



This item was submitted to Loughborough's Institutional Repository (<https://dspace.lboro.ac.uk/>) by the author and is made available under the following Creative Commons Licence conditions.


C O M M O N S D E E D

Attribution-NonCommercial-NoDerivs 2.5

You are free:

- to copy, distribute, display, and perform the work

Under the following conditions:



Attribution. You must attribute the work in the manner specified by the author or licensor.



Noncommercial. You may not use this work for commercial purposes.



No Derivative Works. You may not alter, transform, or build upon this work.

- For any reuse or distribution, you must make clear to others the license terms of this work.
- Any of these conditions can be waived if you get permission from the copyright holder.

Your fair use and other rights are in no way affected by the above.

This is a human-readable summary of the [Legal Code \(the full license\)](#).

[Disclaimer](#) 

For the full text of this licence, please go to:
<http://creativecommons.org/licenses/by-nc-nd/2.5/>

IMPACT OF LEADERSHIP STYLE AND TEAM CONTEXT ON PSYCHOLOGICAL EMPOWERMENT IN CONSTRUCTION PROJECT TEAMS

Martin M. Tuuli¹ and Steve Rowlinson²

¹ *Department of Civil and Building Engineering, Loughborough University, Loughborough, Leicestershire, LE11 3TU, UK.*

² *Department of Real Estate and Construction, The University of Hong Kong, Pokfulam, Hong Kong.*

The empowerment process makes huge demands on organizations and its constituents. The team as the proximal work environment creates a social environment for interactions that can change individual behaviour, attitudes and perceptions. Leadership provides a direct channel through which individuals interpret organizational policies and practices. The impact of leadership style and team context on psychological empowerment in project teams was examined using data from a parallel questionnaire survey of construction client, consultant and contractor organizations in Hong Kong. It was posited that span of control and interdependence will positively and significantly influence psychological empowerment. Person orientated leadership style was expected to positively impact psychological empowerment while task orientated leadership style was expected to have a negative impact. No significant relationship was found between span of control and psychological empowerment while team interdependence had a positive and significant relationship with psychological empowerment. Task orientated leadership was positively and significantly related to psychological empowerment in the full sample and contractor teams but not in consultant and client teams. Person orientated leadership was positively and significantly related to psychological empowerment in the full sample, consultant and client teams but not in contractor teams. The distinct findings in relation to the leadership style-empowerment link are consistent with a systems perspective of the construction process. Client and consultant teams constitute a "managing sub-system" and rely on management of interrelationships (i.e. person orientated leadership) to succeed while contractor teams constitute the "operating/task sub-system" and rely on task performance (i.e. task orientated leadership). The findings add to the growing evidence of lack of support for the stereotypical views on how task and person orientated leadership styles manifest. In project settings where "getting the job done" and "teamwork" are inseparable both leadership styles can produce positive outcomes through "leadership adjustment".

Keywords: person orientated leadership, psychological empowerment, span of control, task orientated leadership, team interdependence, Hong Kong

INTRODUCTION

Researchers and management practitioners alike acknowledge that perception of empowerment is affected by a variety of individual-, interpersonal- and organizational-level factors; yet, no concerted efforts have been made to bridge this knowledge gap. A recent study by Tuuli and Rowlinson (2010) identified a range of

¹ m.m.tuuli@lboro.ac.uk

factors from the individual, team, organization and project context that impact empowerment perceptions in project settings in Hong Kong. A clear understanding of the empowerment concept and how it manifests itself is an important first step to identifying the underlying factors that engender empowerment perceptions in project settings. Within the extant literature, empowerment is distinctively conceptualized as a structural concept and as a psychological concept. As a structural concept empowerment is deeply rooted in job design and occurs through objective and often formal organizational changes that grant individuals greater latitude to make decisions and exert influence regarding their work (Liden and Arad 1996). The psychological perspective on the other hand proposes that empowerment is a constellation of experienced cognitions. According to Spreitzer and Quinn (2001: 13-14) psychologically empowered individuals and teams “see themselves as having freedom and discretion (self-determination), as having a personal connection to the organization (meaning), as confident about their abilities (competence), and as able to make a difference in the system in which they are embedded (impact)”. We focus here on empowerment as a psychological experience of individuals and explore how leadership style, team interdependence and span of control, representing interpersonal and team-context specific factors, influence psychological empowerment. We take this approach on the premise that empowerment can really only be said to have occurred if the individual believes that he or she has been empowered (Dainty *et al.* 2002). The broader question we address here therefore is “What is the impact of leadership and team context on psychological empowerment in construction project teams?” This question is examined by first deriving hypotheses linking leadership styles, team context factors and psychological empowerment. Using data from a parallel questionnaire survey of project management teams of client, consultant and contractor organizations in Hong Kong these hypotheses are tested using Hierarchical Linear Modelling (HLM), revealing both expected and unexpected findings.

