The Development and Validation of the Workplace Trust Survey (WTS): Combining Qualitative and Quantitative Methodologies

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Emotions, Attitudes and Culture Stream

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Abstract

There were two main aims to the present research. The first was to qualitatively further trust content theory by finding a set of dimensions that activate and sustain trust in the workplace. From these dimensions, a second objective was to construct and validate Workplace Trust Survey (WTS) items for measuring trust from different levels within an organisation (organisational, immediate manager, co-worker). The qualitative phase consisted of four focus groups - each divided into management and non-management-conducted within four facilities of the health authority under investigation (N = 31). Definite trust themes were collected using focus group narratives and content analysis. Obtained themes were translated into WTS items, which were screened for content validity via an expert panel. A survey containing the WTS and other items measuring demographics, dispositional trust, transformational leadership, perceived organisational support, affective commitment and turnover intention was distributed to employees within the same health authority where the focus groups were conducted. Quantitative analyses (N = 299) did not support the hypothesis that discriminate cognitive, affective, normative and behavioural intent factors would be uncovered. However, the internal reliability, construct validity, partial known-instrument validity and divergent/convergent validity of the three emergent WTS factors (Trust in Organisation, Trust in Co-workers, Trust in Immediate Manager) was supported. Related to this analysis was the finding that each emergent WTS factor was positively correlated to transformational leadership, perceived organisational support, and affective commitment, yet negatively correlated with turnover intention. Dispositional trust, included as a control variable, had a significant but small correlation with the WTS factors. Demographic variables (age, gender, tenure, position level) also had a negligible impact on trust scores. Theoretical and practical implications of this research are discussed.
THE DEVELOPMENT AND VALIDATION OF THE WORKPLACE TRUST SURVEY (WTS): COMBINING QUALITATIVE AND QUANTITATIVE METHODOLOGY

Trust is indispensable to good working relationships and effective organisational environments (Fairholm, 1993). However, despite its importance there is no ubiquitous definition of the construct and "confusion continues with an increased mixture of approaches and perspectives." (Mistzal (1996, p. 13). Massaco (2000) suggested that workplace trust could be viewed from six bases of enquiry: early experimental, dispositional, sociological, psychological, ethical, and a generalist organisational perspectives. Consequently there has been emerging agreement that trust should be viewed as a complex multidimensional construct (Gillespie, & Mann, 2000; Rousseau, Sitkin, Burt, & Camerer, 1998).

The type and number of dimensions used to frame trust fluctuates across scholars. Levin (1999) suggested that three dimensions could be used to structure an integrative trust perspective; cognitive trust, affective trust and cognitive-affective trust. Extending this, recent empirical evidence suggested that trust might at least have a cognitive, affective and behavioural basis (Albrecht & Stevastos, 1999, 2000; Clark & Payne, 1997; Cummings & Bromiley, 1995). Albrecht and Sevastos (1999) found support for the convergent and discriminant validity of five dimensions of trust in senior managers in their research: dispositional, cognitive, affective, behavioural, and normative-based trust.

Dispositional-Based Trust
Dispositional trust is a personality trait related to a person’s propensity towards trusting people generally. While acknowledging its existence, some organisational theorists have shown little interest in exploring the effect of dispositional trust on trust attitudes (Kramer, 1999). Yet some evidence exists to suggest that individuals vary greatly in their inclination to trust others (Gurtman 1992; Sorrentino, Holmes, Hanna, & Sharp 1995). Based on this assessment, it may be constructive to measure propensity to trust as an individual difference variable when exploring trust in organisational environments.

Cognitive-Based Trust
Trust is most often defined in terms of several interconnected cognitive processes and orientations. Kramer (1999) noted that trust entails a state of perceived vulnerability or risk that is derived from individuals’ expectations regarding the motives, intentions, and prospective actions of others on whom they depend. Lewis and Weigert (1985) characterised trust as the "undertaking of a risky course of action on the confident expectation that all persons involved in the action will act competently and dutifully" (p. 971).

Purely cognitive-based descriptions of trust generally focus on expectations, weighing options and rational decision-making (Levin, 1999). Yet there may be problems with these definitions. Kramer (1999) observed that there is substantial evidence to suggest many assumptions of rational choice models are empirically invalid. Specifically, the extent to which decisions about trust are products of conscious summation and personal value systems is questionable (Kramer, 1999; March, 1994). Other researchers have argued that trust needs to be conceptualised as a
state that includes affective and behavioural components, not just cognition (Bromiley & Cummings 1996; Kramer, 1996; McAllister 1995; Tyler & Degoey, 1996b; Friedman, 1991; Lewis & Weigert 1985; Rempel, Holmes, & Zanna, 1985). In support of their argument, it can be seen that some of the above "cognitive" definitions do include behavioural and affective trust components (e.g. Lewis & Weigert (1985) states that trust involves undertaking action and feelings of confidence in another). In summary, cognitive models of trust may be necessary, but they do not provide a satisfactory account of trust phenomena (Fine & Holyfield, 1996).

**Affect-Based Trust**

Expanding on the cognitive view, Fine and Holyfield (1995) suggested that, "one not only thinks trust, but feels trust" (p. 25). As stated earlier, some trust researchers have incorporated affective elements into their research and writing (Albrecht, & Sevastos, 2000; Tan & Tan, 2000; Gillespie, & Mann, 2000; Mayer, & Davis, 1999; Clark, & Payne, 1997; Cummings & Bromiley, 1996; Rempel et al, 1985; Fox, 1974; Gibb, 1964). Rempel et al (1985), Fox (1974), and Gibb (1964) for example, defined trust in terms of feelings of confidence in another person.

