faith-management		21	00	01	06	03	05	75	22	12	-											9(c)
(e) Confidence-management		02	-13	-03	02	-07	-05	76	21	14	63	-										9(d)
(f) Organizational commitment		28	12	08	11	22	07	56	30	23	61	42	-									10
(g) Organizational identification		17	09	06	07	16	02	56	32	23	59	43	86	-								10(a)
(h) Organizational involvement		19	12	05	07	14	07	41	25	20	42	30	76	54	-							10(b)
(i) Organizational loyalty		33	07	11	15	24	10	42	17	11	50	31	84	57	43	-						10(c)
(j) Personal need non-fulfilment		-30	-07	03	03	-15	-03	-30	-11	-16	-32	23	-31	-23	-16	-31	-					11
(k) Social need non-fulfilment		-13	-06	-03	04	06	02	-15	-07	-15	-15	05	-09	-07	03	-14	73	-				11(a)
(l) Self-esteem need non-fulfilment		-28	-07	01	02	-13	-08	-26	-00	-04	-34	28	-33	-25	-22	-31	84	44	-			11(b)
(m) Autonomy need non-fulfilment		-25	-07	06	08	-13	-02	-28	-07	-13	-32	21	-30	-25	-14	-28	86	49	68	-		11(c)
(n) Self-actualization need non-fulfilment		-26	-04	03	-03	-12	00	-24	-09	-14	-23	19	-28	-18	-13	-30	85	48	62	64		11(d)
non-fulfilment																						
(o) Higher order need strength		29	22	04	03	07	00	15	21	08	05	01	18	13	29	08	21	24	08	11	21	3
(p) Perceived intrinsic job characteristics		14	30	-11	-07	18	08	27	14	06	32	19	45	43	36	31	40	-20	-40	-41	-31	4
(q) Job satisfaction		14	16	-08	02	14	02	58	32	28	57	43	62	59	41	52	-48	-27	-43	-45	-40	5
(r) Intrinsic job motivation		21	13	-01	-02	16	04	30	26	21	25	17	45	34	44	41	-	-	-	-	-	2
(s) Work involvement		09	01	-06	-04	-02	15	28	19	21	25	18	39	31	33	38	-	-	-	-	-	1
(t) Anxiety		-01	01	05	04	01	09	-30	-20	-15	-25	25	-23	-22	-15	-22	-	-	-	-	-	8

Note: Correlations between demographic variables are Kendall's tau where $\tau \geq 0.12$ carries $P < 0.001$. All other correlations are Pearson's r . Significance levels for scales (s), (t) and (u), drawn from Study 1, are $r \geq 0.16$, $P < 0.001$ and $r \geq 0.13$, $P < 0.01$. The remaining correlations are from Study 2, where $r \geq 0.20$, $P < 0.001$ and $r \geq 0.15$, $P < 0.01$. Scales (p) to (u) are described in Warr *et al.* (1979) and the system of scale code numbers follows from that report.

employed scales with *anxiety*. This is a negative relationship such that anxiety decreases with increases in *trust*, and, to a rather less extent, increases in *organizational commitment*.

The correlational evidence presented in this section shows the new scales relating with measures of other constructs in sensible ways and it is anticipated that future use of the scales will provide further information on their construct validity.

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APPENDIX A

The instructions and finally selected items are presented in full below. The scales may be freely used and minor modifications to the instructions may sometimes be required. Users are, however, requested to supply to the authors as much detail as possible about samples, results and correlates, for such information will assist in the compilation of normative and validation data.

Section 9: Interpersonal trust at work

Introduction. I shall read to you some statements which express opinions that people might hold about the *confidence* and *trust* that can be placed in others at work, both fellow workers and management.

Would you use this scale (SHOW CARD 'W') to say *whether* you agree or disagree with each statement, and to consider *how much* you disagree or agree with them.

- 9.1 Management at my firm is sincere in its attempts to meet the workers' point of view.
- 9.2 Our firm has a poor future unless it can attract better managers.
- 9.3 If I got into difficulties at work I know my workmates would try and help me out.
- 9.4 Management can be trusted to make sensible decisions for the firm's future.
- 9.5 I can trust the people I work with to lend me a hand if I needed it.
- 9.6 Management at work seems to do an efficient job.
- 9.7 I feel quite confident that the firm will always try to treat me fairly.
- 9.8 Most of my workmates can be relied upon to do as they say they will do.
- 9.9 I have full confidence in the skills of my workmates.

- 9.10 Most of my fellow workers would get on with their work even if supervisors were not around.
- 9.11 I can rely on other workers not to make my job more difficult by careless work.
- 9.12 Our management would be quite prepared to gain advantage by deceiving the workers.

Section 10: Organizational commitment

Introduction. In this section we look at what it means to you being a member of your organization. Some people feel themselves to be just an employee, there to do a job of work, while others feel more personally involved in the organization they work for.

