Development of a Measure of Perceived Work Environment (PWE)\textsuperscript{1}

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The purpose of this research program was to develop a comprehensive and reliable measure of employee perceptions of the work environment (PWE). The PWE measure is designed to aid researchers and practitioners in assessing the current state of a given work environment and in evaluating the effect of programs aimed at modifying organized work environments. The PWE scales provide measures of 11 empirically-derived dimensions of perceived work environment. Reliability, validity, and stability data based on five data collections involving 1,200 employees in four organizations indicate that the PWE measure has quite satisfactory psychometric characteristics.

The entire organizational environment (particularly as perceived by the organizational member) is considered to have a very important impact on an individual's motivations, satisfactions, and task performance. A review of the research concerned with the relationships of organizational characteristics to the attitudes and behaviors of organizational members concluded that our present understanding of the actual impact of organized work environments on worker responses is not great (Newman, 1974a). A myriad of objective and perceived characteristics of the work environment have been identified, but few have been related systematically and unequivocally to worker responses. Within studies, there has been a general failure to contend with the complexity of the workers' multifaceted work environment.

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One discovers quickly why there is relatively little systematic knowledge about the impact of organized work environments on employees—in general, we lack measures of work environments that are reliable, valid, and comprehensive (cf., assessments by Campbell, Dunnette, Lawler, & Weick, 1970; Sims & LaFollette, 1975). This is not without reason.

Conceptual problems include: (a) What is the object of analysis? (b) What is the unit of analysis? (c) What level of abstraction is appropriate? (d) What are the desired characteristics of the concept/measure? and (e) What is the distinction of the concept from similar or related concepts?

Methodological problems include (a) variation in instructions to respondents (e.g., describe, evaluate, rate the importance of), (b) failure to specify the focal environmental unit, (c) inadequate response scales, and (d) inappropriate respondent samples.

These and other conceptual and methodological issues have been discussed by Hellriegel and Slocum (1974), Howe and Gavin (1974), James and Jones (1974), LaFollette (1975), Newman (1974a, 1974b), Payne and Pugh (1976), Payne, Fineman, and Wall (1976), and Schneider (1974, 1975). This paper describes an attempt to come to grips with some of these difficult problems in order to meet the need for an adequate instrument for this research domain. It is felt that such an instrument would be of immense value to both researchers and practitioners in assessing the current state of a given work environment (and relating such state to other variables of interest) and in evaluating the effect of programs aimed at modifying organized work environments.

The Place of Perceived Work Environment in the Nomological Network

The theoretical framework underlying the development of the Perceived Work Environment (PWE) instrument assumes that behavior is a function of the person and that person's environment. This Lewinian framework emphasizes the perceptual basis of behavior. Thus, before we can understand human behavior in organizations, we must know how people perceive the environment in which they work.

The framework suggests that a person's perception of work environment stimuli is related to the person's location in the organization and the person's own characteristics (see Newman, 1974b, 1975, for empirical evidence). These perceptions form the basis (i.e., frames of reference) for (but are conceptually different from) that person's evaluations of (attitudes toward) the work environment (Newman 1974b, 1975). The evaluations/attitudes are related, in turn, to notions of person-environment fit which, in turn, are related to work motivation, behavioral intentions, absenteeism, performance, and turnover (a schematic representation of this theoretical framework appears in Newman, 1974b, page 135).

The PWE instrument is designed to assess a person's perceptions of the work environment. These perceptions are, theoretically, nonevaluative. This is extremely important. We are asking organizational members to tell us
what they see in their work environment. We are striving for objective
descriptions of the work environment. At this point, we are not asking the
employees to evaluate (good or bad) what they see in their work en-
vvironment.

Conceptual Basis

Many of the conceptual and methodological issues surrounding the
development of a work environment measure can be resolved by address-
ing the basic question: namely, what is the purpose of the concept and its
measure?

Pertinent questions to ask (answers to them with respect to the PWE
instrument are in parentheses) are (a) Who is going to use it? (researchers
and practitioners), (b) Whose perceptions of the work environment do
we want to measure? (all members of the organization), and (c) For what
are we going to use the perceptions of the work environment? (to gain an
understanding of the relationship between people and their work environ-
ment, to assess the current state of a given work environment, to monitor
changes in a work environment).

Two important criteria for the development of the PWE instrument
were established: It had to be comprehensive and descriptive.