**Normative-Based Trust**

Other influential definitions construe trust as a “normative” expectancy about others, which is influenced by social systems in which people are embedded (Garfinkel, 1963; Luhmann 1988). For example, Barber (1983) characterized trust as a set of "socially learned and socially confirmed expectations that people have of each other, of the organizations and institutions in which they live, and of the natural and moral social orders that set the fundamental understandings for their lives" (p. 164-65). Albrecht and Sevastos (2000) showed that social norms are an important determinant of trusting intentions. In their study on trust in senior managers these researchers demonstrated that beliefs about how others perceived upper management may have an appreciable influence on an individual’s decision to engage in trusting behaviour or not (Albrecht & Sevastos, 1999). Subsequently, it seems that the extent to which an individual perceives significant others in their work environment as being trustworthy may impact on the individual’s planned behaviours.

**Behavioural-Based Approach**

Behavioural intention also consistently appears in the literature as a central conceptualisation of trust (Gillespie & Mann, 2000; Cummings & Bromiley, 1996; Currall & Judge, 1995; Albrecht & Sevastos, 1999). For example, in the case of organisational trust, an employee may be more willing to disclose information to a manager if he/she felt satisfied that the manager would keep it confidential, and if the employee thought that it was standard behaviour amongst his/her colleagues.
the construct of trustworthiness rather than trust itself: “It is the willingness to engage in trusting behaviour…which defines trust” (Albrecht & Sevastos, 2000, p. 36).

**Interrelationships between Trust Dimensions**

While the aforesaid trust categories are theoretically distinguishable, research is equivocal as to whether they are measurable as separate factors. Correlations reported by Cummings and Bromiley (1996) indicated that affective and cognitive trust response modes are almost interchangeable, but both differed somewhat from behavioural intent. However, McAllistar (1996) found that while cognition and affect based trust might be causally connected, each form of trust functioned in a unique manner and had a distinct pattern of association to other variables studied. McAllistar’s research indicates that perceptions of trustworthiness may at least be measurable across distinct cognitive and affective dimensions.

**Trust Definitions**

Trust has been defined in several ways. Culbert and McDonough (1986) contended that "trust pertains to whether or not one individual is able to value what another is up to and demonstrate respect for him or her particularly when the individual's need and those of the person taking the action momentarily compete" (p. 175). Mishra (1996, p. 265) argued that trust is “one party's willingness to be vulnerable to another party based on the belief that the latter party is (a) competent, (b) open, (c) concerned, and (d) reliable”. McAllistar (1995) offered a combination of these ideas and produces a definition of interpersonal trust as "the extent to which a person is confident in, and willing to act on the basis of the words, actions, and decisions of another" (p. 25). Definitions offered by Albrecht and Travaglione (2003) and Currall and Judge (1995) also proposed that trust involves a ‘willingness to act’ under conditions of uncertainty.

A review of these definitions suggests a pattern of meaning. First, trust may involve confidence in the intentions and actions of an individual, group or institution, and the expectation of ethical treatment (Carnevale & Wechsler, 1992). It also signifies an exchange relationship where the trustor is willing to engage in trust behaviours and risk vulnerability to the likelihood that one will not be exploited (Cook & Wall, 1980; Mishra, 1996). In other words, trust involves more than the formation of another’s trustworthiness- there must also be a willingness to act based on those judgements.

**Instruments for Measuring Trust**

The operationalisation of organisational trust has been mired by the lack of an adequate trust instrument, particularly at the organisational level of analysis (Levin, 1999). Two existing trust measures focus on trust in intimate relationships rather than organisational interactions (e.g. Johnson-George & Swap, 1982; Rempel & Holmes, 1986). Others were developed to measure personality only (Rosenberg, 1957; Rotter, 1967, 1971; SRC, 1969; Costa and McCrae, 1992). Other measures that do concentrate on organisational analysis deal only with dyadic interpersonal trust (Larzelere & Hutson, 1980; Holmes, 1986; Butler, 1991; McAllistar, 1995; Shoorman, et al., 1996). Indeed, most available information is based at the individual level concerning the perceived trustworthiness of certain individuals (Fairholm, 1994). Moreover, several other the instruments report inadequate reliability and validity testing (e.g. Hart et al., 1986; Larzelere & Hutson, 1980; Scott, 1980).
At a group level, Cook and Wall (1980) measure “trust in management” and “trust in peers” as clusters rather than focusing on the individual trustworthiness of a specific manager or peer, which is a useful addition to the literature. However, Levin (1999) has called into question the reliability of one dimension in their scale. Further research is needed clarify its psychometric properties.

The work of Albrecht (2001) is also valuable due to his provision of a succinct measure of trust in senior management as a group and because it has a behavioural focus. The parsimonious scale is constructive, as organisational trust does permeate through senior management. Unfortunately, use of the instrument is restricted if one wished to assess the possible effects of peer trust or trust in immediate supervisors.

Cummings and Brommiley’s (1996) OTI scale measures trust between different units within an organisation at a group level, and inter-organisational trust between separate organisations, while Dwivedi’s (1980) measure is one of the only instruments that assesses trust at an organisational level. Missing construct validation information narrows the use of Dwivedi’s scale, and the constrained focus of the OTI (i.e. trust between two departments or organisations) negates its use when aiming to explore trust at different levels within an organisation. In sum, a literature review highlights the absence of an informative measure of workplace trust looking at various echelons within an organisation. Trust research may have to account for each of the possible trust dimensions previously discussed (cognitive, affective, behavioural, normative), keeping in mind the potential overlap between these categories.

Aims and Hypotheses

The present study has two purposes focusing on the understanding and measurement of organisational trust. The first is to further trust content theory via qualitative analysis to find a multi-level set of dimensions that activate and sustain trust in the workplace. The second aim is to construct a reliable and valid scale that is derived from this content theory and could be used to measure the specified organisational trust categories.