HYPOTHESES DEVELOPMENT

The team or work-unit is the proximal social environment of individuals and creates opportunities for interactions that subsequently shape behaviours, attitudes and perceptions. The link between social interactions and empowerment has a long history, dating to the work of Lewin (1947) in employee involvement and the sociotechnical systems research on autonomous workgroups (c.f. Trist and Bamforth 1951). Social interaction in groups is related to leadership to the extent that leaders provide vision and direction for the pursuance of group goals. Indeed, Chen and Kanfer (2006: 252) assert that “in work settings, leadership arguably represents the most important of all contextual factors, which might affect individual and team motivation”. Leadership therefore provides a direct channel through which individuals interpret organizational policies and practices. Leader behaviour, manifested in the style of leadership, thus, play a key role in shaping employee interactions, behaviour and perceptions. A key feature of teams is also a clear boundary which determines membership and the scope of interactions. An example of a boundary issue in teams is span of control, often operationalized as the number of members or team size. Span of control reflects the level of direct control a leader has over individual team members. A key feature of teams is also interdependence. Indeed, it is the level of interdependence that differentiates a team from a group. Span of control and interdependence therefore constitute team-context specific features which together with the interpersonal nature of leadership style have implications for control and hence, psychological empowerment in teams. These variables are examined next in

order to delineate the nature of their potential impact on how empowerment of individuals manifest.

Leadership style and psychological empowerment

Hersey and Blanchard (1982) define leadership style in terms of the perceived consistent pattern of behaviours that leaders use when they work with and through people. According to Tannenbaum and Schmidt (1973) leadership style is influenced by four factors; the leader's value system, confidence in subordinates, leadership inclinations and feelings of security in uncertain situations. Based on this premise, they depict leadership style as existing on a continuum; from a democratic or subordinate centred style to an authoritarian or leader centred style. This depiction parallels the conceptualization of leadership style as either employee orientated (person) or production orientated (task) by the Michigan Leadership Studies (c.f. Katz *et al.* 1987), and the consideration and initiating structure dichotomy proposed by the Ohio State Leadership Studies (c.f. Stodill and Coons 1957). This dichotomy of leadership styles is pervasive in the development of many of the popular leadership theories (c.f. Fleishman *et al.* 1991). For instance, Blake and Mouton's (1964) Managerial Grid, Hersey and Blanchard's (1982) situational leadership theory, and Bass' (1985) transformational and transactional leadership behaviours. The empowering nature of leadership style depends on the leader's position on the orientation continuum, ranging from completely person orientated leadership at one end to completely task orientated at the other end.

Essentially, the person orientated end of the continuum reflects a non-directive, relationship based leadership that emphasizes trust and mutual respect between leaders and subordinates. On the other end of the continuum, the task orientated aspect places emphasis on the task or the technical aspects of the work. Person/relationship based leadership style should therefore play an important role in employee psychological empowerment through the creation of an enabling environment, for subordinates to exercise personal control while task based leadership style will militate against personal control and hence psychological empowerment. Transformational leadership behaviours which emerge from the relationship/person orientation perspective, exhibit the most direct link to psychological empowerment. Indeed, providing employees with a sense of vision, mission, support and opportunity for development are among the most empowering behaviours that can emanate from a leader (Lawler, 1992). We therefore posit that; H1: Leadership style within the team will influence psychological empowerment such that: (a) task orientated leadership style will be negatively and significantly related to psychological empowerment; (b) person orientated leadership style will be positively and significantly related to psychological empowerment.