A literature review (Newman 1974a, 1974b) indicated that Campbell’s
measure of organizational climate was considerably more comprehensive
than other available measures (Campbell & Beaty, 1971). Campbell’s
measure, therefore, was used as a foundation for the PWE instrument.

The author’s conceptualization of the work environment included six
general facets: tasks, people, interpersonal relationships, organizational
norms or standard operating procedures, physical setting, and opportunities-
rewards-incentives. Therefore, items were written or adapted from other
measures to insure coverage of all these facets. Because this revision and
extension of Campbell’s measure was considerable, the dimensions of per-
cieved work environment actually assessed by the PWE instrument were
determined empirically.

An additional, critical criterion for the development of this instrument
was that data derived from its use should be amenable to analysis at various
levels (e.g., individual, work group, department, company). To that end,
specific reference to a particular organizational unit was avoided as much
as possible in the wording of the items.

Thus, the basic information derived from the PWE scales is an individual’s
set of perceptions of the work environment as he or she experiences it. To
the extent that an individual’s perceptions match the perceptions of other
individuals in a particular aggregation, a summary index of those shared
perceptions would have utility at that level of aggregation or analysis.
INITIAL INSTRUMENT DEVELOPMENT STUDY

Method

Research Setting, Respondents, and Data Collection Procedure—The data were collected in a questionnaire survey of employees in a Midwest regional office of a large, multiline insurance company. Eighty-nine percent of the employees returned questionnaires in usable condition, yielding an $n$ of 710. The sample included employees from all levels of the hierarchy and from all departments. The 196 males and 514 females responded anonymously.

This initial instrument development study will be referred to as “data collection #1.”

Questionnaire, Instructions, Response Scale, and Scoring—In this initial instrument development phase, extreme care was taken to assure that the questionnaire items were as nonevaluative as possible. This was done by careful writing of items and by having 50 raters (university students) rate the degree of evaluation of each of the items. As a result, 139 items that maximized description, minimized evaluation, and covered the work environment facets mentioned earlier were included in the original instrument.

The instructions asked the respondent to indicate whether or not each item “describes YOUR work environment (as YOU experience and see it)” by circling the “yes,” “no,” or “?” next to the item. Items were scored as “yes” = 3, “?” = 2, and “no” = 1.

Results

Principal Components Analysis—The dimensions of perceived work environment assessed by the instrument were determined by principal components analysis of the work environment perceptions of all organizational members. The number of components retained was based on a plot of eigenvalues against ordinal eigenvector number and the interpretability of the components.

Interpretability of the dimensions was aided by rotating the components to approximate simple structure using the varimax criterion. Items that loaded on several components or on none were eliminated, and the remaining items were component analyzed and rotated again. This process resulted in 60 items defining 11 orthogonal components (pertinent tables are available from the author upon request).

The 11 empirically-derived dimensions of perceived work environment were:

Supervisory Style—The extent to which the supervisor is open, supportive, considerate.

Task Characteristics—The extent to which the jobs/tasks are characterized by variety, challenge, worthwhile accomplishment, etc.
**Performance-Reward Relationships**—The extent to which rewards such as promotions and salary increases are based on performance rather than on other considerations such as favoritism.

**Co-worker Relations**—The extent to which co-workers are trusting, supporting, friendly, cooperative.

**Employee Work Motivation**—The extent to which employees show concern for the quality of their work, try to get ahead, are involved in their work, etc.

**Equipment and Arrangement of People and Equipment**—The extent to which the equipment and the arrangement of people and equipment allow for efficient and effective work operations.

**Employee Competence**—The extent to which the employees have the proper background, training and "know-how" to do what is expected of them.

**Decision Making Policy**—The extent to which employees take part in decisions that affect their work situation.

**Work Space**—The extent to which employees have adequate work space and freedom to move about.

**Pressure to Produce**—The extent to which there are pressures to produce.

**Job Responsibility/Importance**—The extent to which employees see responsibility as part of their job and the work as necessary to the successful operation of the organization.

**Scale Analysis**—Since the PWE principal components were quite "clean," the items that loaded high on the respective dimensions were construed as scale items and a scale analysis was done. Alpha coefficients are presented in the first column of Table 1. The results indicate acceptable levels of reliability (internal consistency) for all of the scales except job responsibility/importance. The latter scale was retained at this stage of developmental research, however, because of interest in it.

