

# Relational Pluralism in Project Settings: Towards a Research Agenda

Martin Morgan Tuuli, (email: m.m.tuuli@lboro.ac.uk)

School of Civil and Building Engineering, Loughborough University, UK.

Tas Yong Koh, (email: tasykoh@hku.hk)

Department of Real Estate and Construction, University of Hong Kong, Hong Kong.

Florence Phua, (email: f.phua@reading.ac.uk)

School of Construction Management & Engineering, University of Reading, UK.

## Abstract

*Construction projects are characteristically complex undertakings whose successful realisation requires the engagement of a myriad of individuals, teams and organisations. Projects therefore provide a platform for the emergence of multiplex (i.e. entities having more than one type of relationship), heterogeneous (i.e. entities connected to others from different backgrounds) and overlapping (i.e. entities belonging to clusters or spanning boundaries) relationships. This notion of the existence of relational pluralism in projects has implications for project constituents and project delivery. For individuals, it is how to grapple with multiple and conflicting identities in achieving outcomes. For teams, it is how to grapple with multiple types of inter-team relations and still maintain harmony to achieve goals, and for organisations, it is how to deal with the multiplicity of relationships among individuals and teams and still achieve goal congruence. This paper draws on social identity theory, social network theory and social capital, and their complementarity to explicitly examine the presence of multiplex, heterogeneous and overlapping relationships in projects and explain how relational pluralism can be exploited to facilitate effective project delivery. We further highlight the research avenues relational pluralism presents in project settings and examine the methodological implications of such research agendas.*

**Keywords:** Identity, project settings, Relational pluralism, social capital, social identity theory, social network theory

# 1. Introduction

The social networking zeitgeist appears to be here to stay and organizations are beginning to grapple with how the networks developed through social networking can help employees and the organization as well. Social networking has particularly highlighted the improbable task of trying to segregate relationships in different spheres of life in contemporary society and work settings (Ingram & Zou, 2008). An increasingly complex and uncertain business environment has also made understanding how individuals manage the delicate balance of relationships within groups, across organizational units and across hierarchical levels even more important (Oh, Chung and Labianca, 2004).

The workdays of most individuals involve interactions with colleagues, often necessitated by hierarchy or workflow requirements (Shah, 2010). Other interactions are however voluntary, generally self-generated, self-organized, and self-managed (Morton, Brookes, Smart, Backhouse, & Burns, 2004). These interactions result in individuals, teams and organizations forming complex and intertwining webs of relationships, a phenomenon captured under the rubric of relational pluralism, the notion that a focal entity (whether a person, a team, or an organization) can derive some meaning and possibility of action from relations with other entities (Gulati, Kilduff, Li, Shipilov and Tsai, 2011).

The importance of interpersonal relations, team spirit and collaboration is a recurring theme in construction management (Nicolini, 2002). The institutional arrangements through which projects are delivered therefore make relational pluralism inevitable. Construction projects are characteristically complex undertakings whose successful realization require the engagement of a myriad of specialist individuals, teams and fragmented as well as differentiated organizations (Styhre *et al.*, 2004). Projects therefore provide a platform for the emergence of relational pluralism, manifested in the form of multiplex relationships (i.e. entities having more than one type of relationship), heterogeneous relationships (i.e. entities connected to others from different backgrounds) and overlapping relationships (i.e. entities belonging to clusters or spanning boundaries) (Gulati et al, 2011). This paper explores the notion of relational pluralism in projects and its manifestations as well as implications for project constituents and project delivery. We draw on social identity theory, social network theory and social capital, and their complementarity as theoretical foundations to support the notion of relational pluralism. A research agenda highlighting the research avenues relational pluralism presents in project settings is offered as well as the methodological implications of such research agendas.