Team-context and psychological empowerment

Interdependence

Interdependence in team settings reflects the extent to which team members need to mutually interact, communicate and coordinate to accomplish tasks (Saavedra *et al.* 1993). Steiner (1972) characterized interdependence as process interaction while Thompson (1967) conceptualized it in terms of work-flow processes and proposed three basic work-flow arrangements or task interdependence reflecting an increasing level of dependence and need for coordination; pooled, sequential and reciprocal interdependence. Van de Ven *et al.* (1976) added a fourth arrangement; team interdependence, as an extension to Thompson's (1967) work, which represents the highest in the order of increasing dependence and need for coordination. Tesluk *et al.* (1997) contend that the implementation of team-based interventions should be guided

by the team's task interdependence. The implication of interdependence for psychological empowerment is particularly profound from a levels perspective. Low interdependence, typical in pooled or sequential tasks may induce higher individual empowerment, since the discrete tasks they comprise are performed independently. However, in high task interdependence situations, such as in reciprocal or intensive tasks, team members may be empowered individually and collectively in order to maximize the interactions for task accomplishment (Tuuli and Rowlinson 2007). Interdependence in cross-functional teams such as construction is perpetuated by specialization or the distinct expertise of the team members and should therefore lead to greater psychological empowerment since effective task performance in teams typically requires individuals to work in concert with others (team effort); yet, task-specific knowledge (professionalism) requires independent input (individual effort). The group therefore performs effectively when all members are empowered to perform their individual inputs. From the foregoing, we posit that; H2: Team context will influence psychological empowerment such that: (a) team interdependence will be positively and significantly related to psychological empowerment.

Span of Control

Span of control is often used as an indicator of the authority, responsibility or control possessed by a manager. It is also a measure of the closeness of contact between a leader and his/her subordinates (Ouchi and Dowling 1974), a view that reflects what Antonakis and Atwater (2002) refer to as structural distance, the physical distance between leader and follower or the frequency of leader-follower interaction. Narrow spans of control or structural distance are therefore associated with closer superior-subordinate contact and hence closer supervision and direct reporting. Individuals working in wide spans of control should, thus, experience less direct control by their leaders and therefore experience greater flexibility in the accomplishment of tasks. Indeed, Quinn and Spreitzer (1997) assert that it is very difficult for managers to micro-manage in large span of control conditions. Thus, "even if a boss does not want to delegate decision-making, the greater number of subordinates that report to him or her, the more difficult it becomes to make all decisions for each subordinate" (Spreitzer, 1996: 497-498). Large span of control should therefore create a more empowering work climate that in turn engenders psychological empowerment. Thus; H2: Team context will influence psychological empowerment such that: (b) large span of control will be positively and significantly related to psychological empowerment.

RESEARCH METHOD

Sample

The sample comprises individuals in "project management teams" in the Hong Kong construction industry. A parallel questionnaire survey of client, consultant and contractor organizations was conducted through key contact persons who selected ongoing projects and administered the questionnaire to individuals working together in the same team on the same project. The first administration yielded 232 responses (104 from contractors, 50 from consultants and 78 from clients). A second administration yielded a further 150 responses (70 from contractors, 44 from consultants and 36 from clients), giving a total of 382 individual responses from 115 organizations (52 contractor, 34 client and 29 consultant), a 23% response rate. Upon examination of the responses, 39 respondents from 11 organizations initially classified as client organizations, were confirmed as working in dual roles as both client and consultant. A missing data pattern analysis resulted in the exclusion of 2 responses for excessive missing data (>50%).

Measures

Psychological empowerment was measured with the 12-item scale developed by Spreitzer (1995), which measures the 4 sub-dimensions; meaning ($\alpha = .88$), competence ($\alpha = .91$), self-determination ($\alpha = .82$) and impact ($\alpha = .91$). Team Interdependence was assessed with the 3-item scale ($\alpha = .74$) of Liden *et al.* (1997). Leadership style was assessed with adaptations of two sub-scales measuring production orientation ($\alpha = .86$) and consideration orientation ($\alpha = .89$) from The Michigan Organizational Assessment Questionnaire (Cammann *et al.* 1979) which respectively reflect task and person related leadership styles. Span of control was measured using team/work-group size as a proxy. Given the tendency for individuals to “fake good” in self-report surveys, we also measured social desirability using the 10-item short version of the Marlowe-Crowne 33-item scale of socially desirability proposed by Strahan and Gerbasi (1972).