Table 2 presents the intercorrelations of the scales as well as their means and standard deviations. The results indicate that the PWE dimensions had low to moderate intercorrelations (median \( r = .30 \); range = \(-.13 \) to \(+.62 \)). This level of intercorrelation does not detract from their usefulness (conceptually and empirically) as relatively discrete work environment dimensions. This is true particularly in light of the relatively manifest and interrelated nature of the work environment stimuli which the employee-respondent acts upon and is describing. In fact, this low to moderate range of intercorrelation provides an opportunity for a relatively sensitive diagnostic analysis of organized work environments.

**Substantive/Construct Validity of the PWE Measure**—Contributions to substantive validity were made by (a) striving to include a comprehensive set of important work environment facets, (b) using only items that had been rated descriptive (as opposed to evaluative), (c) affirming empirically a multidimensional interpretation of perceived work environments (the
TABLE 1

Reliabilities of the PWE Scales

<table>
<thead>
<tr>
<th>PWE Scale</th>
<th>Data Collection</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#1 (n = 710)</td>
<td>#2 (n = 178)</td>
<td>#3 (n = 80)</td>
<td>#4 (n = 155)</td>
<td>#5 (n = 119)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n a</td>
<td>n a</td>
<td>n a</td>
<td>n a</td>
<td>n a</td>
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<tr>
<td>Supervisory style</td>
<td>11 .88</td>
<td>11 .88</td>
<td>11 .88</td>
<td>6 .83</td>
<td>6 .85</td>
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<td>Task characteristics</td>
<td>9 .83</td>
<td>9 .80</td>
<td>9 .86</td>
<td>4 –</td>
<td>4 –</td>
<td></td>
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<tr>
<td>Performance/reward relationship</td>
<td>5 .83</td>
<td>5 .80</td>
<td>5 .79</td>
<td>4 .67</td>
<td>4 .72</td>
<td></td>
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<tr>
<td>Co-worker relations</td>
<td>5 .83</td>
<td>5 .83</td>
<td>5 .74</td>
<td>4 .79</td>
<td>4 .86</td>
<td></td>
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<tr>
<td>Employee motivation</td>
<td>5 .74</td>
<td>5 .66</td>
<td>5 .70</td>
<td>4 .75</td>
<td>4 .76</td>
<td></td>
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<tr>
<td>Equipment/people-equipment arrangement</td>
<td>4 .72</td>
<td>4 .60</td>
<td>4 .53</td>
<td>4 .58</td>
<td>4 .58</td>
<td></td>
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<tr>
<td>Employee competence</td>
<td>5 .78</td>
<td>5 .77</td>
<td>5 .73</td>
<td>3 .76</td>
<td>3 .73</td>
<td></td>
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<tr>
<td>Decision making policy</td>
<td>4 .72</td>
<td>4 .65</td>
<td>4 .72</td>
<td>4 .69</td>
<td>4 .72</td>
<td></td>
</tr>
<tr>
<td>Work space</td>
<td>3 .70</td>
<td>3 .59</td>
<td>3 .66</td>
<td>3 .55</td>
<td>3 .55</td>
<td></td>
</tr>
<tr>
<td>Pressure to produce</td>
<td>6 .55</td>
<td>6 .59</td>
<td>6 .60</td>
<td>6 .63</td>
<td>6 .66</td>
<td></td>
</tr>
<tr>
<td>Job responsibility/importance</td>
<td>3 .39</td>
<td>3 .27</td>
<td>3 .61</td>
<td>— c</td>
<td>— c</td>
<td></td>
</tr>
</tbody>
</table>

a Number of items in scale.

b Alpha coefficients reflecting scale internal consistency.

