
Dimensionality of interpersonal trust and its relationship to innovativeness

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Abstract

Companies striving for a competitive edge need to have insight into factors that best promote innovativeness. Our quantitative study explored the relationship between sub-dimensions of interpersonal trust and innovativeness on both lateral and vertical organisational levels. The convenience sampling technique (N=95) focused on the members of the maintenance and production teams of a division within a large petrochemical company. Data were gathered through previously validated, structured questionnaires.

Research on the specific combination of sub-dimensions and organisational levels has, to the best of our knowledge, neither been linked within the same study, nor within a South African context, before.

Results revealed practically significant positive correlations between several sub-dimensions of trust and innovativeness that can assist management in developing more focused strategies to develop a competitive edge.

Keywords: Interpersonal trust, vertical trust, lateral trust, cognitive-based trust, affective-based trust, organisational innovativeness

Disciplines: Organisational Behaviour, Innovation studies, Business studies

Opsomming

Maatskappye wat na 'n mededingende voordeel streef, moet insig hê in die faktore wat innoverendheid sal bevorder. Ons kwantitatiewe studie ondersoek die verhouding tussen sub-dimensies van interpersoonlike vertroue en innoverendheid op beide laterale en vertikale organisasievlakke.

Die gerieflikheidsteekproef (N=95) fokus op lede van die onderhouds- en produksieafdeling van 'n groot petrochemiese maatskappy. Data is deur middel van voorheen gevalideerde, gestruktureerde vraelyste ingesamel. Navorsing op die spesifieke

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This article is based on research submitted by this author for the degree Masters in Business Administration, NWU(Potchefstroom).

Acknowledgements: We thank Dr Graham Baker for his insightful input and responses to earlier drafts of this article and Me Lusilda Boshoff of NWU's Statistical Consultation Service, who assisted with the analyses of the statistical data.

kombinasie van sub-dimensies en organisasievlakke is, so ver ons kennis strek, nog nooit almal in dieselfde studie gekoppel, of binne 'n Suid-Afrikaanse konteks, bestudeer nie. Resultate het prakties beduidende positiewe korrelasies tussen verskillende sub-dimensies van vertrouwe en innoverendheid uitgewys. Dit kan bestuur help om meer gefokusde strategieë vir mededingendheid te ontwikkel.

1 Introduction

Innovativeness is instrumental in the ability of companies to compete in a global market. These businesses therefore need to foster an organisational climate that encourages risk-taking, mutual learning and the free expression of ideas in order to promote innovativeness and remain competitive. Certain characteristics of the workplace, such as the levels of trust among the workforce and between employees and management, may influence the conditions necessary to promote innovativeness. Although previous research showed that an organisational climate of trust enhances the free expression of ideas and promotes mutual learning (Costigan *et al.*, 1998: 303), the specific link between trust and innovation has previously been studied to a limited extent (Ellonen *et al.*, 2008:164;165). It is not clear, for example, how lateral and vertical trust relates to different types of organisational innovativeness. For instance, is it more important to focus resources on the building of lateral trust relationships rather than vertical trust relationships? It is also not evident what the nature and strength of the relationship between cognitive- and affective-based trust and organisational innovativeness is. Is it necessary to develop both cognitive and affect-based trust relationships, for example, or is it sufficient to merely focus on one of these bases of trust to enhance innovativeness?

This study examined the linkages between various sub-dimensions of interpersonal trust and organisational innovativeness within a large South African petrochemical company. If such relationships between particular dimensions of trust and innovativeness could be determined, they could assist management in devising more focused strategies to improve innovativeness within the company.

Our first objective was to determine the relationship between cognitive- and affective-based trust and organisational innovativeness. Our second aim was to determine the relationship between lateral and vertical trust, and organisational innovativeness. These objectives were translated in terms of the following four hypotheses:

- H1: Organisational innovativeness is positively correlated with the strength of lateral trust in an organisation.
- H2: Organisational innovativeness is positively correlated with the strength of vertical trust in an organisation.
- H3: Organisational innovativeness is positively correlated with the strength of cognitive-based trust in an organisation.
- H4: Organisational innovativeness is positively correlated with the strength of affective-based trust in an organisation.

