

DEVELOPING A TRUST MODEL FOR ASSISTING MANAGEMENT DURING CHANGE

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OPSOMMING

Die studie ondersoek die verhouding tussen die Groot Vyf ("Big Five") persoonlikheidsdimensies en bestuurspraktyke en die dimensie van vertroue tussen bestuur en werknemers. Die Groot Vyf dimensies is konsensieusheid, eenstemmigheid, emosionele stabiliteit, vernuftigheid en ekstrovertsie. Die bestuurspraktyke is kredietwaardigheid, spanbestuur, die deel van inligting en werksondersteuning. Die resultate dui aan dat die bestuurspraktyke 'n invloed het op die verhouding tussen bestuur en werknemers. Wat die Groot Vyf dimensies aanbetref, is 'n swakker verhouding met die dimensie van vertroue bevind. Alhoewel dit skyn asof daar 'n swakker verhouding tussen die Groot Vyf en die dimensie van vertroue is, toon die relatiewe goeie passing van die model dat beide die bestuurspraktyke en die Groot Vyf persoonlikheidsaspekte van die bestuurder die verhouding tussen bestuur en werknemers mag beïnvloed. Die resultate hou verskeie implikasies in vir die verhoudinge tussen bestuur en werknemers en spesifiek in die areas van keuring, werwing en aanstelling van bestuurders en die rol van bestuurders gedurende verandering.

ABSTRACT

This study investigates the relation of the "Big Five" personality dimensions and managerial practices to the dimension of trust relationships between managers and employees. The "Big Five" dimensions are conscientiousness, agreeableness, emotional stability, resourcefulness and extraversion. Managerial practices are credibility, team management, information sharing and work support. Results indicate that managerial practices have an influence on the trust relationships between managers and employees. For the "Big Five" personality dimensions, a weaker relationship with the dimension of trust was obtained. Although there appears to be a weaker relationship between the "Big Five" and the dimension of trust relationships, the relatively good fit of the model indicates that an overall implication of the model is that both managerial practices and the "Big Five" personality aspects of the manager might influence his/her subordinates indirectly. These findings have numerous implications for the relationships between managers and employees, especially in the selection, recruitment and appointment of managers and the role of managers during transformation.

Interest in the concept of trust grew throughout the 1980s and into the 1990s (Creed & Miles, 1996) and trust has been studied from a variety of perspectives over the past several decades (Kipnis, 1996). Global trends in the 1990s saw a sharp upsurge in re-engineering, mergers, outsourcing and downsizing that suddenly affected company levels that, for years, had been havens of job security (Bews & Martins, 1996). In South Africa, organisations immune to this type of change under the old order have recently had their foundations shaken by drastic change, re-engineering, downsizing, ferocious global competition and the implementation of the new labour laws. These changes have led to a shift on both sides of the employment contract which is leading to a widening of the trust gap between employees and their employers. These new organisational arrangements have fractured the bonds of loyalty which made trust possible in the past. The new trust takes time to develop (Reynolds, 1997). According to Robbins (1999), trust takes a long time to build, can be easily destroyed, and is hard to regain. Also, since trust begets distrust, maintaining trust requires careful attention from management.

Models of trust

Trust has been dealt with at a multidisciplinary level by numerous scholars (Hiltrap, 1995; Horton & Reid, 1991; Howard, 1996; Kramer & Tyler, 1996; Mayer, Davis & Schoorman, 1993;) which has led to the accumulation of a great deal of knowledge on the subject. However, there is little evidence of an effort to integrate this knowledge and to build a comprehensive theory of trust (Lewicki & Bunker, 1996).

In the South African context, the concept of trust is even more important if we consider the impact of culture, work ethics, language, politics, dress codes, time management, basic values, and all the other prejudices influencing relationships. Whom do we trust? Those we can understand; those most predictable to us. Who are they? Those who are most like ourselves (Ritvo,

Litwin & Butler, 1995). In many organisations, the level of trust among key groups is low. Different groups often have not only divergent objectives, but also differing points of view on how the business should operate (Shaw, 1997). According to Shaw (1997), people who cannot trust each other will end up cooperating only under a system of formal rules and regulations, which may have to be negotiated and enforced, sometimes by coercive means.