The qualitative phase has two hypotheses:

H1: It is possible to ascertain definite trust themes using focus group narratives and content analysis methodology.

H2: It is possible to translate the obtained trust themes into a questionnaire (Workplace Trust Scale, WTS) that measures organisational trust from different levels of analysis.

Two hypotheses are forwarded for the quantitative stage:

H3: Factor analytical investigations will find that the WTS includes discriminate cognitive, affective, normative and behavioural intent dimensions.
H4: Factor analytical investigations and other techniques will find that the constructed WTS is a reliable and valid measure of trust in organisations, despite some items needing elimination or modification.

**STAGE 1: QUALITATIVE APPROACH**

**Method**

**Sample**

Using convenience and random sampling procedures, four focus groups were conducted within the same number of facilities of the health authority under investigation. A total of 31 employees participated and, of these, 19.4% were male and 80.6% were female, which is typical of the gender balance within the organisation overall. Each focus group was divided into two sub-groups, consisting of management (N = 14) and non-management (N = 17). The mean age for the management participants was 50.2 years compared to 39.2 years for the non-management sub-group.

**Procedure**

The qualitative phase of the study proceeded in several stages. The first involved gathering data using focus groups and a modified form of grounded theory. Focus group participants were asked to relate a story concerning when they perceived they were trusted and/or when they trusted someone else in the workplace. Participants were also asked to relate how they felt and what behaviours they exhibited at the time of the incident. As Butler (1991, p. 648) notes, this critical incident method was consistent with Buss and Craik’s (1983) “act frequency analysis” approach to construct validity in that it asked people to nominate specific intentional behaviours related to the operation of trust. Ideas concerning elements of trust were generated by the group and noted by the facilitator, during which time a scribe recorded salient information regarding the dialogue. The next step concerned the coding of transcripts into emergent “trust” themes using content analysis.

### Qualitative Results and Discussion

**Trust Themes**

A number of organisational trust themes arose from the qualitative phase. The theme “care and support” was used as a core category to link each of the subcategory themes. This theme was raised in relation to interpersonal and organisational actions, in that a person or an organisation could be entrusted to look after the interest of employees. For example, interpersonal trust for one participant resulted from a manager “giving me guidance and an offer to ring them and talk to them- they helped me get through a period in which I was having difficulty”.

The subcategory “ethical approach to organisational members” was linked to the perception that individuals will be cared for and supported through fair treatment and the reliability of peers, supervisors and managers, or in a broader sense, organisational processes. This theme was also related to a number of interpersonal issues such as keeping confidences, being honest, consulting where applicable, following through words with actions and giving frequent feedback. These actions and traits would show that the trust referent had integrity and credibility. “Honesty is really important (for trust)” an employee replied, “and knowing that what’s been said is going to kept between the two of you.”
The subcategory of “empowering, recognising and rewarding” was related to a sense that where individual performance was above average it would be supported through recognition, and, if appropriate, rewarded. This theme also concerned job associated support from managers and the organisation through the utilisation of a ‘hands off’ management style, delegation, and the allocation of resources (training) or encouragement to develop new skills through developmental assignments and similar. Informal reward and recognition could also come from a peer acknowledging another’s good performance. One participant felt trusted when she was “given added responsibility, and the renewal of my contract …”. Another trusted the organisation in a time of uncertainty when “processes were put in place to ensure people were recognised for their additional work”.

The subcategory of competency and capability was associated with the knowledge that peers and managers in the organisation have the requisite skills and abilities to perform their duties. This theme was also allied with the notion that the organisation was functioning well, or had the means to move forward for the better. As one employee acknowledged, “(in an organisation) everybody has a job to do. Trust is when you feel that the person is going to do their job. For another, “(Trust) comes from knowing that Organisation X isn’t going to come apart, and by knowing people around you are capable”.

Affective and Behavioural Responses
In addition to noting traits and actions that designate trustworthiness, participants revealed how they felt and reacted when they trusted a person or an organisation. Examples of participant responses are contained in Table 1.

**Table 1**
Affective and Behavioural Responses

<table>
<thead>
<tr>
<th>Trust Categories</th>
<th>Examples of Affective Response</th>
<th>Examples of Actions or Intended Behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Care and support</td>
<td>I feel that I will be assisted.</td>
<td>More likely to reciprocate trust, care and support.</td>
</tr>
<tr>
<td></td>
<td>I am pleased and grateful.</td>
<td>Less likely to leave the job.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More likely to ask others to help when needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>More likely to form an attachment to person and the organisation.</td>
</tr>
<tr>
<td>Ethical approach to organisational</td>
<td>I feel comfortable.</td>
<td>More likely to display trustworthiness themselves.</td>
</tr>
<tr>
<td>members</td>
<td>I feel resistant to uncertainty.</td>
<td>More likely to communicate openly.</td>
</tr>
<tr>
<td></td>
<td>I feel I will be treated fairly.</td>
<td>More likely to be receptive to change.</td>
</tr>
<tr>
<td>Empowering, recognising and rewarding</td>
<td>I feel worthy and have higher</td>
<td>More likely to perform better.</td>
</tr>
<tr>
<td></td>
<td>self-esteem.</td>
<td>More likely to display citizenship behaviours.</td>
</tr>
<tr>
<td></td>
<td>I feel more confident,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>appreciated, motivated and</td>
<td></td>
</tr>
</tbody>
</table>
satisfied.

| Competency and capability | I feel confident in others and in the direction of the organisation. | I feel less stress and worry. | I feel appreciative. | More likely to delegate to others. | More likely to stay at an organisation that is doing well. |

**Study Definition of Organisational Trust**

A conceptual description of organisational trust could also be configured from the qualitative investigation. The definition generated by the analysis was an individual’s willingness to act on the basis of his/her perception of a trust referent (peer, supervisor/manager/organisation) being supportive/caring, ethical, competent and cognisant of others’ performance”. Identifying and defining the construct of interest is the first step in the development of a measure (Springer et al., 2002).