Data were gathered by means of previously validated, structured questionnaires that measured dimensions of trust and innovativeness, which we distributed among 189 members of the maintenance and production teams of a division within a large petro-chemical company.

The exploration of the specific combination of dimensions of trust and innovativeness on both lateral and vertical levels within the same study has not, to our knowledge, been attempted before, nor has such a study focused on the combination of these dimensions within a South African company. Our findings have the potential to contribute to a better understanding of workplace dynamics within a South African context and more widely.

2 Theoretical framework

We conceptualise interpersonal trust as a complex, multidimensional construct (Rousseau *et al.*, 1998), which can be separated from its antecedents (such as the trustworthiness characteristics of the trustee) and its outcome, which is risk-taking behaviour (Mayer *et al.*, 1995). As such, trust can be defined as “a willingness to accept vulnerability based upon having optimistic expectations about other people’s intentions and behaviours in situations that are interdependent and/or risky” (Clegg *et al.*, 2002:409).

Trust has cognitive as well as affective dimensions (McAllister, 1995, Lewicki & Bunker, 1996), which can be broken down into a further two dimensions, namely lateral trust (Costigan *et al.*, 1998:303) and vertical trust (Ferres *et al.*, 2004:610). If the trust is based on rationality, an individual looks for rational reasons to trust a person, and the trust has a cognitive dimension. If the interaction between two parties is characterised by genuine, mutual care and concern for each other over time, the trust relationship deepens and an affective dimension develops (Mc Allister, 1995:26).

Vertical trust concerns, for example, perceptions of the workforce that management is competent and will act in a fair, reliable and ethical manner. Lateral trust, on the other hand, implies that peers are mutually supportive and will not take advantage of each other, for example by withholding information.

Our conceptualisation of innovativeness best relates to that of Ellonen *et al.* (2008:171), who suggested that there are four dimensions of the organisational innovativeness construct, namely product, behavioural, strategic and process innovativeness. These dimensions were used to measure organisational innovativeness in what follows.

3 Research design and methodology

Our quantitative research approach focused on establishing how cognitive, affective, lateral and vertical trust related to the four dimensions of innovativeness, namely product innovativeness, behavioural innovativeness, strategic innovativeness and process innovativeness.

The research population was defined by the role they play in the business as it relates to the direct operation and maintenance of production units. Included were those individuals who were responsible for the implementation of improvement and maintenance projects in the company. For this reason, the scope embraced managers, engineers, technicians, technologists, discipline specialists and artisans. The number of employees in this survey population was 189.

Previously validated, structured questionnaires were sent to all 189 employees in a hard copy and electronic format, in the form of emails. The people who responded formed the sample. Our convenience sampling technique resulted in 95 respondents who completed the questionnaires, which was a response rate of 52%.

Questions related to demographic information (Section A), lateral and vertical trust (Section B), cognitive and affect-based trust (Section C), and organisational innovativeness (Section D), sourced from previously validated and reliable measurement instruments developed by Ellonen *et al.* (2008) and Ferda and Ozen (2003). Responses were measured on a 5-point Likert scale. Details of the measurement instrument and what each sub-section measured are provided in Table A1, Appendix A.

The analysis of the data was conducted using SPSS (2009) and STATISTICA (2011).

4 Findings

4.1 Reliability

Reliability analyses of results revealed that both the mean inter-item correlations for all the constructs (all above the 0.2 mark) and the Cronbach's alpha values (all greater than 0.6) were deemed acceptable. These results indicated that the scales could be regarded as sufficiently reliable; it was also possible to calculate the aggregated scores for each dimension. The reliability scores of all the sub-sections, as obtained in this study, together with a more detailed breakdown of the questionnaires and related item codes, are displayed in Table A1 in Appendix A.

4.2 Descriptive statistics

Mean scores and standard deviations were used as the descriptive statistic measures for the data collected from the respondents (Table A2, Appendix A). The mean scores indicated that, across the dimensions, the respondents felt that they could trust each other and their management enough to engage in risk-taking and innovative behaviours.

The benevolence construct of the lateral- and vertical-trust results had mean scores of 3.14 and 3.13, respectively, which were relatively low compared to the other dimensions. Benevolence deals with the perception of 'caring' in a trust relationship. We conclude that the respondents work in an environment where they experience a perception of low levels of 'caring' within the business.