Current trends in the changing workforce composition and the implementation of the new Employment Equity Bill in South Africa suggest that the importance of trust is likely to increase during the next few years. The changing South African environment emphasises the need to develop a model of trust in organisations. Various researchers have highlighted different aspects and dimensions of trust in an effort to develop a theory of trust. Towards this end, Mayer, Davis & Schoorman (1995) proposed that the characteristics of the trustee, as well as the trustor, must be considered. Their proposed model also differentiates between factors that cause trust, trust itself and outcomes of trust. According to Shaw (1997), the key imperatives in building high-trust organisations and teams are achieving results, acting with integrity, and demonstrating concern. Shaw (1997) identified the key leverage points as leadership practices, organisational architecture and organisational culture. Mishra (1996) also emphasises the importance of competency, openness, concern and reliability. According to Robbins (1996), recent research has identified five dimensions that underly the concept of trust:

Integrity	: honesty and trustfulness
Competence	: technical and interpersonal knowledge and skills
Consistency	: reliability, predictability, and good judgement in handling situations
Loyalty	: willingness to protect and save face for a person
Openness	: willingness to share ideas and information freely

What is now needed is an interdisciplinary rather than a multidisciplinary approach, with the aim of forming a theory of trust. Further investigation of the possible antecedents of trust (or mistrust) led to the assumption that trust within companies is probably created by personal factors and managerial practices (Martins, 1998).

Definition of trust

Various definitions of trust have emerged based on the researchers' disciplinary focus, for instance:

- Trust: Belief that those on whom we depend will meet our expectations of them (Shaw, 1997).
 Trust: Characteristic of high-performance teams where members believe in the integrity, character, and ability of each other (Robbins, 1996)
 Trust: The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party (Mayer, et al., 1993)
 Trust: Reciprocal faith in others' intentions and behaviour (Kreitner & Kinicki, 1995)

These definitions show that trust appears to be a dynamic phenomenon that depends on the interplay of various factors that might affect the building of a model of trust.

Various characteristics appear to emerge from the current models and definitions, which focus on features such as integrity, competence, openness, vulnerability, reliability and expectations, and also on the role of the trustee and trustor. It appears that most researchers focus on only some aspects or characteristics of trust. Given this, trust can be defined as the process where a trustor relies on a trustee (a person or group of people) to act according to specific expectations that are important to the trustor or without taking advantage of the vulnerability of the trustor.

Studies by various researchers (Bert & Knez, 1996; Lewicki & Bunker, 1996; Mayer, et al. 1993; Mishra, 1996; Robbins, 1996) have led to a set of dimensions that might measure trust:

- competency, ability
- loyalty, concern, benevolence
- fairness, consistency, reliability
- integrity
- openness
- history
- personality characteristics
- propensity

Previous research

Research done during 1995/1996 by the Centre of Industrial and Organisational Psychology at Unisa, to investigate the possible antecedents of trust (or mistrust) led to the assumption that trust within companies is probably created by personal factors and managerial practices. Many unsuccessful attempts at associating work performance with personality aspects are well known to industry. Recent research (on which consensus has widely been reached) has, however, shown that five personality aspects, popularly referred to as the "Big Five", tend to significantly predict work performance in industrial settings (Nelson & Quick, 2000., Robbins, 1996). The five factors are: agreeableness, conscientiousness, openness to experience (resourcefulness), emotional stability and extraversion. In this audit, these personality factors were viewed as possible antecedents of interpersonal trust among superiors and subordinates (Harvey, Murray & Markham, 1995; Martins, Watkins, Von der Ohe & de Beer, 1997).