The following items express what people might feel about themselves as members of their organization.

Will you please indicate on this scale how much you agree or disagree with each statement in turn (SHOW CARD 'W').

- 10.1 I am quite proud to be able to tell people who it is I work for.
- 10.2 I sometimes feel like leaving this employment for good.
- 10.3 I'm not willing to put myself out just to help the organization.
- 10.4 Even if the firm were not doing too well financially, I would be reluctant to change to another employer.
- 10.5 I feel myself to be part of the organization.
- 10.6 In my work I like to feel I am making some effort, not just for myself but for the organization as well.
- 10.7 The offer of a bit more money with another employer would not seriously make me think of changing my job.
- 10.8 I would not recommend a close friend to join our staff.
- 10.9 To know that my own work had made a contribution to the good of the organization would please me.

Section 11: Personal need non-fulfilment

Introduction. It is a fairly obvious truth that people differ from one another in what they need and expect to get from different areas of their lives.

Could I now ask you to think about the work that you do and, because most jobs are not perfect, consider what would make it a better job from your point of view.

I shall read out a list of characteristics which a job might have, and the question I would like you to answer about each is 'do you have as much of this characteristic in your job and work life as you would like, ideally?'

For your reply we use Card 'N'.

- 11.1 The opportunity to meet challenge in the work.
- 11.2 The prestige that your job carries at work.
- 11.3 The opportunity to talk with others.
- 11.4 The chance to use more of your skills and abilities.
- 11.5 The opportunity to make friends.
- 11.6 The chance to learn new things.
- 11.7 Making decisions about how you do the work.
- 11.8 Having influence over opinions of others at work.
- 11.9 Independence from other people's control.
- 11.10 Being part of a social group.
- 11.11 The status your work carries in your social life.
- 11.12 The opportunity to discuss or question instructions about work.
- 11.13 To be able to work without constant supervision.
- 11.14 Friendly contact with other people.
- 11.15 To be able to extend your abilities further.
- 11.16 Recognition received for your achievements.

RESPONSE CARDS

Card 'W' (for trust and organizational commitment)

- 1. No, I strongly disagree.

2. No, I disagree quite a lot.
3. No, I disagree just a little.
4. I'm not sure.
5. Yes, I agree just a little.
6. Yes, I agree quite a lot.
7. Yes, I strongly agree.

Card 'N' (for personal need non-fulfilment)

1. I have more now than I really want.
2. It's just about right.
3. I would like a little more.
4. I would like considerably more.
5. I would like very much more.

APPENDIX B

Normative data: decile points, means and standard deviations (data based on Study 2).

Trust

	9	9a	9b	9c	9d
	Trust	Faith- peers	Conf.- peers	Faith- mngt	Conf.- mngt
Decile	1	50.0	13.5	10.5	8.4
	2	54.7	15.4	14.0	10.5
	3	58.2	16.7	15.2	12.1
	4	61.0	17.3	16.3	13.3
	5	64.2	17.8	17.4	14.4
	6	65.5	18.3	17.7	15.6
	7	68.5	19.0	18.3	16.8
	8	71.1	19.7	19.5	17.7
	9	75.0	20.4	20.4	18.6
	10	84.0	21.0	21.0	21.0
Mean		63.04	17.77	16.74	14.48
SD		10.23	2.90	3.70	4.10

Organizational commitment

		10 OC	10a Ident.	10b Invol.	10c Loyal
Decile	1	32.0	9.8	12.4	6.5
	2	37.6	12.0	13.7	9.0
	3	41.2	14.2	14.6	10.5
	4	43.6	15.0	15.4	11.7
	5	45.8	16.2	16.3	12.8
	6	47.8	17.0	17.2	14.0
	7	50.5	17.8	17.9	15.0
	8	53.6	18.7	19.1	16.5
	9	56.5	20.0	19.9	18.3
	10	63.0	21.0	21.0	21.0
Mean		45.37	15.77	16.58	12.99
SD		9.56	4.00	3.08	4.49

Personal need non-fulfilment

	11	11a	11b	11c	11d
	PNNF	Soc.	Self- est.	Aut.	Self- act.
Decile	1	31.7	7.2	7.4	7.3
	2	34.4	7.5	7.9	7.7
	3	37.8	7.8	8.5	8.3
	4	39.4	8.2	9.2	9.0
	5	41.6	8.8	10.0	9.6
	6	43.7	9.6	10.9	10.2
	7	47.8	10.5	12.0	11.3
	8	52.7	11.6	13.0	12.4
	9	56.0	13.6	14.7	14.1
	10	79.0	20.0	20.0	20.0
Mean		43.57	10.08	11.07	10.66
SD		9.29	2.58	2.80	2.75