**STAGE 2: QUESTIONNAIRE DEVELOPMENT**

**Method**

Item development began with the conceptual definition and theoretical trust categories identified from the focus group data. The author attempted to create equal numbers of questions relating to each theme within the co-worker, supervisor/manager and organisational level response modes. While each item was conceptually based on the emergent definition from Stage 2 of this study, extant measures (e.g. Cummings & Bromiley, 1996 and Albrecht and Sevastos, 2000) were also taken into account when phrasing questions.

The author developed 72 Likert trust items, 18 each within each of the cognitive, affective, behavioural and normative response modes. Each of these categories contained six questions at the co-worker, supervisor and organisational level. The items were then given independently to three academic experts who have published in the area of organisational trust for an evaluation of face validity. All negatively worded items were deleted due to the problems of measuring distrust as the opposite of trust (Kramer, 1996). An equal number of items were retained in each category. After this course of action, the original 72 items were reduced to 36 questions. The items are attached as Appendix A.

**STAGE 3: QUANTITATIVE APPROACH**

**Method**

**Sample**

299 employees from a large NSW public health organisation participated in the study’s quantitative phase. Twelve per cent of participants were in management or senior management positions, while 88 per cent labelled their position as non-management. 87 per cent of respondents were female and 13 per cent were male. 31.6 per cent of respondents were aged less than 36 years, 46.2 per cent were aged between 37 years and 47 years and 22.2 per cent 48 years or over. The distribution of position level, gender, age and tenure in the sample was representative of the demographics of the authority where the study was conducted. MANOVA revealed no significant differences in trust scores between the employees from different facilities (Wilks =
Development and Validation of the WTS

.95, $F(16, 886) = 1.50, p < .05$, effect size = .02), or between employees at different position levels ($Wilks = .95, F(12, 752) = 1.23, p < .05$, effect size = .017).

**Questionnaire Measures**

A 7-point Likert response format (ranging from 1= Strongly Disagree to 7 = Strongly Agree) was used to measure each of the following:

**Workplace Trust.** In addition to the 36 WTS items developed for the research, ten questions from Cook and Wall's (1980) trust instrument were included in the questionnaire as a comparative measure. Ten items of Cook and Wall’s scale were chosen from two six-item subscales; trust in management and trust in peers. Two negative items were omitted because strong arguments have been forwarded suggesting that it may be unwise to think of distrust as the real opposite of trust (Kramer, 1996). The use of reverse coded trust items, being framed in terms of distrust, may not be tapping into trust. Reliability scores on two different facets of the original subscale were .69 and .78 (Cook & Wall, 1980). The reliability scores for the trust scales for this study were .86 and .87 for trust in management and trust in peers.

**Dispositional Trust (Control Variable).** Five items measure trust as a personality trait. These questions were taken from the trust subscale in the Revised NEO Personality Inventory (Costa & McCrae, 1985). Three negatively worded items from the original scale were not included. These were omitted because of problems with negatively worded trust items (Kramer, 1996). The alpha reliability of the original NEO subscale was .90 (Costa & McCrae, 1985). The reliability coefficient of the scale employed in this study was .85.

**Perceived Organisational Support (POS).** POS is a known determinant to workplace trust (Dirks & Ferrin, 2002). The three questions that measured perceived organisational support were extracted from the short version of the Survey of Perceived Organisational Support (SPOS) instrument devised by Eisenberger et al. (1986). The reliability of the SPOS has been reported as .93 (Eisenberger et al., 1986). The internal reliability of the 3-item construct used for the current study was .92. The three items were chosen from confirmatory factor analysis results (Travaglione, 1998) which purified the POS instrument. Three items are sufficient to define a construct and meet the requirements for the identification of confirmatory factor analytic measurement models (Kline, 1998).

**Transformational Leadership.** This style of leadership is noted as an antecedent to trust in organisations (Dirks & Ferrin, 2002). Seven items measured the transformational leadership levels of respondent's immediate managers / supervisors. These questions were adapted from Den Hartog, Van Muijen & Koopman's (1997) scale of inspirational leadership. The internal reliability coefficient for the items used in the current study was .98.
**Intention to Leave.** This variable was included in the study as it is an outcome of trust (Tan & Tan, 2000). The three-item Intention to Turn Over Scale, contained in the Michigan Organisational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1979), measured intention to leave. The internal reliability of this scale was reported by these researchers as .83. The internal reliability of this scale in the present study was .73.

**Affective Commitment (AC).** AC was included as a product of trust (Albrecht & Travaglione, 2003). The three questions on AC were extracted from the affective component of the three-dimensional Allen and Meyer (1990) commitment instrument. The three items were selected based on confirmatory results that drew out the most parsimonious AC measure from the original scale (Travaglione, et al. 1998). The internal reliability of the scale was .80 for the current study.

**Procedure**

Copies of the survey were distributed to the organisation's payroll service, each with a cover letter and self-addressed return envelope. Payroll staff attached the questionnaire to the pay slips of employees within the target sample. Participant anonymity and confidentiality was assured by having the completed questionnaires directed to the researchers.
Quantitative Results

Table 2 presents the mean scores, standard deviations, scale alphas and split-half reliabilities for the Workplace Trust Scale (WTS) factors, the comparative Cook and Wall (1980) trust scales and the dispositional trust control variable. The WTS was divided into three organisational levels and the four projected dimensions (cognitive, affective, behavioural, normative).