## 2. Theoretical Foundations of Relational Pluralism

The idea of relational pluralism has a long history, dating to the time of the ancient Greeks and idea that individuals have multiple selves from which unique identities are formed (Gulati et al, 2011, Obodaru, 2012). Since then, the question of whether to place emphasis on the plurality of selves or unitary nature of identity still remains. The psychologist William James (1890: 294) asserts that a person has as many social selves as they were other individuals who recognized the person and carried an image of the person in their mind. In support, the sociologist Georg Simmel (1955: 150),

argued that individuals become unique to the extent that they affiliate with many different non-overlapping groups. Relational pluralism is defined as the extent to which a focal entity (whether a person, a team, or an organization) derives its meaning and possibility of action from relations with other entities (Gulati et al, 2011). Gulati et al (2011) characterise relational pluralism along three dimensions of relationships; multiplex, heterogeneous and overlapping. In the sections that follow, we explain the foundation multiplex relations as rooted in social exchange theory, heterogeneous relationships as rooted in social identity theory and overlapping relationships as rooted in social capital. The complementarity of these theoretical foundations provides a profound grounding for the notion of relational pluralism.

### **3. Multiplex Relationships**

Multiplexity is defined as the extent to which actors are connected by more than one type of relationships (Gulati et al, 2011, Tichy, Tushman, & Fombrun, 1979). Multiplex relationships are rooted in social network theory and the notion that individuals, teams and organizations are invariably embedded in social systems and therefore form complex web of relationships among actors (Wasserman & Faust, 1994). Such actors therefore share “multiple bases for interaction” such as roles, actions, affiliations and exchanges (Verbrugge, 1979, Marsden & Campbell, 1984, Wasserman & Faust, 1994). Multiplex relationships are pervasive and can be exemplified by co-workers who are also friends, siblings running a business together, business associates entertaining clients on the golf course, and spouses belonging to different political parties (Kuwabara, Luo and Sheldon, 2010). Relationships can be multiplex on the basis of instrumental ties or affective ties if they introduce different norms of interaction (e.g. a parent and a child who simultaneously think of themselves as close friends) (Kuwabara, Luo and Sheldon, 2010). Multiplex relationships are distinct from repeated interactions, although multiplex relations necessarily involve repeated interactions but to be multiplex actors must interact on the basis of the same/different roles, actions and affiliations that overlap in time and space (Kuwabara, Luo and Sheldon, 2010). Organizational network scholars have previously overlooked multiplex relationships, due to an assumption that the instrumental component of relationships has independent consequences, while any social component plays an ancillary role (Shah, 2010). Shah (2010) contends and finds support that in multiplex ties, the instrumental and social components interdependently, rather than independently, affect performance.

#### **3.1 Heterogeneous Relationships**

Heterogeneity is the extent to which actors form connections with others from quite different backgrounds (e.g., different ethnicities, professions or industries) Gulati et al (2011). The notion of heterogeneity is rooted in identity theory. Indeed, social identity theorists have long emphasized the importance of relational aspects of self-identity (Brown and Phua, 2011) with some opining that identity construction involves the realization and ascription of ‘relationships of similarity and difference’ (Jenkins, 2004, p. 5). Social identity theory explains the self-categorisations that individuals use to enact their sense of belonging (i.e. identification) with particular human aggregates or groups that reinforces their self-conceptions (Ashforth and Mael, 1989; Tajfel and Turner, 1985). It therefore helps individuals answer the question, Who am I?, by delineating the social groups in which

they are members (Pratt and Rafaeli, 1997, Alvesson, Ashcraft and Thomas, 2008). While the need to identify may seem to suggest the formation of homogeneous rather than heterogeneous relationships, many scholars have stressed the dynamic character of the social world, pointing out that identity is temporary, context-sensitive and involve evolving set of constructions, rather than a fixed and abiding essence (Ashforth, 1998; Gioia et al., 2000, Gioia et al, 2010, Alvesson, Ashcraft and Thomas, 2008). Identity from this perspective can involve a negotiated process through which relationships are forged between actors who may otherwise have distinct identities (Gluch, 2009, and; Paton et al., 2010). Smith-Lovin (2007) also suggests that the high degree of differentiation and specialization in modern societies is “thinning” relationships toward unidimensional, simplex relations, at least in very close and personal circles. As identities are negotiated and formed, joint efforts to resolve relational conflicts arising from heterogeneity can build people’s sense of efficacy in their abilities to work together and build relationships that have positive consequences (De Dreu & Vliert, 1997; also Lawler, 2001). Some research however suggests that heterogeneity can have negative consequences. Smith and Postmes (2011) found example that group interactions can lead to increased out-group discrimination due to identity stereotypes and categorisations. Heterogeneity should therefore afford combining relationships from different spheres of life while taking measures to counter any negative consequences.