Data analysis

A consequence of the data collection procedure, where individuals working together in the same team on the same project were sampled, is non-independence of the observations. Non-independence describes the degree to which responses of individuals are influenced by, depend on, or cluster by group membership due to social interaction or their arrangement spatially or sequentially in time (Kenny and Judd 1986). Non-independence renders statistical analysis techniques such as Analysis of Variance (ANOVA) and Ordinary Least Square (OLS) Regression inappropriate. This stems from their fundamental assumption that observations are independent (Raudenbush and Bryk 2002). Ignoring non-independence leads to bias in significance tests (Kenny and Judd 1986) and loss of power (Bliese and Hanges 2004). A suitable method of analysis for overcoming the impact of non-independence is Hierarchical Linear Modelling (HLM, Bliese and Hanges 2004, Raudenbush and Bryk 2002). As the relationships delineated in Hypotheses H1 and H2 are cross-level relationships between variables at the team-level (leadership style, team interdependence and span of control) and a variable at the individual-level (psychological empowerment), HLM is also the appropriate analysis technique to employ.

RESULTS

Tests of Hypotheses

Age, gender, education, nationality, ethnicity, firm size and age, tenure and organization type as well as social desirability were included as control variables in all the analyses, but are omitted from results presented for brevity. Table 1 presents a summary of the analyses. In the full sample, span of control is not significantly related to psychological empowerment while team interdependence is positively and significantly related ($\beta = 0.37$, $p < 0.001$). Also, while task orientated leadership and person orientated leadership were expected to, respectively, relate negatively and positively to psychological empowerment they both emerged positively and significantly related to psychological empowerment (i.e. $\beta = 0.15$, $p < 0.001$, for task orientated leadership and $\beta = 0.30$, $p < .001$, for person orientated leadership). Together, the four variables explain 46% of variance in psychological empowerment.

The sub-sample analysis illuminates the full sample findings regarding the role of leadership in engendering psychological empowerment. The results indicate that only in the contractor (CM) sub-sample is task orientated leadership positively and significantly related to psychological empowerment (i.e. model b; $\beta = 0.23$, $p < 0.01$). On the other hand, person orientated leadership is positively and significantly related

Table 1: Leadership style and team-context impact on psychological empowerment

Variables	Psychological Empowerment				
	Full	CM	PM	Client	Dual
	Sample	Sample	Sample	Sample	Sample
	a	b	c	D	e
Span of control (H2b)	0.00	0.00	0.01	0.02	-0.03
Team Interdependence (H2a)	0.37***	0.39***	0.53***	0.34**	0.17
Task Orientated Leadership (H1a)	0.15***	0.23**	-0.11	0.14	0.11
Person Orientated Leadership (H1b)	0.30***	0.16	0.46***	0.31***	0.43***

NOTE: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

to psychological empowerment in the consultant (PM) (i.e. model c; $\beta = 0.46$, $p < 0.001$), client (i.e. model d; $\beta = 0.31$, $p < 0.001$) and dual (i.e. model e; $\beta = 0.43$, $p < 0.001$) sub-samples. Taken together, Hypotheses H1a and H2b are not supported in the full sample or the sub-sample analysis, while Hypothesis H1b is supported in the full sample, consultant, client and dual sub-samples but not in the contractor sub-sample. Hypothesis H2a is also supported in the full sample, contractor, consultant and client sub-samples but not in the dual sub-sample. However, given the small sample size for the dual sub-sample, the results should be viewed with caution.

DISCUSSION

The tests of hypotheses using the full/combined and sub-samples revealed both expected and unexpected results. The emergence of interdependence as a key antecedent of psychological empowerment is not surprising. Tesluk *et al.* (2007) highlights the importance of task interdependence in the implementation of team-based interventions. In accord, Chen *et al.* (2007) found stronger support for several hypothesized relationships involving empowerment and performance outcomes in high interdependence teams, but somewhat weaker support in low interdependence teams; thereby confirming team interdependence as a critical boundary condition.