Table 2.
Mean Scores, Standard Deviations (SD), and Reliabilities (a)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Meanabc</th>
<th>SD</th>
<th>a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace Trust Scale (WTS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation Trust</td>
<td>3.61</td>
<td>1.57</td>
<td>.95</td>
</tr>
<tr>
<td>Manager Trust</td>
<td>3.65</td>
<td>1.72</td>
<td>.96</td>
</tr>
<tr>
<td>Co-worker Trust</td>
<td>4.96</td>
<td>1.27</td>
<td>.93</td>
</tr>
<tr>
<td>Cognitive Trust</td>
<td>4.30</td>
<td>1.43</td>
<td>.90</td>
</tr>
<tr>
<td>Affective Trust</td>
<td>4.43</td>
<td>1.37</td>
<td>.89</td>
</tr>
<tr>
<td>Behavioural Trust</td>
<td>4.27</td>
<td>1.45</td>
<td>.91</td>
</tr>
<tr>
<td>Normative Trust</td>
<td>3.96</td>
<td>1.33</td>
<td>.91</td>
</tr>
<tr>
<td>Trust in Managers (Cook and Wall)</td>
<td>3.61</td>
<td>1.73</td>
<td>.93</td>
</tr>
<tr>
<td>Trust in Peers (Cook and Wall)</td>
<td>5.44</td>
<td>1.21</td>
<td>.88</td>
</tr>
<tr>
<td>Dispositional Trust (NEO) Control Variable</td>
<td>5.59</td>
<td>1.07</td>
<td>.85</td>
</tr>
</tbody>
</table>

* Higher scores indicate higher levels for each variable; a Scale Range 1 – 7 for each variable; N = 299

It can be seen that Organisation Trust and Manager trust scores fell below the scale midpoint (4), yet Co-Worker trust was above the midpoint. This result is consistent with findings for Cook and Wall’s (1980) scales, which showed a higher value for trust in peers compared to the trust in management score. The internal reliabilities for the WTS and other scales were consistently high, with coefficient alphas from .85 to .96.

Validity Testing

Factor Analysis

A principal component factor analysis was conducted on the 36-item WTS to test its construct validity. A Scree test showed one sizeable factor (eigenvalue = 19.01) followed by three others with eigenvalues of 3.94, 1.9, and 1.1. These four factors explained a total of 72% of the variance in WTS scores.
The four selected factors were rotated to oblique simple structure. However the resultant correlations did not load cleanly onto four factors. Hence a three-factor solution was examined. Initial results showed little support for the affective, cognitive, behavioural and social normative dimensions of the third hypotheses and previous theoretical discussion. 14 of the 36 items mapped onto Factor 1. This factor contained two affective, three cognitive, two behavioural and five normative items. All but two of these items were at the organisational level, and one loaded moderately on both this factor and Factor 3. Apart from these three anomalies loadings and item descriptions suggest that Factor 1 might be referred to as “Trust in Organisation”. All 12 items loading on Factor 2 related to trust at a peer level. This factor might be interpreted as “Trust in Co-Workers”. The items strongly loading on Factor 3 all refer to interpersonal trust in a manager and might then be referred to as “Trust in Immediate Manager”. In this analysis, this factor had uniformly negative coefficients. The sign of the loadings was reversed so that a higher score indicated a higher level of ability across tasks. Similarly, the sign of the factor scores and scales based on Factor 3 were also changed. This procedure simplifies the presentation and discussion of results while remaining consistent with the substantive findings (Mayer, Caruso, & Salovey, 1999). One item loaded moderately onto both Factor 1 and Factor 3.

While the internal reliabilities of the emergent factors were very high (all over .94), the factor analysis was improved by removing the items that did not clearly differentiate between factors and items that did not show content validity with their relevant factor (i.e. Items 43 and 46 which refer to manager trust within the emergent “Trust in Organisation” factor). Table 3 displays the results of running the factor analysis with the remaining 28 items.

Table 3 shows three well-defined factors. Again, it is possible to interpret these as Trust in Organisation, Trust in Co-Workers and Trust in Immediate Manager. Internal reliabilities were all over .94 despite the reduction in the number of items.
Table 3. Item Description and Oblimin-rotated factor loadings on three factors with four items omitted