### **3.2 Overlapping Relationships**

Overlap is the extent to which the focal actor's relationships are clustered in one group or span across different groups (Gulati et al, 2011). A typical manifestation of overlapping relationships in a network structure context is the notion of closure (i.e. closed networks) (Coleman, 1988). Closed networks are characterized by ties that alter who are connected to each other, creating densely connected cliques in which for example “a friend of a friend is also a friend”. Closed networks might facilitate the formation of multiple relations to the extent that actors in closed triads interact more often and share broader bases of exchange with one another (Kuwabara, Luo and Sheldon, 2010). This structural network of relationships is at the heart of Coleman’s (1990) analysis of social capital and Granovetter’s (1985, 1992) discussion of “structural embeddedness”. This network structure fosters trust, as a given relationship “surrounded” by other relationships reinforces their commonalities and provides structural checks against deception and malfeasance (Chua, Ingram, et al., in press). The notion of overlapping relationships is rooted in social capital, which encompasses the resources embedded in the structure of social relations among individuals (Burt, 1992; Coleman, 1988; Nahapiet and Goshal, 1998). The three dimensions of social capital (i.e. structural, relational and cognitive dimensions) are particularly consistent with the notion of overlapping relationships and form the basis for developing some capital from relationships to accomplish tasks (Koh, Rowlinson and Tuuli, under review, Nahapiet and Goshal, 1998).

## **4. Manifestation and Implications of Relational Pluralism in Projects**

Relationships are central to the successful delivery of projects. Indeed, relational issues are often the cause of breakdown in teams rather than the technical complexity of projects (Fong and Lung 2007).

Relationships therefore have important consequences for different constituents in project settings. For individuals, it is how to grapple with multiple and conflicting identities in achieving outcomes. For teams, it is how to grapple with multiple types of inter-team relations and still maintain harmony to achieve goals, and for organizations, it is how to deal with the multiplicity of relationships among individuals and teams and still achieve goal congruence. In the sections that follow, we explore the manifestation of relational pluralism along the three dimensions of multiplexity, heterogeneity and overlap.

#### **4.1 Multiplex Relationships in Projects**

Because of the division of labour in many work contexts, we necessarily have to enter into relations with other entities to obtain information, resources and support to accomplish tasks (Durkheim, 1984) and this interdependence is particularly more apparent in construction project settings. In projects, multiplex relationships are particularly ubiquitous, often requiring constant negotiation of the challenges they bring. The longer work hours in projects also mean that people are more likely to form social relations within the confines of their work (Verbrugge, 1979). Yet, in projects in some contexts, multiplex relationships are actually actively avoided, ostensibly to prevent the trials and tribulations of mixing business and pleasure and the conflicts of interest that come with them. In Hong Kong for example, the consultant and client project teams need to abide by stringent ethical regulations at the project-level, particularly on public projects. The fear of being investigated or prosecuted by the Independent Commission Against Corruption (ICAC) is particularly strong, following the incidents of sub-standard piling of 2000 in the Hong Kong construction industry. This is a deterrent to the development of close or multiplex relationships at the project-level unless these are purely based on professional issues or clustered within the client or consultant organizations. Yet, people care profoundly about multiplex relations, both about their own and others (Kuwabara, Luo and Sheldon, 2010).

Partnership (strategic and project partnering) represents one example where multiplex relationships are actively encouraged in projects across the supply chain. In particular, organizations sponsor social activities outside of work to promote team-building (Kuwabara, Luo and Sheldon, 2010). Beckman and Haunschild (2002) find evidence that strategic alliances and CEO association memberships reinforce interlocking ties, which enhance learning and transfer of complex acquisition knowledge. They conclude that the more multiplex relations a firm possess with its network partners, the lower the price that the firm paid for its acquisitions.

Multiplex relationships however have other implications in project context that are worth mentioning. For work-life balance issues the network of relationships that emerge from multiplexity further blurs work and social life spheres. There is also the potential for tensions and role conflict to emerge as a result of the web of multiplex relations of focal entities. Thoits (1983, 1986) examined how maintaining multiple roles affects psychological well-being, demonstrating however that multiple identities and roles, such as spouse and employee, provide various benefits, including resource aggregation, justification for failing to meet certain role expectations, and buffering against role failure, which can help mitigate psychological stress.