The mean scores for the product- and strategic-innovativeness constructs were also relatively low, at 3.17 and 3.10, respectively. Product innovativeness is related to the introduction of new products into the marketplace, whereas strategic innovativeness is related to the management of organisational objectives and the resources required to meet them. A possible explanation for this is that in a large organisation, such as the one targeted, it is exceptionally difficult to change the product offering of any given business unit. In terms of the business strategy, this is largely determined by individuals at senior levels in the organisations. For this reason, it is conceivable that the respondents consider that they do not possess the ability to influence the product offering of the business or strategic direction the company chooses to take.

Finally, the process innovativeness sub-dimension achieved a mean score of 3.41, which, along with the lateral trust competency aspect, was the highest of the scores. Process innovativeness is related to the introduction of new production methods and technologies, which are used to improve production and management processes. This score indicates that,

of all the sub-dimensions, the respondents are the most confident about their ability to improve efficiencies in the production process.

4.3 Correlations

Spearman's rank order correlations were calculated to determine the nature and strength of the correlations between the sub-dimensions of trust and organisational innovativeness. The correlation coefficient is a standardised measure of an observed effect and is a commonly used measure of its size. As noted by Field (2009:170), values of ± 0.1 represent a small effect, ± 0.3 is a medium effect and ± 0.5 corresponds to a large effect. Findings pertaining to this discussion are detailed in Table B1, Appendix B.

4.3.1 Spearman's rho correlations for lateral trust and organisational innovativeness.

Our first hypothesis (H1) was that organisational innovativeness is positively correlated with the strength of lateral trust in the organisation. With a correlation coefficient of 0.68, we can conclude that there is a practically significant positive correlation between these two constructs. H1 is supported. Correlation coefficient values for overall lateral trust and the four dimensions of organisational innovativeness range between 0.52 and 0.67, indicating a practically significant positive relationship between these variables as well.

4.3.2 Spearman's rho correlations for vertical trust and organisational innovativeness

Our second hypothesis (H2) was that organisational innovativeness is positively correlated with the strength of vertical trust in the organisation. With a correlation coefficient of 0.72, we are convinced that there is a practically significant positive correlation between these two constructs. H2 is supported. Correlation coefficient values for overall vertical trust and the four dimensions of organisational innovativeness range between 0.60 and 0.64, indicating a practically significant positive relationship between these variables as well.

4.3.3 Spearman's rho correlations for cognitive-based trust and organisational innovativeness

The third hypothesis advanced (H3) was that organisational innovativeness is positively correlated with the strength of cognitive-based trust within the organisation. With a correlation coefficient of 0.58, we conclude that there is a practically significant positive correlation between these two constructs. Therefore, the third research hypothesis is supported. Correlation coefficient values for overall cognitive-based trust and the four dimensions of organisational innovativeness range between 0.49 and 0.54, indicating a significant positive linear relationship between these variables as well.

4.3.4 Spearman's rho correlations for affective-based trust and organisational innovativeness.

The final hypothesis (H4) presented in this research was that organisational innovativeness is positively correlated with the strength of affective-based trust within the organisation. With a correlation coefficient value of 0.62, we conclude that there is a significant relationship between these two constructs. Therefore, H4 is supported. When taking a closer look at specific sub-dimensions of organisational innovativeness, we find that correlation coefficients between strategic- and process-innovation, and affective-based trust are 0.46 and 0.46, respectively. This indicates a medium to high positive correlation between these two dimensions of organisational innovativeness and the affective-based trust construct.

In summary, we show that there are significant positive correlations between the overall, selected dimensions of interpersonal trust and the overall organisational innovativeness

construct. Table 1 summarises the main findings pertaining to the four hypotheses, showing that all four were confirmed.