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 There is a widely held belief that X is moving forward for the</td>
<td>.93</td>
<td>-</td>
<td>-.21</td>
</tr>
<tr>
<td>better</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 I have positive feelings about the future direction of X</td>
<td>.82</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8 I honestly express my opinion at X with the knowledge that</td>
<td>.82</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>employee views are valued</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 I think that X offers a supportive environment</td>
<td>.74</td>
<td>-</td>
<td>.17</td>
</tr>
<tr>
<td>20 I believe that X recognises and rewards employees' skills and</td>
<td>.73</td>
<td>-</td>
<td>.14</td>
</tr>
<tr>
<td>abilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 It is generally accepted that X takes care of employee interests</td>
<td>.70</td>
<td>.12</td>
<td>.18</td>
</tr>
<tr>
<td>13 I perform knowing that X will recognize my work</td>
<td>.69</td>
<td>-</td>
<td>.21</td>
</tr>
<tr>
<td>7 I think that processes within X are fair</td>
<td>.67</td>
<td>-</td>
<td>.17</td>
</tr>
<tr>
<td>38 Employees commonly believe that they are treated fairly at X</td>
<td>.65</td>
<td>.16</td>
<td>.15</td>
</tr>
<tr>
<td>29 I act on the basis that X follows plans with action</td>
<td>.60</td>
<td>-</td>
<td>.24</td>
</tr>
<tr>
<td>6 I feel that information can be shared openly within X</td>
<td>.52</td>
<td>.15</td>
<td>.13</td>
</tr>
<tr>
<td><strong>Factor 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44 I feel that I can trust my co-workers to do their jobs well</td>
<td>-.20</td>
<td>.87</td>
<td>-</td>
</tr>
<tr>
<td>35 I proceed with the knowledge that my co-workers are</td>
<td>-</td>
<td>.84</td>
<td>-</td>
</tr>
<tr>
<td>considerate of my interests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39 I believe that my co-workers support me if I have problems</td>
<td>-</td>
<td>.84</td>
<td>-</td>
</tr>
<tr>
<td>32 Most employees at X believe that co-workers are reliable</td>
<td>-</td>
<td>.83</td>
<td>.12</td>
</tr>
<tr>
<td>30 I feel confident that my coworkers appreciate my good work</td>
<td>-</td>
<td>.79</td>
<td>-</td>
</tr>
<tr>
<td>24 I feel that my co-workers are truthful in their dealings with me</td>
<td>-.10</td>
<td>.79</td>
<td>.19</td>
</tr>
<tr>
<td>12 I think that my co-workers act reliably from one moment to the</td>
<td>-</td>
<td>.79</td>
<td>-</td>
</tr>
<tr>
<td>next</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 I will act on the foundation that my co-workers display ethical</td>
<td>-</td>
<td>.74</td>
<td>.19</td>
</tr>
<tr>
<td>behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Most employees at X believe that co-workers will be supportive</td>
<td>.13</td>
<td>.74</td>
<td>-</td>
</tr>
<tr>
<td>if problems arise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47 I believe that my co-workers give me all the information to</td>
<td>-</td>
<td>.73</td>
<td>-</td>
</tr>
<tr>
<td>assist me at work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Employees at X generally feel that coworkers appreciate their</td>
<td>.23</td>
<td>.73</td>
<td>.17</td>
</tr>
<tr>
<td>quality performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 I behave on the basis that my coworkers will not disclose</td>
<td>-</td>
<td>.63</td>
<td>-</td>
</tr>
<tr>
<td>personal information</td>
<td></td>
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</table>

Continued...
Table 3.

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 I feel that my manager at X listens to what I have to say</td>
<td>.11</td>
<td>-</td>
<td>.87</td>
</tr>
<tr>
<td>25 I proceed on the basis that my manager will act in good faith</td>
<td>-</td>
<td>-</td>
<td>.86</td>
</tr>
<tr>
<td>51 I act on the basis that my manager displays integrity in his/her actions</td>
<td>-</td>
<td>-</td>
<td>.86</td>
</tr>
<tr>
<td>27 I think that my manager appreciates additional efforts I make</td>
<td>-</td>
<td>-</td>
<td>.85</td>
</tr>
<tr>
<td>31 I act knowing that my manager will keep his/her word</td>
<td>-</td>
<td>-</td>
<td>.84</td>
</tr>
<tr>
<td>33 I believe that my manager follows words through with action</td>
<td>-</td>
<td>-</td>
<td>.83</td>
</tr>
<tr>
<td>40 I feel that my manager is available when needed</td>
<td>-</td>
<td>-</td>
<td>.81</td>
</tr>
<tr>
<td>11 I feel that my manager keeps personal discussions confidential</td>
<td>-</td>
<td>-</td>
<td>.75</td>
</tr>
<tr>
<td>14 I feel that my manager trusts his/her employees to work without excessive supervision</td>
<td>-</td>
<td>-</td>
<td>.74</td>
</tr>
</tbody>
</table>

Eigenvalue | 16.83 | 3.76 | 1.75 |
% var       | 52.57 | 11.74 | 5.47 |
∝           | 95    | 94    | 95    |

X = name of organisation; Coefficients < .1 suppressed; ∝ = Internal Reliability Coefficient; * Items load onto more than one factor or do not share face validity with other items loading onto the factor

Correlations between the WTS Factors and Cook and Wall Trust Factors

To further support interpretation and known-instruments concurrent criterion validity, the three emergent factors were correlated with Cook and Wall’s (1980) Trust in Peers and Trust in Management subscales. To the extent that participants’ scores on the WTS can be correlated with their scores on a supported measure, known-instruments validity is established. Factor 1 (Trust in Organisation) correlated highly with the Cook and Wall Trust in Management score, \( r = .91, p < .01 \), indicating the scales both measured trust at an organisational level. Factor 2 (Trust in Co-workers) also correlated very highly with Cook and Wall’s Trust in Peers subscale, \( r = .93, p < .01 \), which further supports the interpretation of Factor 2 dealing with trust at a peer level. Factor 3 (Trust in Immediate Manager) was moderately correlated with the other two emergent WTS factors (\( r = .52, p < 0.01 \) and \( r = .65, p <0.01 \) respectively). Likewise, Factor 3 (Trust in Immediate Manager) was correlated with both Cook and Wall’s subscales.