With regard to managerial practices, a more pragmatic approach was followed in that interviews with more than 100 employees were conducted to establish what managers and supervisors can do to enhance trust in their organisation. These responses were operationalised by compiling a questionnaire with items related to the presence of managerial practices which enhance trust within an organisation. A sample of 475 employees from six com-

panies participated in the preliminary analysis of the proposed model. The effect of personality aspects and managerial practices on a trust indicator was determined. For this purpose the following five questions related to openness, honesty, fairness, intentions and belief were included:

- I have an open, trusting relationship with the person I report to
 The person I report to openly and honestly reveals important work-related facts to me
 The person I report to is fair in judging my performances
 The person I report to demonstrates good intentions and motives towards me
 I can believe what the person I report to says

The content validity of the questionnaire was evaluated by means of factor and path analysis using structural equation modelling (Jöreskog & Sörbom, 1993a). The LISREL-software package was used to analyse the data (Jöreskog & Sörbom, 1993b). The results of these procedures indicated that the questionnaire measures what it is supposed to measure. The goodness-of-fit index (GFI) was 0,95, the adjusted-goodness-of-fit index (AGFI) was 0,91 and the parsimony-goodness-of-fit index (PGFI) was 0,50 (Watkins, 1997). All these goodness-of-fit-indexes indicated a good model fit according to Schumacher and Lomax (1996). A GFI with a value close to 0,90 reflects a good fit, AGFI with a value of 0,90 a good model fit and PGFI, 0 (no fit) to 1 (perfect fit).

Information sharing, work support, credibility and team management were important manifestations of managerial practices, which in turn indicated a significant manifestation of trust. The so-called "Big Five" personality characteristics were significant manifestations of the personality factors which were also meaningful manifestations of trust. Needless to say, the five items of the trust indicator were also significant indicators of trust. A factor analysis and path analysis of the items in the questionnaire were performed and the results can be explained by means of the model provided in Figure 1. With regard to the reliability, which indicates how accurately the questionnaire measures what is supposed to be measured, highly satisfactory results were also found with alpha coefficients ranging between 0,85 and 0,95 for the "Big Five" as well as for the managerial practices subdimensions (Martins, et al., 1997). The model made it useful to ascertain the underlying causes of trust or distrust and might indicate aspects of managerial practices and personality traits of superiors which tend to influence levels of trust within a company.

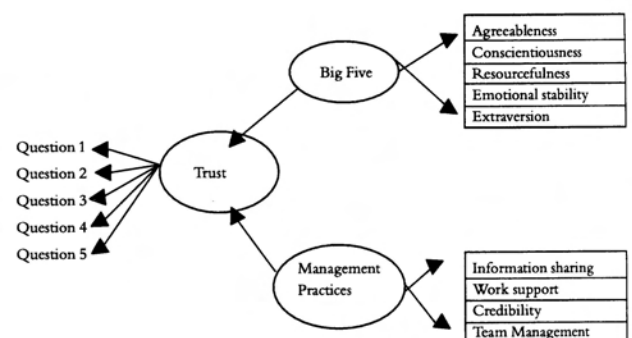


Figure 1: Conceptual model of the manifestations of trust in organisations

Although the results of the research appear to be positive, researchers (Schumacher & Lomax, 1996) often require a much larger sample size to maintain accuracy of estimates and to ensure representativeness. The minimum satisfactory sample required for structural equation models is 400 respondents.

The positive results of these preliminary analyses and model encouraged the researcher to continue gathering data and to validate a model that can be used to predict the development of trust in organisations.

METHOD

Purpose

Using the model and dimensions of the preliminary analysis, organisations were invited to participate in a trust audit in order to:

- compare trust levels of participating organisations
- compare trust levels of the different job levels
- discuss strengths and weaknesses regarding trust levels; and make suggestions/recommendations on how to increase or maintain the levels of trust in an organisation

A covering letter that explained the purpose of the survey was included with the questionnaire. A contact person at each company assisted with the distribution and collection of the questionnaires.

The overall research purpose of these audits was to validate the original theoretical model of trust.

Population

Six thousand five hundred and twenty-eight (6 528) employees from 22 South African companies participated in the research. The participants ranged from executive management to operational staff. All qualification and language groups were included in the audits (Table 1).