Table 1: Research hypotheses and corresponding Spearman’s rho values

Hypothesis	Description	Spearman’s rho
H1	Organisational innovativeness is positively correlated with the strength of lateral trust in an organisation.	0.68
H2	Organisational innovativeness is positively correlated with the strength of vertical trust in an organisation.	0.72
H3	Organisational innovativeness is positively correlated with the strength of cognitive-based trust in an organisation	0.58
H4	Organisational innovativeness is positively correlated with the strength of affective-based trust in an organisation	0.62

4.4 Discussion

Our findings provide support for our first hypothesis and offer a different perspective on previous research on this topic. Ellonen and colleagues, for example, found that none of the dimensions of organisational innovativeness were significantly related to lateral trust (Ellonen *et al.*, 2008:173). The practically significant positive correlation between overall lateral trust and all four dimensions of organisational innovativeness found in our study, therefore, points to the potentially important role that lateral trust can play in promoting innovativeness. The fact that contrasting results were found, however, also indicates the necessity for further research on this topic.

With regard to our second hypothesis, vertical trust and innovativeness were not only positively related as main constructs, but all the sub-dimensions of these two constructs were also positively related. This emphasises the important role that leadership can play in promoting innovativeness through the building of relationships with the workforce based on trust. The outcome of a trusting relationship is the willingness of the parties in the relationship to take risks, which we suggest is a necessary ingredient for organisational innovation to take place. This argument is in line with previous research indicating that new ideas and innovation demand risk-taking rather than risk avoidance from employees and leaders (Ellonen *et al.*, 2008:176).

The correlation between organisational innovativeness and lateral trust, at $r=0.68$, was less than that between organisational innovativeness and vertical trust, at $r = 0.72$. A possible explanation for this is that innovation within a business requires resources in various forms, be they funds, human capital, time or support or a combination of all of these. Within a modern organisation, the leadership holds the keys to unlocking these resources. This finding emphasises the important role of management in providing sufficient resources and support to enhance innovativeness, relative to the role to be played by peers.

Slightly lower correlations of strategic innovativeness and affective-based trust ($r = 0.46$) and of process innovativeness and affective-based trust ($r = 0.46$) were noted. The lower values of r in those two cases can possibly be explained by the fact that any changes made to a production process are undertaken by following a highly structured management of the change process. The structure of the process clearly defines the roles and responsibilities of the parties involved, which means that trust based on an emotional connection would not

feature as significantly when making changes to the production process. Further research, based on a larger sample, is desirable to explore this finding in more detail.

As far as strategic innovativeness goes, the overall business objectives and strategies are formulated by the business team leadership. This means that individuals working at the lower management and artisan levels have minimal input into the formulation of business strategies. In this scenario, it is feasible that trust based on an emotional connection between the parties involved does not feature as significantly when making changes to, or implementing, a business's long-term strategy.

5 Conclusions and recommendations

This study contributes to a growing body of knowledge on both innovativeness and trust, in its approach to explore specific links between interpersonal trust and innovativeness simultaneously on different levels (between peers, as well as between the workforce and management), within the same company. Our findings also provide a richer understanding of the relationship between trust and innovativeness.

The mean values for all the dimensions of interpersonal trust and organisational innovativeness suggest that our survey sample is approving of the levels of interpersonal trust and organisational innovativeness within the business. This finding is supported by the fact that all of the constructs achieved Spearman's rank order correlation values of greater than 0.5. Therefore, all four our initial hypotheses were supported.

According to the workforce, both cognitive- and affective-based trust have a role to play in improving the organisational innovativeness of the business. This is a significant finding. Furthermore, we found no published research linking these two dimensions of trust to organisational innovativeness. This should be considered as a topic for future research involving a larger sample and a random sampling technique.

It is important to note that innovativeness is positively correlated with both lateral and vertical trust. Previous research (Ellonen *et al.*, 2008) suggests that trust is most strongly related to impersonal forms of (institutional) trust. Our current finding suggests that interpersonal forms of trust are also an important consideration. It implies that management should pay attention to trust-building initiatives on both lateral and vertical levels within the organisation.

Managers can increase the levels of interpersonal trust by ensuring, for example, that competency and skill set gaps are identified and rectified. Management can also build trust by continuously demonstrating and encouraging caring behaviours and by ensuring that all interactions are governed by accepted ethical behaviours.

In summary, the findings highlight the fact that high levels of interpersonal trust contribute to enhanced levels of organisational innovativeness within the company. More focused strategic planning is therefore possible by paying close attention to how all the components of interpersonal trust influence product innovativeness, process innovativeness, behavioural innovativeness and strategic innovativeness, respectively.