## **4.2 Heterogeneous Relationships in Projects**

Construction projects are delivered through the assembly of specialized and differentiated teams. The formation of heterogeneous relationships between individuals, teams and organizations of different professional identities and disciplines is therefore inevitable. Formal heterogeneous relations are required because projects are characterized by both operational interdependence and organizational independence (Dubois and Gadde, 2002, Gluch, 2009). As Nicolini (2002, p. 167) points out, “interpersonal relations, team spirit and collaboration is a recurring theme in construction management”. Heterogeneous relationships in projects provide a platform for identities to be negotiated, threatened, supported and contested through ongoing interactions among interconnected and interacting project participants (Brown and Phua, 2011).

Heterogeneous relationships therefore have implications in projects. At the dyadic level, the extent to which people conform to each other's identities affects cooperation and performance (Phua, 2004, Milton & Westphal, 2005). The tension that arises from incompatible identity-related norms can strain relationships by causing role conflict, miscommunication, or misalignment of mutual interests and expectations (Ingram & Zou, 2008). These can manifest in project joint ventures, for example, which are increasingly needed to meet the technical and operational complexity of projects.

## **4.3 Overlapping Relationships in Projects**

Overlapping relationships manifests in various ways in projects. Examining social capital in projects, Koh, Rowlinson and Tuuli (under revision) found that the structural dimension, consistent with overlapping, manifests itself through facilitating information and communication, transfer of influence and authority, provides a forum through which project members can evaluate the trustworthiness, reputations, quality, and affiliation of other members. In support they also found in tandem with previous research that the relational dimension provides a normative structure that helps the generation of a common set of convention, climate, rules and routines (Granovetter 1992, Koh, Rowlinson and Tuuli, under revision). Also as discussed above, resistance to the formation of multiplex relationships across organizational boundaries as a result of corruption concerns can lead to the clustering of plural relationships within organizations.

## **5. Towards a Research Agenda and Methodological Challenges**

The relatively unexplored nature of relational pluralism in projects presents fertile avenues for future research in construction management. Some of the preliminary research in this field in project settings includes those exploring social capital in projects (cf. Koh, Rowlinson, Tuuli, under review, Koh and Rowlinson, in press, Bresnen et al 2003), relationship marketing (c.f. Bengtson, Havila and Aberg, 2001: Dubois and Gadde, 2002), relationship management (c.f. Kadefor, 2004, Holmen, van der Veen and Doree, 2002, Cheung et al, 2005) and relational contracting (c.f. Anvuur, Kumaraswamy and Mahesh, 2011, Pryke and Smyth, 2006). Thus, although relational pluralism is pervasive in projects, we know surprisingly little about when, under what circumstances, and exactly how the ties that

emerge from multiplex, heterogeneous and overlapping relations strengthen or weaken relationships (Kuwabara, Luo and Sheldon, 2010). The dynamics and consequences of relational pluralism also remain understudied. Shah (2010) from an organization studies perspective for example, shows that there are individual performance consequences of multiplex relations. From the perspective of projects, while the above provide fertile avenues for research, a more productive agenda may be to start mapping the manifestations and dimensionality of relational pluralism in project settings. This will provide contextual grounding to the notion of relational pluralisms and afford the examination of the antecedents and consequences of plural relationships.