TABLE 1
BIOGRAPHICAL COMPOSITION OF THE POPULATION

Position in company	Executive Management	Management	Supervisors	Operational and professional
	120 2.1%	558 10.0%	1 345 24.0%	3 571 63.8%
Qualification groups	Std 8 and lower qualifications 1 037 17.3%	Std 10 1 304 21.7%	Certificate/Diploma 2 179 36.3%	Degree and higher 404 6.7%
Language groups	English 1 398 22.0%	North Sotho 351 5.5%	Tsonga 95 1.5%	Xhosa 238 3.7%
	Afrikaans 2 542 40.1%	South Sotho 319 5.0%	Tswana 149 2.3%	Zulu 753 11.9%
	Ndebele 153 2.4%	Swazi 257 4.0%	Venda 26 .04%	Other 65 1.0%
Union affiliation	NUM 1 170 29.6%	NUMSA 447 11.3%	EEA 114 2.9%	SAWU 106 2.7%
	MWU 1 159 29.4%	Non-members 951 24.1%		

Most participants indicated their home language as Afrikaans (40,1%) and English (22,0%), while many candidates (21,7%) indicated Std 10 qualifications. Sixty percent of the participants were male and 40% female. In some instances facilitators were used to explain concepts in the various African languages.

Instruments

The "Big Five" personality aspects were measured by means of the adapted "Big Five" questionnaire (Kramer & Tyler, 1996).

The "Big Five" personality aspects can be described as follows:

Conscientiousness

This includes traits such as persistence, determination, hard-working, as well as dependable, thorough and responsible. The opposite pole of this would be careless or irresponsible.

Agreeableness

This reflects being liked, courteous, good-natured, cooperative, forgiving, and soft-hearted. The opposite pole of this would be cold, rude, unkind and independent.

Emotional stability

This reflects the absence of anxiety, depression, anger, worry and insecurity. The opposite pole is called neuroticism.

Resourcefulness (openness to experience)

This reflects imaginativeness, creativeness, broad-mindedness and intelligence. The opposite pole is closed-mindedness, unimaginative and conventional.

Extraversion

This reflects sociability, friendliness, talkativeness and activity. The opposite pole of this dimension is introverted, quiet, shy and reserved.

Altogether 35 questions relating to the "Big Five" personality dimensions were included in the questionnaire.

The managerial aspects were measured by the following managerial dimensions:

Credibility

This includes a willingness to listen, consider proposals, allow others the freedom to express feelings, tolerate mistakes and ensure that employees enjoy prestige and credibility in the organisation.

Team management

This dimension refers to the effective management of team and individual goal accomplishments and the handling of conflict within groups.

Information sharing

This dimension indicates willingness to give individual feedback on performance and to reveal company-related information in an honest manner.

Work support

This dimension deals with willingness to support employees when needed and to provide job-related information for the accomplishment of objectives.

Trust relationship

With regard to the measurement of trust, five questions (see under "Previous Research") in the questionnaire are directly related to the trust dimension. These five questions deal with various aspects of trust between employees and their immediate supervisor. The trust relationship dimension reflects the relationship with the immediate supervisor in terms of openness, honesty, fairness and intention to motivate employees.

Table 2 shows the results of Cronbach's alpha for the nine dimensions. The alpha coefficients portray highly satisfactory results with coefficients ranging between 0,82 and 0,95.

TABLE 2
RESULTS OF THE ITEM ANALYSIS

Dimensions	No of questions	Cronbach's alpha
Conscientiousness	8	0,929
Agreeableness	8	0,947
Emotional stability	5	0,870
Resourcefulness	7	0,871
Extraversion	7	0,887
Credibility	13	0,939
Team management	9	0,888
Information sharing	4	0,841
Work support	3	0,824
Trust relationship	5	0,908

Developing a structural equation model

Structural equation modelling (SEM) is a linear cross-sectional statistical modelling technique which includes confirmatory factor analysis, path analysis and regression analysis (Botha, 1999). Because SEM is mostly used to determine whether a certain model is valid rather than to "find" a suitable model, it is the most applicable statistical method to validate the proposed trust model. How can one determine which model is cor-

rect? This is where theory plays an important role in justifying (specifying) a model. Path analysis does not provide a way to specify the model, but rather estimates the effects among the variables once the model has been specified a priori on the basis of theoretical considerations (Schumaker & Lomax, 1996).