A surprising finding in the full sample analysis, however, is that both high task and person orientated leadership are associated with high psychological empowerment, contrary to the expectation that high task orientated leadership is related to low levels of empowerment and high person orientated is associated with high levels of empowerment. This finding, however, adds to the growing evidence of lack of support for the stereotypical views on how task and person orientated leadership manifest (c.f. Orton 2000, Wong *et al.* 2007). For example, in a Hong Kong study, Wong *et al.* (2007) found no differences in the level of task and person orientated leadership exhibited by expatriate and Chinese project managers, contrary to the conventional wisdom that Western managers are more task orientated while their Chinese counterparts are more person orientated. Wong *et al.* suggest that “a ‘third leadership style’ which equally considers the importance of task performance and interpersonal relationships ... might also exist in the multinational construction firms in Hong Kong” (2007, p. 102). A plausible explanation for these findings is the notion of “leadership adjustment”, similarly to what has become known as “intercultural adjustment” (c.f. Brew and Cairns 2004) in cross-cultural studies, in which expatriate managers modify their behaviours (e.g. regarding communication and conflict management) to suit their host country’s culture. Here, however, the suggested

adjustment is in terms of the demands of the project context. Successful project delivery depends on acts required to “getting the job done” as well as “teamwork behaviours” that promote cooperation and collaboration. The need for both leadership styles in accomplishing this mutual goal is apparent. Project participants and leaders may therefore be accustomed or may have adjusted to both task and person leadership in recognition of the need for both in the project delivery process. This view of a hybrid leadership style is consistent with the sociotechnical systems theory emphasizes on the joint optimization of the technical and social sub-systems for the achievement of unit goals (c.f. Trist and Bamforth 1951) and also resonates with situational/contingency perspective of leadership as a dynamic process (c.f. Hersey and Blanchard 1982).

The findings from the sub-sample analyses are illuminating. They show that in client, consultant and dual teams only person orientated leadership is significantly associated with psychological empowerment, while in contractor organizations only task orientated leadership is significantly associated with psychological empowerment. A plausible explanation can be drawn from Walker’s (2002) systems perspective of project organization, in which at a general level the client and his/her representatives (in this case consultant and dual teams) constitute the managing sub-system concerned with decision-making, maintenance and regulatory activities (i.e. integration and control) while the contractor’s team constitutes the operating or task sub-system concerned with carrying out the professional and technical tasks required for project execution. The success of the managing sub-system is to a large extent rooted in the successful management of interrelationships (i.e. person orientated leadership) while the success of the operating or task sub-system lies in task performance (i.e. task orientated leadership).

In a comparative study of the organizational cultures of architects and contractors, Ankrah and Langford’s (2005) findings are supportive of this line of argument. They show that architectural practices are largely informal organizations in which control and coordination are achieved through empathy and direct personal contact among organizational members (i.e. person orientated leadership). Pertaining to contractors, however, their findings reveal that although they are also informal, control and coordination are achieved through formal methods and procedures (i.e. task orientated leadership). In support, Fellows *et al.* (2003) suggest that consultants are process orientated while contractors are more outcome orientated. An earlier study in Hong Kong by Rowlinson *et al.* (1993) found that while project managers and leaders in design teams generally exhibited relationship based leadership their counterparts in construction organizations displayed a range of leadership styles including both task and person orientated leadership. Earlier studies of leadership in the construction context in the UK by Bresnen *et al.* (1986) also found site managers exhibiting stronger task orientated leadership styles. However, Fellows *et al.* (2003) found that in Hong Kong relationship orientation of project quantity surveyors is stronger among contractors than consultants. Taken together, however, there is greater consistency between prior findings pertaining to the effectiveness of the different leadership styles and that found in this study and, thus, suggests that contrary to conventional wisdom, task orientated leadership style is not necessarily disempowering.

CONCLUSIONS

The role of the team or work-unit as a social environment for interaction that shape individual behaviour, attitudes and perceptions was the focus of this study. High

interdependence and both high person and task orientated leadership styles are related to high psychological empowerment in general as a result of leadership adjustment to changing project demands in order to accomplish the mutual goal of "getting the job done" and "teamwork" in project delivery. Span of control, however, has no association with psychological empowerment. Leadership styles have distinctive effects on psychological empowerment in client, consultant and contractor organizations. Person orientated leadership results in high psychological empowerment in client related organizational teams whose project role (i.e. managing sub-system) is better accomplished through the successful management of interrelationships and empathy. However, in contractor organizational teams, task orientated leadership results in high psychological empowerment as the contractor's project role (i.e. operating or task sub-system) is better accomplished through formal methods and procedures of task performance.