c Scale excluded from data collection.
<table>
<thead>
<tr>
<th>PWE Scale</th>
<th>n</th>
<th>X</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<tbody>
<tr>
<td>Supervisory style</td>
<td>11</td>
<td>26.0</td>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Task characteristics</td>
<td>9</td>
<td>19.8</td>
<td>5.4</td>
<td>51</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance/reward relationship</td>
<td>5</td>
<td>11.1</td>
<td>3.5</td>
<td>62</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-worker relations</td>
<td>5</td>
<td>11.7</td>
<td>3.4</td>
<td>42</td>
<td>41</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee motivation</td>
<td>5</td>
<td>10.5</td>
<td>3.1</td>
<td>37</td>
<td>48</td>
<td>30</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment/people-equipment arrangement</td>
<td>4</td>
<td>9.6</td>
<td>2.6</td>
<td>34</td>
<td>28</td>
<td>29</td>
<td>34</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee competence</td>
<td>5</td>
<td>11.0</td>
<td>3.4</td>
<td>47</td>
<td>42</td>
<td>40</td>
<td>46</td>
<td>48</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decision making policy</td>
<td>4</td>
<td>7.3</td>
<td>2.8</td>
<td>54</td>
<td>47</td>
<td>46</td>
<td>35</td>
<td>37</td>
<td>25</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work space</td>
<td>3</td>
<td>6.0</td>
<td>2.3</td>
<td>22</td>
<td>12</td>
<td>17</td>
<td>25</td>
<td>17</td>
<td>43</td>
<td>25</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure to produce</td>
<td>6</td>
<td>13.0</td>
<td>3.1</td>
<td>13</td>
<td>09</td>
<td>08</td>
<td>13</td>
<td>00</td>
<td>11</td>
<td>09</td>
<td>09</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Job responsibility/importance</td>
<td>3</td>
<td>8.5</td>
<td>1.0</td>
<td>39</td>
<td>38</td>
<td>36</td>
<td>25</td>
<td>30</td>
<td>27</td>
<td>28</td>
<td>26</td>
<td>16</td>
<td>-05</td>
</tr>
</tbody>
</table>

* a Scale scores were computed by summing the scores on the items in each scale. Decimals are omitted from the correlations. A three-point response scale was used.

* b Number of items in scale.
dimensions being very similar to what was anticipated), and (d) acceptable internal consistency reliability estimates for the principal component-derived scales. (For a worthwhile discussion of the sources of evidence for construct validity see Campbell, 1976.)

The above sources of validity information provided evidence that the PWE instrument could measure what it was designed to measure. The next step in the construct validation of the instrument was to venture some predictions concerning how the PWE measure would relate to other variables in the nomological network and to test these predictions empirically.

Detailed evidence of this type of construct validity for the PWE measure is available in other publications (Newman, 1974b, 1975). In general, those reports indicate that the variables (dimensions) measured by the PWE instrument relate to other variables (i.e., objective organizational structure characteristics, personal characteristics, and job attitudes) as predicted by the theoretical framework on which the instrument is based. More specifically, employees partitioned with respect to various objective organizational characteristics (e.g., hierarchical level, department, work group) and personal characteristics (e.g., sex, age, education) were found to have different perceived work environments and these in turn were found to be related to differences in job attitudes (Newman, 1974b, 1975). These results provided considerable evidence regarding the construct validity of the PWE measure and its utility as an intervening variable.

The differential work environment descriptions were informally corroborated by on-site observations by the research team. Future research objectives include a more systematic assessment of the congruence between employee perceptions of their work environment and other peoples' (expert?) perceptions of that "same" work environment. It must be pointed out, however, that regardless of the congruence between the employees' perceived and the so-called "actual" work environment (as perceived by someone else), employee perceptions have a validity in and of themselves—particularly in light of the perceptual basis of behavior. People respond to what they think exists, not necessarily to what actually exists. This "it is highly desirable but is not absolutely necessary" perspective regarding the external validity of work environment measures does not eliminate the need for internal validity of such measures.

Since many researchers are particularly interested in the relationship between work environment perceptions and job satisfaction, Table 3 presents the results of an analysis relating the PWE data to measures of satisfaction with various job facets. The entire, unpartitioned sample was used for this analysis.

Perceptions of certain work environment dimensions had moderate to high correlations with satisfaction with those same or closely related satisfaction dimensions (e.g., perceptions of supervisory style and satisfaction
TABLE 3
Correlations Between PWE Scales and Measures of Job Satisfaction: Data Collection #1 (n = 710)

<table>
<thead>
<tr>
<th>PWE Scale</th>
<th>Indirect ( a ) Satisfaction</th>
<th>Direct ( b ) Satisfaction</th>
<th>Job in General</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pay</td>
<td>Promotion</td>
<td>Supervision</td>
</tr>
<tr>
<td>Supervisory style</td>
<td>.32</td>
<td>.49</td>
<td>.76</td>
</tr>
<tr>
<td>Task characteristics</td>
<td>.42</td>
<td>.57</td>
<td>.40</td>
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<tr>
<td>Performance/reward relationship</td>
<td>.41</td>
<td>.60</td>
<td>.44</td>
</tr>
<tr>
<td>Co-worker relations</td>
<td>.26</td>
<td>.34</td>
<td>.30</td>
</tr>
<tr>
<td>Employee motivation</td>
<td>.13</td>
<td>.34</td>
<td>.31</td>
</tr>
<tr>
<td>Equipment/people-equipment</td>
<td>.23</td>
<td>.25</td>
<td>.30</td>
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<tr>
<td>arrangement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee competence</td>
<td>.25</td>
<td>.37</td>
<td>.37</td>
</tr>
<tr>
<td>Decision making policy</td>
<td>.24</td>
<td>.45</td>
<td>.45</td>
</tr>
<tr>
<td>Pressure to produce</td>
<td>-.14</td>
<td>-.08</td>
<td>-.11</td>
</tr>
<tr>
<td>Job responsibility/importance</td>
<td>.21</td>
<td>.26</td>
<td>.28</td>
</tr>
</tbody>
</table>