Relationships between the WTC and Other Factors

The WTC factor scores were correlated with other variables to ascertain the convergent and divergent construct validity of the scale. The results of the correlational analysis are shown as Table 9.
Table 4.
Intercorrelations between the WTS Factors and other Variables

<table>
<thead>
<tr>
<th>Variables</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>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. WTS Trust in Org.</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. WTS Trust in Co-worker</td>
<td>.46**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. WTS Trust in Manager</td>
<td>.65**</td>
<td>.52**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Trans. Leadership</td>
<td>.59**</td>
<td>.46**</td>
<td>.83**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Affective Commitment</td>
<td>.55**</td>
<td>.36**</td>
<td>.45**</td>
<td>.47**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Perceived Org. Support</td>
<td>.76**</td>
<td>.39**</td>
<td>.54**</td>
<td>.56**</td>
<td>.61**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Turnover Intention</td>
<td>-.34**</td>
<td>-.37**</td>
<td>-.4**</td>
<td>-.35**</td>
<td>-.48**</td>
<td>-.37**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Age</td>
<td>-.03</td>
<td>-.03</td>
<td>.06</td>
<td>-.03</td>
<td>.12</td>
<td>-.07</td>
<td>-.14*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Gender</td>
<td>.11</td>
<td>.04</td>
<td>.07</td>
<td>.10</td>
<td>.02</td>
<td>.11</td>
<td>-.08</td>
<td>-.01</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Tenure</td>
<td>-.17</td>
<td>-.09</td>
<td>.18*</td>
<td>-.13</td>
<td>.02</td>
<td>-.12</td>
<td>.01</td>
<td>.49**</td>
<td>.07</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Position Level</td>
<td>.12</td>
<td>.02</td>
<td>.09</td>
<td>.02</td>
<td>.07</td>
<td>-.15*</td>
<td>.12</td>
<td>.53**</td>
<td>.10</td>
<td>.49**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>12. Dispositional Trust</td>
<td>.38**</td>
<td>.36**</td>
<td>.25**</td>
<td>.16</td>
<td>.20**</td>
<td>.24**</td>
<td>-.10</td>
<td>.09</td>
<td>.10</td>
<td>.10</td>
<td>.08</td>
<td>-</td>
</tr>
</tbody>
</table>

*Correlation is significant at the .05 level (2-tailed); **Correlation is significant at the .01 level (2-tailed)
Supporting convergent validity, the columns show that each WTS factor has a significant relationship with each of the convergent variables. While some relationships are stronger than others, higher trust at all levels was positively related to perceptions of support, transformational leadership and affective commitment. Respondents also reported lowered intention to leave when trust was evident.

Evidence of the WTS factors’ discriminant validity was also established. With one exception, the demographic variables of age, gender, position level and tenure revealed no significant correlations with the three factors. The one inconsistency was a significant correlation between WTS Trust in Manager and tenure. However, the effect size ($r = -.18, p < .05$), though significant, was very small and likely unimportant. Table 4 also shows that dispositional trust had a significant, yet small ($r = .25, .05 < r < .38 < .05$) relationship with each of the three trust factors.

**WTS Item Correlations**

An inter-item correlation coefficient matrix was calculated for the 36-item WTS. The average correlation coefficient for the WTS equalled .53 across the three factors.

**Quantitative Discussion**

The aim of the quantitative phase of the research was to investigate the reliability and validity of the WTS, which was designed to measure specific trust domains. Against predictions of the combined study’s third hypothesis, factor analytical investigations did not support the construct validity of the cognitive, affective, normative and behavioural intent dimensions. Instead, the emergent factors were: Trust in Organisation, Trust in Co-worker, and Trust in Immediate Manager. Further investigations backed the internal reliability and validity of the emergent factors, despite some items warranting elimination. This examination found that the amended WTS was a reliable and valid measure of trust in organisations, supporting the study’s fourth hypothesis. Thus this study developed and demonstrated the reliability and validity of a set of items for measuring trust at various levels within an organisation. The notion of trust stemming from different levels offers a significant contribution to the trust literature, particularly in the void pointed out by Fairholm (1994) in relation to how trust and trusting cultures are created. Relationships between trust factors and other organisational variables also supported the importance of trust in organisations.

**Theoretical Insights**

The results concerning the third hypothesis cast doubt on whether cognitive, affective, behavioural and social normative trust can be measured differentially. Fishbein and Ajzen (1975) instruct that cognition should be modelled separately from affective attitudes and subsequent behaviour. The findings are in opposition to some existing empirical evidence suggesting that trust, at least, can be measured using cognitive, affective (McAllister, 1995), and behavioural bases (Albrecht & Stevastos, 1999; Clark & Payne, 1997). The earlier literature review revealed unequivocally that trust in a complex multidimensional construct that involves thoughts, feelings and actions. A likely explanation for the results is that the hypothesized trust dimensions are separate constructs, yet participants did not distinguish between them due to subtle differences in item wording. Substantiation for this point comes from the work of Cummings and Brommily (1996) who used similar prefixes (“We think”, “We feel”,...
“We intend to behave…”) to those implemented in the WTS. In direct contrast to McAllistar’s (1995) findings, the correlations between Cummings and Brommiley’s affective and cognitive response modes indicated these factors were indistinguishable.

Results of factor analytical methods and reliability testing demonstrated acceptable psychometric properties of a set of items for measuring trust at three levels within an organisation (Hypothesis 2). The construct validity of the Trust in Organisation, Trust in Co-worker and Trust in Immediate Manager factors was corroborated when each item in the amended WTS loaded on just one factor. Researchers seeking a broad overview of organisational trust may subsequently choose to include an examination of these trust levels and their differential effects. That is, as well as examining trust between a person and an individual manager, the dynamics between a person, an organisation, or group of co-workers may also lead to interesting insights. An important question in this regard is what levels (manager, co-workers, organisation) are most critical to creating a climate of trust within organisations? (Masacco, 2000) For example, if empirical or anecdotal evidence indicates that the organisational level is the most important, then it becomes vital to implement a measure containing aggregate-focused items such as the WTS. This is, however, dependant on the organisation being studied. The most critical level for companies would doubtless depend on their organisational structure. In self-directed team-based structures that operate without direct supervision, co-worker trust would presumably be most important. In more hierarchical structures, trust in one’s immediate manager or the organisation may be of greater significance to organisational effectiveness.