Methodologically, researching relationships and human interactions is challenging especially within the construction management domain which lacks strong methodological tradition or proven methodologies or methods. While this presents opportunities for experimenting with methods drawn from other disciplines such as the social sciences, the ability of researchers to appropriately employ such methods represents a challenge on its own. An approach, which may be suited to exploring relational pluralism, is a mixed methodological approach (c.f. Creswell, 2003) where quantitative and qualitative methods will be blended to reveal different and complementary perspectives (Steckler et al, 1992) of a complex concept such as relational pluralism. The combination of quantitative and qualitative methods in social research is supported by many researchers who argue that theory building requires 'hard' data for uncovering relationships and 'soft' data for explaining them (c.f. Dainty, 2008, Loosemore *et al.*, 1996). Making the case for social researchers in construction management to embrace *methodological pluralism*, Dainty (2008) argued that such an approach has the potential of providing better understanding of the complex network of relationships which shape industry practice. Since different paradigms focus attention on different aspects of a situation, methodological pluralism is warranted to capture the full richness of real world problems, such as relational pluralism, which are often highly complex and multidimensional (Mingers and Brocklesby, 1997). Methodological pluralism, however, is not without problems. Philosophically, there is the issue of paradigm incommensurability, the view that the underlying assumptions in different paradigms are irreconcilable; theoretically, it is a challenge to effectively fit different methodologies together; and practically, researchers are unlikely to have the wide range of knowledge, skills and flexibility required to effectively implement a multimethod study (Mingers and Brocklesby, 1997). To overcome the philosophical dilemma of paradigm incommensurability, an ontology of *critical realism* may be invoked which subsumes the objective-subjective dichotomy; a view supported by the work of Bhaskar (Bhaskar, 1989, Bhaskar, 1994) and Giddens (1984) on structuration theory, both of whom reject the notion of choosing between the competing realities offered by realist or normalist thinking. This ontological position allows researchers to combine methods and techniques from originally competing paradigms without the need to constantly adjust philosophical positions depending upon whichever method is being used at any given time (Mingers and Brocklesby, 1997). To address the theoretical difficulties of linking different methodologies or parts of methodologies in a systematic manner a sequential framework may be adopted, in which qualitative approaches are followed by quantitative approaches for example. Lastly, the practical problems of undertaking a multimethodological study can be overcome by drawing together a team of researchers with prior training and experience of employing a wide range of qualitative and quantitative methods in previous research projects.

Another promising methodological approach for examining relational pluralism is multilevel analysis. Although relational pluralism manifests across individuals, teams, and organizations, researchers are yet to explore relational pluralism from a multilevel perspective. How relational pluralism at one level affects the emergence of status and power at other levels for example, presents fertile avenues for future research. Such multilevel studies can employ diary data together with social network analysis through case study approaches (c.f. Yin, 2003) in order to capture the emergence of multiplex, heterogeneous and overlapping relations in projects.

Other research avenues worthy of consideration include the moderation and/or mediation role of relational pluralism in the relationship between constructs of interest in project context. For example, while organisational, team and individual capabilities may have a direct link to project performance and outcomes, is it possible that indirect benefits of capabilities for project performance could exist through the relationship networks that individuals, teams and organisations develop (i.e. relational pluralism)? Preliminary studies by Koh and Rowlinson (in press) are suggestive of the possibility of such mediating/moderating effects.

## 6. Conclusion

Relational pluralism manifests in projects in the form of multiplex, heterogeneous and overlapping relations. Preliminary research in projects show that the relational approach, which promotes intensive social and professional interactions, has some performance implications for individuals, teams and organizations involved in projects (cf. Koh, Rowlinson, Tuuli, under review, Bresnen et al 2003, Carey et al. 2011). This paper draws on social identity theory, social network theory and social capital, and their complementarity to examine the emergent multiplex, heterogeneous and overlapping relationships in projects and has shown that relational pluralism can be exploited to facilitate project delivery. The largely unexplored nature of relational pluralism in projects presents fertile avenues for researchers. Pursuing such research avenues could help us better understand how relational pluralism shapes the dynamics of relational interactions in projects and the impact on project outcomes.

## 7. References

- ANVUUR, A. M., KUMARASWAMY, M. M. & MAHESH, G. 2011. Building “relationally integrated value networks” (RIVANS). *Engineering, Construction and Architectural Management*, 18, 102 - 120.
- ALVESSON, M., ASHCRAFT, K. L. & THOMAS, R. 2008. Identity Matters: Reflections on the Construction of Identity Scholarship in Organization Studies. *Organization*, 15, 5-28.
- ASHFORTH, B. E. 1998. Becoming: How Does the Process of Identification Unfold? In: WHETTEN, D. & GODFREY, P. (eds.) *Identity in Organizations: Developing Theory Through Conversations*. Thousand Oaks, CA: Sage.