\( a \) Four of the Job Descriptive Index (JDI) scales were used to measure satisfaction "indirectly."

\( b \) Single-item "scales" were used to measure satisfaction "directly" (e.g., How satisfied are you with your work? . . . with your pay?).
with supervisor). The generally low to moderate level of the correlations in Table 3, however, indicated that the PWE scales are not just another measure of job satisfaction (note especially the correlations with satisfaction with job in general). This lends support to the notion that it is possible to develop relatively descriptive (nonevaluative) measures of the work environment as well as evaluative or affective measures of the work situation.

In this regard, it should be noted that the JDI work scale was omitted from this analysis because of its bidimensional nature. Several researchers have found that the JDI work scale contains both descriptive and evaluative items (Smith, Smith, & Rollo, 1974; Snyder & Schneider, 1975; Payne et al., 1976; Joyce, Slocum, Von Glinow, & Hellriegel, 1976). So as not to confound the results unnecessarily, the work scale was left out of this particular analysis.

These results, in light of other similar evidence (summarized in Payne et al., 1976), add support to Payne et al.'s conclusion that satisfaction and perceptions of climate are by no means so strongly related as to make either concept redundant. Thus, while there is evidence of a relationship (as one would expect) between measures of these two concepts, logically and empirically they remain distinct.

**REPLICATION STUDIES**

PWE data were collected in four additional studies. These studies will be referred to as data collections #2 through #5. Before summarizing the empirical properties of the PWE measure provided by these replicative studies, a brief sketch of the nature of the research setting, respondents, instructions, and response scale used in each of these data collections is presented.

**Method**

_Research Setting, Respondents, and Data Collection Procedure_—Data were collected by means of a questionnaire survey of the employees in various regional offices of a large, multiline insurance company. Further information regarding the research setting and the respondents for each study is presented in Table 4.

_Questionnaire, Instructions, Response Scale, and Scoring_—In each data collection, the respondents were asked to describe the work environment as they experienced it. The response scale and scoring procedure that were used in data collection #1 were also used in data collections #2, #4, and #5. A five-point response scale was used in data collection #3 (see Table 4).

The 60-item/11-scale PWE instrument was used for data collections #2 and #3. A shorter, 38-item/9-scale version of the PWE instrument was used for data collections #4 and #5.
# TABLE 4

**Respondent, Questionnaire, and Research Setting Characteristics for Data Collections #1 through #5**

<table>
<thead>
<tr>
<th>Data Collection Number</th>
<th>Research Setting</th>
<th>Respondents</th>
<th>PWE Questionnaire</th>
<th>Number of Items</th>
<th>Number of Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First Midwest Regional Office</td>
<td>Male: 710, Female: 196/514</td>
<td>all, all, all</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Western Regional Office</td>
<td>Male: 178, Female: 17/161</td>
<td>lower and middle, four departments, technical clerical first level supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Second Midwest Regional Office</td>
<td>Male: 80, Female: 14/66</td>
<td>lower and middle, four departments, technical clerical first level supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Southwest Regional Office</td>
<td>Male: 155, Female: 46/109</td>
<td>lower and middle, five departments, technical clerical first level supervisor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Southwest Regional Office</td>
<td>Male: 119, Female: 43/76</td>
<td>lower and middle, five departments, technical clerical first level supervisor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a DC = Data Collection.
Results

Reliability of the PWE Scales—The reliability of the scales that were developed in the initial study was examined for each of the replication studies. The results indicate acceptable levels of reliability (internal consistency) for all of the scales in all of the replications with the one exception of the job responsibility/importance scale in data collection #2 (Table 1).

Intercorrelations of the PWE Scales—Intercorrelations of the scales were also examined for each of the studies. In general, the intercorrelations were quite similar to those presented in Table 2.

