## **Contents**

Acknowledgements	9
1. Introduction and research questions	.11
2. The position of social network analysis within the sociological research	
tradition	
2.1. Why networks? Theoretical perspectives of social network analysis	
2.1.1. Critique of atomized views and the argument for embeddedness	
2.1.2. Relational embeddedness: dyadic relationships as the unit of analysis	
2.1.3. Structural embeddedness, structural analysis of actions	
2.1.4. Beyond structural determinism	21
2.2. Why quantitative representation? Methodical perspective of social	
network analysis	. 24
2.2.1. Beyond individualistic methods	
2.2.2. Representing social networks	
2.3. Basic methodical concepts of social network analysis	
2.3.1. Individual actors in networks I: centrality and prestige	
2.3.2. Individual actors in networks II: positions and roles	32 21
2.3.2. Individual actors in networks 11. positions and foles	
2.3.4. Affiliations and overlapping sub-groups	
2.3.5. Structure of overall networks.	
2.3.6. Quantitative models for understanding mechanisms of social networks	
2.4. Conclusion: Clarifying the relationship of individuals and social	
structure	. 42
3. Localised knowledge spillovers: theoretical perspectives and critique	.49
3.1. What are localised knowledge spillovers?	
3.1.1. Definition of localised knowledge spillovers:	
3.1.2. Two general types of knowledge spillovers	30 51
3.1.3. Mechanisms of localised knowledge spillovers based on tacit knowledge?	51 52
3.2. Localised knowledge spillovers in the new economics of	. 52
innovation/econometric approaches	53
3.2.1. Knowledge production function	. 53 53
3.2.2. Patent citations	
3.3. Localised knowledge spillovers in economic geography/territorial	
innovation models	56
3.3.1. Localised knowledge spillovers and tacit knowledge	
3.3.2. Local preconditions for localised knowledge spillovers	58
3.3.3. Unstructured local buzz	
3.4. Critique of previous studies on localised knowledge spillovers	
3.4.1, Mediation by market mechanisms? Intentional knowledge flows?	
3.4.2. Econometric approaches: no cogent evidence of localised knowledge spillovers.	61
3.4.3. Territorial innovation models: problems of empirical evidence	65
3.4.4. Tacitness and localised knowledge spillovers form an odd couple	66

3.5. Conclusion: the need for deeper investigations of localised knowledge spillovers	. 68
4. Knowledge, communities, space and scope for social network analysis	71
4.1. Knowledge and knowing	.71
4.1.1. A variety of knowledge concepts	71
4.1.2. Knowledge as possession versus knowing as practice	72
4.2. Codified and unarticulated knowledge: a new knowledge topography	. 73
4.2.1. Codified knowledge	75
4.2.2. Tackling tacit knowledge	75
4.2.3. Knowledge topography	76
4.3. Communities, networks and collectives: knowledge flows beyond islands	
of innovation?	78
4.3.1. Communities of practice and epistemic communities	80
4.3.2. Epistemic collectives, networks of practice and networked individualism	81
4.3.3. Manifest knowledge practices versus latent opportunities in awareness spaces	
4.3.4. Knowledge activities beyond firm boundaries and geographical boundaries?	
4.4. Opening the black box localised knowledge spillovers	87
4.4.1. The necessity for disentangling different mechanisms	87
4.4.2. Mechanisms of knowledge spillovers	89
4.4.3. Geographical proximity and localisation of knowledge spillovers	91
4.4.4. Scope for social network analysis	90
5. Some perspectives of social network analysis for analysing localised	0.5
knowledge spillovers	97
5.1. Case study I: networks of inventors	97
5.1.1. Reconsidering the patent citation exercise	97
5.1.2. Social distance and mobility	99
5.1.3. Empirical results	
5.1.4. Conclusion	
5.2. Case study II: advise networks of technicians in industrial clusters	
5.2.1. Knowledge spillovers via informal advice flows among the technical personnel	106
5.2.2. Analysing network structural characteristics of the knowledge system	. 107
5.2.3. Conclusion.	
5.3. Interpreting social networks of knowledge workers	120
5.3.1. Networks of inventors via patent data	. 120
5.3.2. Advice networks among knowledge workers	
5.3.3. Conclusion	
5.4. Limitations of social network analysis	131
5.4.1. How can we get the data?	. 132
5.4.2. Mechanisms of knowledge spillovers out of sight?	
5.4.3. Conclusion	
6. Overall conclusion: what have we learnt?	
Tables and Figures	145
Bibliography	147