- ASHFORTH, B. & MAEL, F. 1989. Social identity theory and organization. *Academy of Management Review*, 14, 20-39.
- BENGTSON, A., HAVILA, V. & ABERG, S. 2001. Network dependencies and project termination: why some relationships survive the end of a project. *Proceedings of 17th IMP Conference. Oslo, Norway*.
- BHASKAR, R. 1989. *Reclaiming reality : a critical introduction to contemporary philosophy*, London, Verso.
- BHASKAR, R. 1994. *Plato etc. : the problems of philosophy and their resolution*, London, Verso.
- BRESNEN, M., EDELMAN, L., NEWELL, S., SCARBROUGH, H. & SWAN, J. 2003. Social practices and the management of knowledge in project environment. *International Journal of Project Management*, 21, 157-166.
- BURT, R. S. 1992. *Structural Holes*, Cambridge, Harvard University Press.
- BROWN, A. D. & PHUA, F. T. T. 2011. Subjectively construed identities and discourse: towards a research agenda for construction management. *Construction Management and Economics*, 29, 83 – 95.
- CAREY, S., LAWSON, B. & KRAUSE, D. R. 2011. Social capital configuration, legal bonds and performance in buyer–supplier relationships. *Journal of Operations Management*, 29, 277–288.
- CHEUNG, F. Y. K., ROWLINSON, S., JEFFERIES, M. & LAU, E. 2005. Relationship Contracting in Australia. *Journal of Construction Procurement: Special Issue on 'Trust in Construction'*, 11, 123-135.
- CHUA, R. Y. J., INGRAM, P. & MORRIS, M. in press. From the head and the heart: Locating cognition- and affect-based trust in managers' professional networks. *Academy of Management Journal*.
- COLEMAN, J. S. 1988. Social capital in the creation of human capital. *The American Journal of Sociology*, 94, 95–120.
- COLEMAN, J. S. 1990. *Foundations of social theory*, New York, Free Press.
- CRESWELL, J. W. 2003. *Research design: Qualitative, quantitative, and mixed methods approaches*, Thousand Oaks, California, Sage Publications.
- DAINTY, A. 2008. Methodological pluralism in construction management research. In: KNIGHT, A. & RUDDOCK, L. (eds.) *Advanced Research Methods in the Built Environment USA*: Wiley-Blackwell.

DE DREU, C. K. W. & VLIERT, E. V. D. 1997. Using conflict in organizations, London, Sage.

DUBOIS, A. & GADDE, L. E. 2002. The construction industry as a loosely coupled system: implications for productivity and innovation. *Construction Management and Economics*, 20, 621–631.

FONG, P. S. W. & LUNG, B. W. C. 2007. Interorganizational teamwork in the construction industry. *Journal of Construction Engineering and Management*, 133, 157-168.

GIDDENS, A. 1984. *The constitution of society: Outline of the theory of structuration*, Berkeley, University of California Press.

GIOIA, D., SCHULZ, M. & CORLEY, K. 2000. Organizational Identity, Image, and Adaptive Instability. *Academy of Management Review*, 25, 63–81.

GIOIA, D. A., PRICE, K. N., HAMILTON, A. L. & THOMAS, J. B. 2010. Forging an identity: an insider- outsider study of processes involved in the formation of organizational identity. *Administrative Science Quarterly*, 55, 1 – 46.

GLUCH, P. 2009. Unfolding roles and identities of professionals in construction projects: Exploring the informality of practices. *Construction Management and Economics*, 27, 959 – 968.

GULATI, R., KILDUFF, M., LI, S., SHIPILOV, A. & TSAI, W. 2011. Relational pluralism of individuals, teams and organizations. *Academy of Management Journal (Call for Papers - Special Research Forum)*.

GRANOVETTER, M. 1985. Economic-action and social-structure—The problem of embeddedness. *American Journal of Sociology*, 91, 481–510.

GRANOVETTER, M. 1992. Economic institutions as social constructions—A framework for analysis. *Acta Sociologica*, 35, 3–11.

HOLMEN, E., VAN DER VEEN, B. & DOREE, G. A. 2002. Inter-organization relationships in construction: present lack of consensus and inspiration for further research. *Proceedings of 18th Annual ARCOM conference*. University of Northumbria.

KADEFOR, A. 2004. Trust in project relationships-inside the black box. *International Journal of Project Management*, 22, 175-182.

KOH, T. Y., ROWLINSON, S. & TUULI, M. M. under review. Social capital in construction projects: a mixed methods exploration. *Journal of Construction Engineering and Management*.

KOH, T. Y. & ROWLINSON, S. in Press. Relational approach in managing construction project safety: A social capital perspective. *Accident Analysis Prevention*.