Hypotheses testing

In SEM the purpose is to reject the null hypothesis, given that the null hypothesis is false. The null hypothesis is assessed by means of a discrepancy function of the covariances between the variables included in the model and the data characteristics.

Hypothesis 1:

There will be statistically positive relationships between the "Big Five" and the trust relationship. The "Big Five" include agreeableness, conscientiousness, resourcefulness, emotional stability and extraversion.

Hypothesis 2:

There will be a statistically positive relationship between the managerial practices and trust relationship. The managerial practices include information sharing, work support, credibility and team management.

Hypothesis 3:

The root mean square of approximation (RMSEA) indicates a reasonable fit for the proposed model. RMSEA < 0,05 indicates good fit and RMSEA < 0,08 indicates a reasonable fit. The comparative fit index (CFI) should ultimately be close to 1 (Schumacher & Lomax, 1996).

Analysis

The 6 528 questionnaires that were returned were statistically analysed. Two software programmes, namely SPSS and EQS for Windows, were used to analyse the data. The SPSS programme was used for the data integration, the analysis of frequencies, means, summarising dimensions and reporting back to the participating companies. The EQS programme was utilised to test the trust model using structural equation modelling (Bentler & Wu, 1995).

To build the EQS model the following procedures were applied:

- The maximum likelihood (ML) estimation method. The ML function in structured means models reflects how closely the sample mean vector is reproduced by the estimated model mean vector, as well as how closely the sample covariance matrix is reproduced by the estimated model covariance matrix. As a result a model may fit badly if the means are modelled poorly, or if the covariances are modelled poorly, or both (Bentler, 1995).
- A factor loading of 0,5, so that any factor loading of 0,5 or above in absolute value is taken as evidence that a variable is a good indicator of a factor.
- All the variables in the model were used and for the exogenous latent variables, the factor variances were set equal to 1,0. For the endogenous variables, one path linking each construct to its respective indicator was set equal to 1,0.

Following the procedure outlined by Schumacher and Lomax (1996) and Bentler and Wu (1995) a confirmatory factor analysis was conducted to determine whether the data conformed with the supposition that each of the proposed latent variables represents separate constructs.

Results revealed a non-significant (which indicates that the data fit the model) chi-square = 4 404,511 based on 33 degrees of freedom with a probability value of less than 0,001. The normal theory chi-square for this solution is 3 538,303. Additionally, the comparative fit index (CFI) = 0,890, the Bentler and Bonet normed fit index (BDNFI) = 0,889 and the Bentler and Bonet non-normed fit index (BBNFI) = 0,850. All are very close to the recommended perfect fit, 0 (no fit) to 1 perfect fit.

RESULTS

The statistically significant standardised parameter estimates for the revised theoretical model are presented in Figure 2. It is clear from Figure 2 that all the dimensions of the "Big Five" personality aspects and the managerial practices are manifestations of the construct of trust. All the parameter estimations are significant on the 5% significance level. The error variance (1-R²) indicates the extent to which the variance in the manifested variables can be contributed to the latent factor. Agreeableness as measured by the "Big Five" questionnaire is a significant manifestation of the "Big Five" personality aspects. However, it must be noted that 56% of the variance is due to measurement error and 44% of variance can be attributed to agreeableness. The biggest error variance is noted for information sharing (88%) and only 22% of the variance can be attributed to information sharing.