Correlations Between PWE Scales and Measures of Job Satisfaction—Also investigated in each of the replications were the correlations between PWE scales and measures of job satisfaction. In general, the correlations were quite similar to those presented in Table 3.

Dimensional Stability—A principal component analysis of the PWE data from each data collection was done to check the underlying factor structure. Interpretations of the resulting factor solutions indicated considerable similarity to the factor structure obtained in data collection #1. To obtain a more quantitative comparison of the factor solutions from the five data collections, factor congruency estimates (Harman, 1971) were calculated between factors having items in common with the component-derived scales obtained in data collection #1.

The factor congruence coefficients ranged from .49 to .95 with a median of .82. These were based on 11-factor solutions for data collections #1, #2, and #3 and nine-factor solutions for data collections #4 and #5. However, it should be noted that, in the replicative studies, factors most similar to the 11 obtained in data collection #1 would come out in larger, 12- to 15-factor solutions. This is encouraging in light of the fact that the replicative studies had much smaller samples relative to data collection #1 and the fact that some of the components initially derived in data collection #1 had only three or four defining items.

The cumulative evidence, then, indicated the underlying factor structure was quite stable across samples and over time (data collections #4 and #5 were parallel samples with administration separated by a three-month period). In summary, the PWE instrument was found to be quite stable in the replication studies—stable with respect to (a) scale reliability, (b) scale intercorrelations, (c) correlations between PWE scales and measures of job satisfaction, and (d) factor structure.

DISCUSSION

Psychometric Properties of the PWE Measure

Results presented in the previous section indicate that the PWE measure has satisfactory psychometric characteristics. The same (or very similar)
underlying dimensional structure was found in each data collection. The reliabilities of the principal component-based scales were generally high, the scales had a satisfactory level of intercorrelation, and the PWE variables related to the variables in the nomological network as predicted by the theoretical framework on which the instrument is based.

Some of the participants in data collection #1 commented on the difficulty in responding to a three-point scale (yes, no, ?). They expressed a desire to indicate to what extent (as opposed to whether or not) an item was descriptive of their work environment. This prompted testing of a five-point scale (see Table 4). Since respondents seem more comfortable responding to a five-point scale, and since it does provide some additional information, the five-point scale is recommended for future data collections.

Future development of this instrument includes a selective pruning and adding of items to the scales to increase their parsimony or reliability as the need be. Also, the generalizability of the dimensional structure of the instrument needs to be examined with data collected in other and different organizations.

Use of the PWE Measure

One of the intended uses of the PWE measure is in diagnosing existing work environments. The instrument provides comprehensive data on how employees are perceiving (experiencing) the work environment. This information can be used as input to activities concerned with job design, work environment design, organization development, etc. In addition to this diagnostic use, the PWE measure can be used to monitor the effects of various interventions in the work environment.

Information provided by the PWE measure can also be used by managers and supervisors to manage their work units (i.e., person/work environment systems). For example, an understanding of how employees are perceiving (or misperceiving) their work environment might suggest some effort be put into educational or communication programs that would lead to more desirable employee perceptions of the work environment and, in turn, to more desirable employee behavior.

In other words, a first step in the practical utilization of the PWE results might be an open sharing of employee and management perceptions of the work environment. This communication process may be an effective problem resolution mechanism in itself, and more traumatic interventions such as redesign of jobs, pay systems, motivational/control systems, etc., may be unnecessary. If they are necessary, they may be aided by this sharing of relevant perceptions.

PWE information can best be utilized when accompanied by other relevant information such as employee opinion surveys, absenteeism/turnover records, performance evaluations, production information, and financial data. Hall, Alexander, Goodale, and Livingstone (1976), for example,
discuss a method for combining the techniques of human resource accounting with survey feedback to provide a more accurate monitoring and managing of corporate investments in people and programs.

Although the PWE measure has not yet been used to examine inter-organizational differences in perceived work environments, it is anticipated that the instrument will be amenable to such a macroorganizational level of analysis. Future research in this regard includes collection of PWE data from a variety of different types of organizations and a comparative analysis of their PWE profiles. Additional discussion of the practical use of the PWE measure is available in Newman (1974a, b; 1975).

In conclusion, it is felt that this program of research has made significant progress in the development of a measure of perceived work environment. It is hoped that others concerned with the assessment and development of work environments that are healthy for individuals and organizations will find it useful.

REFERENCES


17. Schneider, B. "Conceptualizing Organizational Climates" (Research Report 7, University of Maryland, Psychology Department, May, 1974).