- LAWLER, E. J. 2001. An affect theory of social exchange. *American Journal of Sociology*, 107, 321–352.
- LING, F. Y. Y. & LI, S. 2012. Using social network strategy to manage construction projects in China. *International Journal of Project Management*, 30, 398–406.
- LOOSEMORE, M., HALL, C. & DAINTY, A. R. J. 1996. Excitement, innovation and courage in construction management research: Challenging historical values. In: THORPE, A. (ed.) *Proceedings of the 12th Annual ARCOM Conference*. Sheffield Hallam.
- MARSDEN, P. V. & CAMPBELL, K. E. 1984. Measuring tie strength. *Social Forces*, 63, 482–501.
- MINGERS, J. & BROCKLESBY, J. 1997. Multimethodology: Towards a framework for mixing methodologies. *Omega-International Journal of Management Science*, 25, 489-509.
- MORTON, S. C., BROOKES, N. J., SMART, P. K., BACKHOUSE, C. J. & BURNS, N. D. 2004. Managing the informal organization: conceptual model. *International Journal of Productivity and Performance Management*, 53, 214-232.
- NAHAPIET, J. & GOSHAL, S. 1998. Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23, 242–266.
- NICOLINI, D. 2002. In search of ‘project chemistry’. *Construction Management and Economics*, 20, 167–677.
- OBODARU, O. 2012. The self not taken: How alternative selves develop and how they influence our professional lives. *Academy of Management Review*, 37, 34–57.
- OH, H., CHUNG, M.-H. & LABIANCA, G. 2004. Group social capital and group effectiveness: The role of informal socializing ties. *Academy of Management Journal*, 47, 860–875.
- PATON, S., HODGSON, D. & CICMIL, S. 2010. Who am I and what am I doing here? Becoming and being a project manager. *Journal of Management Development*, 29, 157 – 166.
- PHUA, F. T. T. 2004. The antecedents of cooperative behaviour among project team members: an alternative perspective on an old issue. *Construction Management and Economics*, 22, 1013–1045.
- PRATT, M. G. & RAFAELI, A. 1997. Organizational Dress as a Symbol of Multilayered Social Identities. *Academy of Management Journal*, 40, 862-898.
- PRYKE, S. D. & SMYTH, H. J. (eds.) 2006. *The management of complex projects - a relationship approach*: Blackwell Publishing.
- SHAH, N. P. 2010. *The Individual Performance Effects of Multiplex Relationships in Workplace*

*Social Networks*. Doctor of Philosophy in Management, University of California.

SMITH-LOVIN, L. 2007. The strength of weak identities: Social structural sources of self, situation and emotional experience. *Social Psychology Quarterly*, 70, 106–124.

SMITH, L. G. E. & POSTMES, T. 2011. The power of talk: Developing discriminatory group norms through discussion. *British Journal of Social Psychology* 50, 193–215.

STECKLER, A., MCLEROY, K. R., GOODMAN, R. M., BIRD, S. T. & MCCORMICK, L. (1992) Toward integrating qualitative and quantitative methods: An introduction. *Health Education Quarterly*, 19 (1), 1-8.

STYHRE, A., JOSEPHSON, P.-E. & KNAUSEDER, I. 2004. Learning capabilities in organizational networks: Case studies of six construction projects. *Construction Management & Economics*, 22, 957-966.

TAJFEL, H. & TURNER, J. C. 1985. The social identity theory of intergroup behaviour. In: WORCHEL, S. & AUSTIN, W. G. (eds.) *Psychology of intergroup behaviour*. Chicago: Nelson-Hill.

TICHY, N. M., TUSHMAN, M. L. & FOMBRUN, C. 1979. Social Network Analysis for Organizations. *Academy of Management Review*, 4, 507-519.

THOITS, P. A. 1983. Multiple identities and psychological well-being: A reformulation and test of the social isolation hypothesis. *American Sociological Review*, 48, 174–187.

THOITS, P. A. 1986. Social support as coping assistance. *Journal of Consulting and Clinical Psychology*, 54, 416–423.

VERBRUGGE, L. M. 1979. Multiplexity in Adult Friendships. *Social Forces*, 57, 1286-1309.

WASSERMAN, S. & FAUST, K. 1994. *Social network analysis: Methods and applications*, Cambridge, NY, Cambridge University Press.