APPENDIX A: RESULTS OF STATISTICAL ANALYSES

Table A1: Scale reliability for dimensions measured by the survey instrument

Ser No	Dimensions	Item codes	Cronbach's alpha (α)	Mean inter-item correlation
1	Section B: Lateral and vertical trust (Ellonen <i>et al.</i>, 2008:168)			
2	Trust in employee reliability	LT01-LT06	0.84	0.47
3	Trust in employee competence	LT07 – LT12	0.84	0.60
4	Trust in employee benevolence	LT13 – LT16	0.82	0.54
5	Overall co-worker trust	-	0.93	0.48
6	Trust in leader's reliability	VT01 – VT06	0.92	0.65
7	Trust in leader's competence	VT07 – VT12	0.91	0.67
8	Trust in leader's benevolence	VT13 – VT16	0.89	0.68
9	Overall employee trust in leader	-	0.96	0.61
10	Section C: Cognitive and affective-based trust (Erdem & Ozen, 2003:134)			
11	Cognitive trust	CT01 – CT06	0.63	0.23
12	Affective trust	AF01 – AF05	0.73	0.35
13	Cognitive & affective trust	-	0.81	0.28
14	Section D: Organisational innovativeness (Ellonen <i>et al.</i>, 2008:170)			
15	Product innovativeness	IN01 – IN05	0.87	0.57
16	Behavioural innovativeness	IN06 – IN10	0.84	0.52
17	Strategic innovativeness	IN11 – IN13	0.81	0.59
18	Process innovativeness	IN14 – IN16	0.80	0.57
19	Overall organisational innovativeness	-	0.93	0.47

Table A2: Mean and standard deviations for the aggregated dimension scores

Dimensions	Mean	Standard deviation
Overall lateral trust	3.28	0.69
Trust in co-worker reliability	3.22	0.72
Trust in co-worker competence	3.45	0.80
Trust in co-worker benevolence	3.14	0.79
Overall vertical trust	3.22	0.78
Trust in leader's reliability	3.12	0.87
Trust in leader's competence	3.41	0.77
Trust in leader's benevolence	3.13	0.88
Cognitive trust	3.31	0.52
Affective trust	3.31	0.68
Cognitive and affective trust	3.31	0.54
Overall organisational innovativeness	3.22	0.63
Product innovativeness	3.17	0.69
Behavioural innovativeness	3.22	0.76
Strategic innovativeness	3.10	0.76
Process innovativeness	3.41	0.75

APPENDIX B: SPEARMAN'S RHO CORRELATIONS

Table B1: Spearman' rho correlations for interpersonal trust and organisational innovativeness

Dimension	LT-R	LT-C	LT-B	LT	VT-R	VT-C	VT-B	VT	CT	AT	CT & AT	PROD INN	BEH INN	STAT INN	PROC INN	INNO
LT - R	1.00	0.76	0.74	0.92	0.69	0.60	0.65	0.72	0.59	0.54	0.61	0.61	0.52	0.51	0.51	0.64
LT - C	-	1.00	0.75	0.92	0.60	0.61	0.54	0.63	0.61	0.61	0.70	0.59	0.49	0.51	0.49	0.60
LT - B	-	-	1.00	0.88	0.54	0.53	0.63	0.61	0.49	0.54	0.57	0.65	0.54	0.45	0.41	0.62
LT	-	-	-	1.00	0.67	0.65	0.67	0.72	0.64	0.63	0.70	0.67	0.56	0.53	0.52	0.68
VT - R	-	-	-	-	1.00	0.82	0.80	0.96	0.65	0.60	0.65	0.59	0.58	0.56 2	0.60	0.66
VT - C	-	-	-	-	-	1.00	0.73	0.90	0.52	0.54	0.59	0.55	0.62	0.64	0.60	0.67
VT - B	-	-	-	-	-	-	1.00	0.90	0.46	0.53	0.55	0.63	0.57	0.53	0.56	0.67
VT	-	-	-	-	-	-	-	1.00	0.56	0.60	0.64	0.64	0.63	0.60	0.63	0.72
CT	-	-	-	-	-	-	-	-	1.00	0.63	0.89	0.54	0.50	0.52	0.49	0.58
AT	-	-	-	-	-	-	-	-	-	1.00	0.91	0.63	0.52	0.46	0.46	0.62
CT & AT	-	-	-	-	-	-	-	-	-	-	1.00	0.67	0.56	0.54	0.52	0.66
PROD INN	-	-	-	-	-	-	-	-	-	-	-	1.00	0.65	0.59	0.58	0.84
BEH INN	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.66	0.71	0.91
STAT INN	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.69	0.82
PROC INN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00	0.82
INNO	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.00