These findings have implications for training of leaders in project organizations and the range of competencies required in successful project leadership and delivery. They particularly imply that leaders must develop dynamic capabilities that can enable them to juggle both task and person orientated leadership styles and respond proactively to changing project demands in order to continuously motivate individuals and teams in successful project delivery. Methodologically, the findings of the sub-sample analyses suggest that construction management researchers must give much greater thought to the selection of samples in the design of studies and be aware that their findings may not necessarily generalize across client, consultant and contractor organizations. Considering construction organizations as a homogeneous sample can therefore result in erroneous findings and false conclusions.

Finally, interdependence and leadership style emerge as critical factors in engendering psychological empowerment in project teams and are concrete targets for organizations and leaders desirous of promoting psychological empowerment and therefore provide fertile avenues for further research.

ACKNOWLEDGEMENTS

The support of Grant No. 715807E (Stakeholder Management through Empowerment: A Paradoxical Approach to Modelling Project Success) from the Hong Kong Research Grants Council in providing funding for part of this study is gratefully acknowledged.

REFERENCES

- Ankrah, N A and Langford, D A (2005) Architects and contractors: A comparative study of organizational cultures. *Construction Management and Economics*, **23**(6), 595-607.
- Antonakis, J and Atwater, L (2002) Leader distance: A review and a proposed theory. *The Leadership Quarterly*, **13**(6), 673-704.
- Bass, B M (1985) *Leadership and performance beyond expectations*, New York: Free Press.
- Blake, R R and Mouton, J S (1964) *The managerial grid: key orientations for achieving production through people*, Houston, Texas: Gulf Publishers.
- Bliese, P D and Hanges, P J (2004) Being both too liberal and too conservative: The perils of treating grouped data as though they were independent. *Organizational Research Methods*, **7**(4), 400-417.
- Bresnen, M J, Bryman, A E, Ford, J R, Beardsworth, A D and Keil, E T (1986) Leader orientation of construction site managers. *Journal of Construction Engineering and Management*, **112**(3), 370-385.

- Brew, F P and Cairns, D R (2004) Do culture or situational constraints determine choice of direct or indirect styles in intercultural workplace conflicts? *International Journal of Intercultural Relations*, **28**(5), 331-352.
- Cammann, C, Fichman, M, Jenkins, D and Klesh, J (1979) *The Michigan organizational assessment questionnaire*, University of Michigan, Ann Arbor, Michigan: Unpublished Manuscript.
- Chen, G and Kanfer, R (2006) Toward a systems theory of motivated behaviour in work teams. In: Staw, B M (ed.) *Research in Organizational Behaviour*. Oxford: JAI.
- Chen, G, Kirkman, B L, Kanfer, R, Allen, D and Rosen, B (2007) A multilevel study of leadership, empowerment and performance in teams. *Journal of Applied Psychology*, **92**(2), 331-346.
- Dainty, A R J, Bryman, A and Price, A D F (2002) Empowerment within the UK construction sector. *Leadership and Organization Development Journal*, **23**(5/6), 333-342.
- Fellows, R, Liu, A M M and Fong, C M (2003) Leadership style and power relations in quantity surveying in Hong Kong. *Construction Management and Economics*, **21**(8), 809-818.
- Fleishman, E A, Mumford, M D, Zaccaro, S J, Levin, K Y, Korotkin, A L and Hein, M B (1991) Taxonomic efforts in the description of leader behaviour: A synthesis and functional interpretation. *Leadership Quarterly*, **2**(4), 245-287.
- Hersey, P and Blanchard, K H (1982) *Management of organizational behaviour: Utilizing human resources*, London: Prentice-Hall.
- Katz, D, Maccoby, N and Morse, N C (1987) *Productivity, supervision, and morale in an office situation*, New York: Garland.
- Kenny, D A and Judd, C M (1986). Consequences of violating the independence assumption in analysis of variance. *Psychological Bulletin*, **99**(3), 422-431.
- Lawler, E E (1992) *The ultimate advantage: Creating the high-involvement organization*, San Francisco, California: Jossey-Bass.
- Lewin, K (1947) Frontiers in group dynamics: Concept, method and reality in social science, social equilibrium and social change. *Human Relations*, **1**(1), 5-41.
- Liden, R C and Arad, S (1996) A power perspective of empowerment and work groups: Implications for human resources management research. In: Ferris, G R (ed.) *Research in personnel and human resources management*. London: JAI Press.
- Liden, R C, Wayne, S J and Bradway, L K (1997) Task interdependence as a moderator of the relation between group control and performance. *Human Relations*, **50**(2), 169-181.
- Orton, J (2000) *Key to successful Intercultural communication between partners in Australian-Chinese joint ventures*, Richardmord, Victoria, Australia: The Australia China Business Council.
- Ouchi, W G and Dowling, J B (1974) Defining the span of control. *Administrative Science Quarterly*, **19**(3), 357-365.
- Quinn, R E and Spreitzer, G M (1997) The road to empowerment: Seven questions every leader should consider. *Organizational Dynamics*, **26**(2), 37-49.
- Raudenbush, S W and Bryk, A S (2002) *Hierarchical linear models: Applications and data analysis methods*, Thousand Oaks, California: Sage Publications.
- Rowlinson, S M, Ho, T K K and Po-Hung, Y (1993) Leadership style of construction managers in Hong Kong. *Construction Management and Economics*, **11**(6), 455-465.