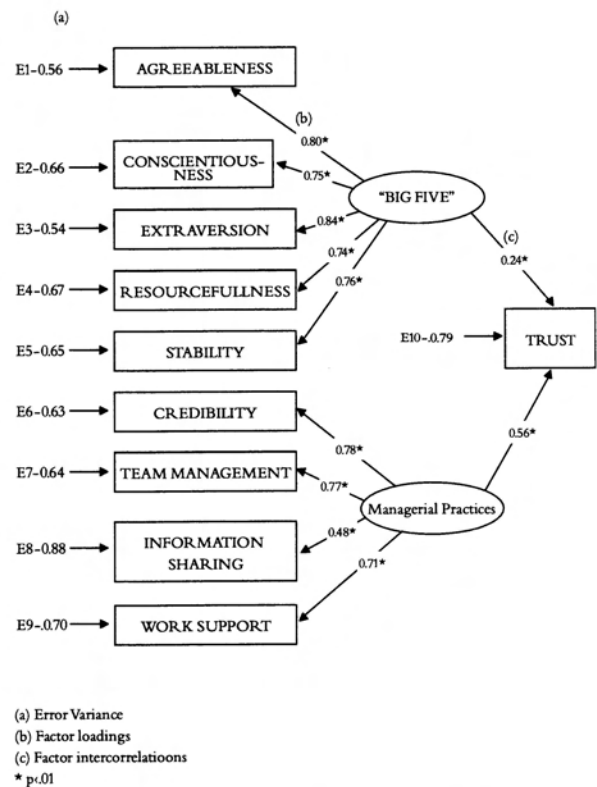


Figure 2: Empirical evaluation of proposed trust relationship model

As shown in Figure 2, there is a low relationship between trust and the personality aspects (0,24). This is contrary to Hypothesis 1 which stated a positive relationship between trust and personality. The results of the model confirm Hypothesis 2, which shows a positive relationship between trust and managerial practices (0,56). The summary of the statistics indicates a reasonable fit regarding the comparative fit index (CFI) as stated in Hypothesis 3, although, in terms of the model presented in Figure 2, the dimensions on personality aspects are not supported.

In addition to the hypothesized relationship contained in the theoretical model, the additional nine statistically significant parameters are represented in Figure 2. These results suggest that agreeableness, conscientiousness, extraversion, resourcefulness and stability are associated with the personality aspects – the "Big Five". Also, the results indicate that credibility, team management and work support are directly associated with managerial practices. Information sharing, on the other hand, does not appear to be directly associated with managerial practices.

DISCUSSION

The results indicate support for a connection between trust relationships in an organisation and managerial practices (Hypothesis 2). This finding provides support for the belief that managerial practices have an influence on the trust relationships between managers and employees. These findings support the research of Tyler and DeGoey (1996) that trust is affected by the decisions of people in authority in organisations. The lower relationships between the "Big Five" personality aspects appear to indicate that employees' trust in managers is to a large degree not influenced by their managers' personality aspects as defined by the "Big Five". Although there appears to be a weaker relationship between the "Big Five" and trust relationships, the relatively good fit of the model indicates that an overall implication of the model is that the personality of the manager might influence his/her subordinates indirectly.

Additional research is needed to further investigate the relationships between trust and other managerial indicators. The weak relationship between managerial practices and information sharing might be the results of focus on only two aspects of information sharing, namely individual feedback performance and the revealing of company-related information (2 questions each). Additional questions that focus on other aspects of communication, for instance informal communication between manager and employee and communication sources, might improve the relationship.

Limitations

The high scale reliability of the dimensions (Table 2) indicate high correlations between the items, but not a high relationship between the two dependent variables and the independent variable. This might be due to a incorrectly formulated hypothesis which was included in the study, namely that personality aspects and managerial practices have a direct influence on trust in an organisation. Although much has been written about trust, not many models based on structural analysis were available to use as a starting point. In many ways the study was exploratory in nature. A limitation in the gathering and use of data is that the biographical composition of the population was largely in the hands of the various participating companies. During the biographical analysis of the data it was noted that not all respondents indicated their home language. This might have had an impact on the overall goodness-of-fit model based on a specific population. A large percentage of participants (39,7%) also indicated their home language as other than Afrikaans and English, which could have had an impact on their understanding of the questionnaire.

Implications for future research

The findings of the present study indicate that additional processes relating to trust relationships need to be explained and researched. The research is especially important in that it showed the relationships between trust relationships and managerial practices, but also indicated a low relationship between trust relationships and personality aspects. Future research needs to focus on expanding the dimension of information sharing and including other anecdotes of trust. The possibility of including dimensions such as leadership and the styles of leadership and their relationships with the dimension of trust, might indicate other parameters of the influence on trust relationships between managers and employees.

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