Abbreviation	Dimension	Abbreviation	Dimension
LT - R	Trust in employee reliability	VT - R	Trust in leader's reliability
LT - C	Trust in employee competence	VT - C	Trust in leader's competence
LT - B	Trust in employee benevolence	VT - B	Trust in leader's benevolence
LT	Overall co-worker trust	VT	Overall leaders trust
CT	Cognitive trust	PROD INN	Product innovativeness
AT	Affective trust	BEH INN	Behavioural innovativeness
CT&AT	Cognitive & affective trust	STAT INN	Strategic innovativeness
PROC INN	Process innovativeness	INNO	Overall organisational innovativeness

Bibliography

- Atkinson, S. 2004. Senior management relationships and trust: An exploratory study. *Journal of Managerial Psychology*, 19(6): 571-587.
- Benner, M.J. & Tushman, M.L. 2003. Exploitation, exploration and process management: The productivity dilemma revisited. *The Academy of Management Review*, 28(2): 238-256.
- Burke, C.S., Simms, D.E., Lazzara, E.H. & Salas, E. 2007. Trust in leadership: A multi level review and integration. *The Leadership Quarterly*, 18: 606-632.
- Clark, L.A. & Watson, D. 1995. Constructing Validity: Basic Issues in Objective Scale Development. *Psychological Assessment*, 7(3): 309-319.
- Clegg, C., Unsworth, K., Epitropaki, O. & Parker, G. 2002. Implicating trust in the innovation process. *Journal of Occupational and Organisational Psychology*, 75: 409-422.
- Colquitt, J.A., Scott, B.A. & Lepine, J.A. 2007. Trust, trustworthiness, and trust propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92(4): 909-927.
- Coppola, N.W., Hiltz, S.R. & Rotter, N.G. 2004. Building trust in virtual teams. *Transactions on Professional Communication*, 4(2):95-104.
- Costa, A.C. 2003. Work team trust and effectiveness. *Personnel Review*, 32(5): 605-622.
- Costigan, R.D., Iiter, S.S. & Jason, J.J. 1998. Multi-Dimensional Study of Trust in Organizations. *Journal of Managerial Issues*, 10(3): 303-317.
- Davis, J.H., Schoorman, F.D., Mayer, R.C. & Tan, H.H. 2000. The trusted general manager and business unit performance: Empirical evidence of a competitive advantage. *Strategic Management Journal*, 21(5): 563-576.
- Den Hartog, D.N., Shippers, M.C. & Koopman, P.L. 2002. The impact of leader behaviour on trust in management and co-workers. *SA Journal of Industrial Psychology*, 28(4): 29-34.
- Dervitsiotis, K.N. 2006. Building trust for excellence in performance and adaptation to change. *Total Quality Management*, 17(7): 795-810.
- Dirks, K.T. & Ferrin, D.L. 2002. Trust in leadership: Meta-Analytic findings and implications for research and practice. *Journal of Applied Psychology*, 87(4): 611-628.
- Dovey, K. 2009. The role of trust in innovation. *The Learning Organisation*, 16(4): 311-325.
- Ellonen, R., Blomqvist, K. & Puumalainen, K. 2008. The role of trust in organisational innovativeness. *European Journal of Innovation Management*, 11(2): 160-181.
- Erdem, F. & Ozen, J. 2003. Cognitive and affective dimensions of trust in developing team performance. *Team Performance Management: An International Journal*, 9(5): 131-135.
- Ferrin, D.L., Dirks, K.T. & Shah, P.P. 2006. Direct and indirect effects of third party relations on interpersonal trust. *Journal of Applied Psychology*, 91(4): 870-883.
- Ferres, N., Connell, J. & Travaglione, A. 2004. Co-worker trust as a social catalyst for constructive employee attitudes. *Journal of Managerial Psychology*, 19(6): 608-622.
- Field, A. 2009. *Discovering statistics using SPSS*. 3rd ed. London: Sage Publications.