- Saavedra, R, Earley, P C and Van Dyne, L (1993) Complex interdependence in task-performing groups. *Journal of Applied Psychology*, **78**(1), 61-72.
- Spreitzer, G M (1995) Psychological empowerment in the workplace: Dimensions, measurement and validation. *Academy of Management Journal*, **38**(5), 1442-1465.
- Spreitzer, G M (1996) Social structural characteristics of psychological empowerment. *Academy of Management Journal*, **39**(2), 483-504.
- Spreitzer, G M and Quinn, R E (2001) *A company of leaders: Five disciplines for unleashing the power in your workforce*, San Francisco: Jossey-Bass.
- Steiner, I D (1972) *Group process and productivity*, New York: Academic Press.
- Stodill, R M and Coons, A E (eds.) (1957) *Leader behaviour: its description and measurement*, Research Monogram No. 88, Columbus, Ohio: Bureau of Business Research, The Ohio State University.
- Strahan, R and Gerbesi, K C (1972). Short, homogeneous versions of the Marlow-Crowne social desirability scale. *Journal of Clinical Psychology*, **28**(2), 191-193.
- Tannenbaum, R and Schmidt, W H (1973) How to choose a leadership pattern. *Harvard Business Review*, **51**(3), 162-180.
- Tesluk, P, Mathieu, J E, Zaccaro, D J and Marks, M (1997) Task and aggregation issues in the analysis and assessment of team performance. In: Brannick, M T, Salas, E and Prince, C (eds.) *Team performance assessment and measurement: theory, methods and applications*. Mahwah, NJ: Lawrence Erlbaum.
- Thompson, J D (1967) *Organizations in action: Social science bases of administrative theory*, New York: McGraw-Hill.
- Trist, E L and Bamforth, K W (1951) Some social and psychological consequences of the long-wall method of coal getting. *Human Relations*, **4**(3), 3-38.
- Tuuli, M M and Rowlinson, S (2007) Empowering project teams: Toward an integrative conceptualization of empowerment. In: Ahmed, S M, Azhar, S and Mohamed, S (eds.) *Proceedings of the 4th International Conference on Construction in the 21st Century (CITC IV)*. Gold Coast, Australia: CITV-IV, Miami, Florida.
- Tuuli, M M and Rowlinson, S (2010) What empowers individuals and teams in project settings? A critical incident analysis. *Engineering, Construction and Architectural Management*, **17**(1), 9-20.
- Van De Ven, A H, Delbecq, A L and Koenig, R (1976) Determinants of coordination modes within organizations. *American Sociological Review*, **41**(2), 322-338.
- Walker, A (2002) *Project management in construction*, Oxford, UK: Blackwell.
- Wong, J, Wong, P N K and Heng, L (2007) An investigation of leadership styles and relationship cultures of Chinese and expatriate managers in multinational construction companies in Hong Kong. *Construction Management and Economics*, **25**(1), 95-106.