**Trust and its Correlates**

While some relationships were stronger than others, findings demonstrated that higher trust at each organisational level (Trust in Organisation, Trust in Immediate Manager, Trust in Coworkers) was positively related to perceptions of support, transformational leadership and affective commitment. Respondents also reported lowered intention to leave when trust was evident. These findings lend support to the literature noting transformational leadership (e.g. Dirks & Ferrin, 2002) and perceived support (e.g. Tan & Tan, 2000) as antecedents of trust, and turnover intention and affective commitment as probable consequences (e.g. Albrecht & Travaglione, 2003). The current findings consequently authenticate the convergent validity of the WTS factors, which correlated as expected with theoretically relevant variables.

Interesting findings concerning WTS Trust in Co-worker were also evidenced in the study. The correlations between Trust in Co-worker, POS, turnover intention, and affective commitment were similar to those found in studies detailing relationships with "trust in management" or "trust in organisation" (Tan & Tan, 2000; Whitener, 2001; Whitener, Brodt, Korsgaard, Werner, 1998; Mishra, & Morrissey, 1990; Albrecht & Travaglione, 2003; Laschinger, et al., 2000). Our research also extended that of Cook and Wall's (1980) investigations into the correlates of peer trust. Similar to Cook and Wall's findings, the results found a link between trust at the coworker level and organisational commitment. While the current results are not comparable to most other trust research, it is intuitively acceptable that co-worker trust also facilitates commitment and a desire to stay in a job. The results of the current study offer further empirical evidence of Cohen and Prusak’s (2000) idea that
co-worker trust is genuinely linked the production of social capital within organisations.

The Influence of Dispositional Trust and Demographics

Dispositional trust had a significant influence on the trust factor scores, which advocates the inclusion of a dispositional measure when surveying trust in organisations. However, the impact of this personality variable was relatively small (approx. $r = .35$). The results showed that situational rather than dispositional trust or demographic factors were the most important predictors of organisational outcomes. Also, the findings contradict Rotter’s (1967, 1971) assertion that a person’s disposition towards trusting others is more predictable in unfamiliar situations. The impact of this personality factor on the trust factors was similar regardless of the level of analysis (organisation, co-workers, or immediate manager).

The non-significant relationships found between the demographic variables and the WTS trust factors endorse the divergent validity of the scale. Practically, if demographics were shown to have a weighty effect on trust scores, then organisations would have little hope of impacting on trust within the workplace; trust levels would be preset. Fortunately this does not seem to be the case, and many organisational implications can be implied from the study.

Practical Implications

At a practical level, it is noteworthy that the influential antecedent factors in the study fall within the control of organisational members and organisational psychology professionals. First, managers may be encouraged to adopt a transformational leadership orientation. Trust is particularly important in organisations characterised by uncertainty and change (Currall & Judge, 1995), and transformational leadership has been characterised as being able to bring about change, a prerequisite of contemporary organisational survival. Furthermore, transformational leadership capability can be used in selection and succession planning for new job-holders and trained and developed for existing job holders (Davidson & Griffin, 2002). Organisational psychologists or other human resource professionals may assist leaders and employees in the management of change by the development and implementation of training programs that foster interpersonal skills involved in engendering trust.

On a related point, the WTS items could be used to measure workplace trust climate. Implemented as an organisational evaluation tool before and after culture change programs, it could help determine whether the change strategies have been successful in trust facilitation. It can also provide a snapshot of trust for organisations interested in general levels within the organisations. In this role, the WTS would be appropriate for inclusion in annual staff opinion surveys.

Limitations

Despite the utility of the research, the study has several methodological limitations. The first is that the WTS is still at an early stage of development and the findings of the current research may not be generalisable. Test-retest reliability must also be explored to further support the items’ psychometric adequacy. Relatedly, norms must be generated for relevant subgroups such as managers, non-managers and gender. The current sample was biased towards female non-managers, and while the
management and gender distribution was representative of the population within the organisation studied it is uncharacteristic of many others. The relatively low response rate (26 percent) could also be a concern in terms of sample bias.

**Directions for Future Research**

While the sample bias was unavoidable, some of the methodological concerns can be addressed in future studies. Longitudinal designs and the use of structural equations modelling are encouraged to refine possible relationships and distinguish causal directions. Confirmatory methods should also be implemented to further support the WTS factor structure. Future studies may want to focus on determining whether independent scales can be identified and reliably constructed to measure aspects of underlying cognitive, affective, behavioural and normative dimensions. The behavioural approach to measuring trust seems to be gaining particular momentum (Albrecht & Sevastos, 2000; Gillespie & Mann, 2003). In addition, while this study would recommend removing four anomalous items from the WTS, it is also questionable whether to do so before they are tested on additional samples. Additional outcomes of trust might also be explored in future studies, for example, organisational citizenship behaviour, cynicism to change, absence, and performance. Other determinants may include openness of communication, justice, need fulfilment, and psychological contract breach. Gender differences might also usefully be researched.

**CONCLUSIONS**

The present dissertation combined qualitative and quantitative methods to explore organisational trust and to subsequently develop and test Workplace Trust Survey (WTS) items. It could be said that the satisfaction of the study’s objectives has also fulfilled Kramer’s (1996) call for more trust research that implements a conjunctive qualitative/quantitative design.

With the importance of trust only likely to grow in view of continued turbulent workplace environments, organisational practitioners need to be cognisant of the dynamics of trust formation and propagation. Organisations that provide access to information, resources, support and encourage an empowering facilitative leadership style focusing on coordination and integration are more likely to foster trust within organisations (Kanter, 1977). Some of the benefits of trust, and measuring trust, have been documented within this paper, suggesting that trust development be incorporated into new ways of thinking about management and the practice of organisational psychology.

**References**