- Holster, J.S. & Fields, D. 2010. Trust and tacit knowledge transfer and use. *Journal of Knowledge Management*, 14(1): 128-140.
- Joia, L. & Lemos, B. 2010. Relevant factors for tacit knowledge transfer within organisations. *Journal of Knowledge Management*, 14(3): 410-427.
- Koskinen, K.U. 2003. Evaluation of tacit knowledge utilization in work units. *Journal of Knowledge Management*, 7(5): 67-81.
- Lau, D.C. & Linden, R.C. 2008. Antecedents of coworker trust: Leader's blessing. *Journal of Applied Psychology*, 93(5): 1130-1138.
- Levine, D. M., Stephan, D. F., Krehbiel, T. C. & Berenson, M. L. 2008. *Statistic for managers using Microsoft® Excel*. 5th ed. New Jersey: Pearson Prentice Hall.
- Lewicki, R.J. & Bunker, B.B. 1996. Developing and maintaining trust in work relationships. (In Kramer, R. & Tyler, T., eds. *Trust in organizations: Frontiers of theory and research*. Thousand Oaks, CA: Sage. p. 114-139.)
- Martins, E.C. & Terblanche, F. 2003. Building organisational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1): 64-74.
- Mayer, R.C., Davis, H.D. & Schoorman, F. D. 1995. An integrated model of organisational trust. *The Academy of Management Review*, 20(3): 709-734.
- Mayer, R.C. & Gavin, M.B. 2005. Trust in management and performance: Who minds the shop while the employees watch the boss? *Academy of Management Journal*, 48(5): 874-888.
- McAllister, D.J. 1995. Affect-and cognition-based trust as foundations for interpersonal cooperation in organisation. *Academy of Management Journal*, 38(1): 24-59.
- McEviley, B. & Tortoriello, M. 2011. Measuring trust in organisational research: Review and recommendations. *Journal of Trust Research*, 1(1): 23-63.
- Morrow, J.L., Hansen, M.H. & Pearson, A.W. 2004. The cognitive and affective antecedents of general trust within cooperative organisations. *Journal of Management Issues*, 16(1): 48-64.
- Panuwatmanich, K., Stewart, R.A. & Mohamed, S. 2008. The role of climate for innovation in enhancing business performance: The case of design firms. *Engineering, Construction and Architectural Management*, 15(5): 407-422.
- Rousseau, D.M., Sitkin, S.B., Burt, R.S. & Camerer, C. 1998. Not so different after all: A cross-discipline view of trust. *The Academy of Management Review*, 20(3): 393-404.
- SAS Institute Inc., 2005. SAS Institute Inc., SAS OnlineDoc®, Version 9.1, Cary, NC
- Shockley-Zalabak, P., Ellis, K. & Winograd, G. 2000. Organisational trust: what it is, why it matters. *Organisation Development Journal*, 18(4): 35-48.
- Schoorman, F.D., Mayer, R.C. & Davis, J.H. 2007. An integrated model of organisational trust: past, present, and future. *The Academy of Management Review*, 32(2): 334-354.
- Semerliöz, F., Hassan, M. & Aldermir, Z. 2011. An empirical study on the role of interpersonal and institutional trust in organisational innovativeness. *International Business Research*, 4(2): 125-136.

- Serva, M.A., Fuller, M.A. & Mayer, R.C. 2005. The reciprocal nature of trust: A longitudinal study of interacting teams. *Journal of Organisational Behaviour*, 26(6): 625-648.
- Six, F. & Skinner, D. 2010. Managing trust in interpersonal work relationship: evidence from two Dutch organisations. *The International Journal of Human Resource Management*, 21(1): 109-124.
- SPSS Inc. 2009. PASW Statistics 18, Release Version 18.0.0. Copyright© by SPSS, Inc., Chicago, IL. www.spss.com.
- StatSoft. Inc. 2011. STATISTICA (data analysis software system), version 10. www.statsoft.com.
- Streiner, D.L. 2003. Starting at the beginning: an introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment*, 80(1): 99-102.
- Wang, C.L. & Ahmed, P.K. 2004. The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management*, 7(4): 303-313.