Department of Management

Generalised Exchange Orientation: A New Construct and its Antecedents and Consequences

Katsuhiko Yoshikawa

A thesis submitted to the Department of Management of
the London School of Economics and Political Science
for the degree of Doctor of Philosophy,
London, May 2017.

Declaration

I certify that the thesis I have presented for examination for a PhD degree from the London School of Economics and Political Science is solely my own work.

I warrant that this authorisation does not, to the best of my belief, infringe upon the rights of any third party.

I declare that my thesis consists of 71,647 words (including footnotes and excluding references and appendices).

Abstract

Although generalised exchange has been considered to be a key ingredient of organisational social capital, it has attracted limited attention in the organisational behaviour (OB) literature. Drawing upon studies of generalised exchange in a wide range of social science disciplines and social exchange research in the OB literature, I aim to answer a key question about generalised exchange: why do some people and not others engage in generalised exchange?

In this thesis, I propose that the rule of collective reciprocity is the fundamental regulating mechanism of generalised exchange and introduce the concept of generalised exchange orientation (GEO) – individuals' beliefs in favour of the rule – as an individual characteristic that motivates individuals to engage in generalised exchange. I create a theoretical framework on the antecedents and consequences of GEO and conduct three empirical studies to examine the propositions. In the first study, I develop and validate scales to measure GEO and orientations to other forms of social exchange. The results support the new scales' validity and their measurement invariance between the United States and Japan. The second study is to analyse the antecedents of GEO and indicates that task interdependence and depersonalised trust promote GEO over time. The third study involves analysing the impact of GEO on knowledge-sharing behaviours on an in-house online platform, and it shows that GEO promotes the behaviours, moderated by organisational identification. This evidence unpacks the micro-foundations of the occurrence of generalised exchange in organisations and provide insights into the development of individual orientation towards generalised exchange. Theoretical and practical implications will be discussed.

Acknowledgement

My PhD journey has been filled with challenges and enjoyment. It certainly pushed me beyond the limits of my intellectual capabilities and required me to learn and try a wide range of new knowledge and skills. At the same time, I totally relished the encounters with new ideas, discoveries and stimulating conversations with a wide range people from different parts of the world. I would like to acknowledge those who have energised me to go through this journey.

First, I would like to thank my wife, Yumi, for her unconditional support of my studies. There is no question about her contribution to my physical and mental health during my PhD studies, and I could not make this journey without her cheerful and optimistic encouragement over the years.

I am hugely grateful to my supervisors, Dr Hyun-Jung Lee and Dr Chia-huei Wu. Hyun-Jung provided me with the first chance to seriously think about shifting my career towards academia, and throughout my PhD studies, she has constantly challenged the way I look at the subject and expanded the boundaries of my thinking. Chia-huei has always encouraged me to go further by setting high standards and providing down-to-earth advice. I also thank both of them for the confidence they placed in me. Dr Daniel Beunza and Professor Jackie Coyle Shapiro deserve special mention – I came up with the core idea of this thesis in Jackie's seminar, and Daniel exposed me to a wide range of top thinkers in the OB literature through the PhD seminar he organised. I also thank Professor David Marsden for his encouragement of the initial idea for this project. My special thanks go to Leo Beattie and Imran Iqbal for their excellent support of the entire PhD programme. It was my great pleasure to work with them as a PhD representative for two years.

I also had chances to learn from researchers beyond LSE. I am grateful to Professor Jone Pearce, whose seminar provided me with a foundational understanding of rigorous and interesting research as well as scale development. I also thank Professor Anne-Wil Harzing. Through collaborating with Anne-Wil and Hyun-Jung, I learned much about academic collaboration. My special thanks go to Professor Atsushi Yashiro and Dr Mari Yamauchi for their advice about starting my PhD after a career in industry. I would also like to acknowledge Dr Cynthia Stellos Phelan for her always insightful comments about my research. I also thank my co-presenters at the 2016 Annual Conference of the Academy of Management, Professor Robert E. Eisenberger, Dr Robert Buch and Binqing Wu, for their feedback on my theoretical discussion. Finally, I would like to state my gratitude to the participants of the research seminars I conducted at Shanghai Jiao-Tong University and Essex Business School. Their comments were invaluable inputs for this thesis.

I want to express my gratitude to my colleagues and friends. My PhD colleagues – Dr Jonathan Ashtong-Lamptey, Dr Esther Canonico, Dr Zhuoqing Chen, Dr Enrico Rossi, Salma Raheem, Karin King, Ceren Erdem, Elisa Pannini, Aurelie Cnop, Chiachi Chang, Rebecca Campbell, Laura Zimmerman and Kyung Ryul Park – made my PhD life at the New Academic Building an enjoyable one. I also thank my friends and colleagues in industry for always being a good source of inspiration. I would like to especially acknowledge Rie Arai, Wang Cheng, Yoichi Furuno, Riyo Furusaka, Shingo Hosono, Kou Inoue, Shusuke Irie, Kei Ishibashi, Ayako Matsumoto, Makoto Nakashita, Akihito Oshiro, Manabu Sato, Koji Sekiguchi, Ai Shitama, Yasuto Tachi and Hiroshi Yamauchi.

Finally, I would like to express my sincere gratitude to my parents, Ikuo and Keiko Yoshikawa, who nurtured my basis as an intellectual entrepreneur. I am grateful for their warm support for their son's adventure on the other side of the globe.

Table of Contents

Declaration **1**
Abstract **2**
Acknowledgement **3**
List of Tables **8**
List of Figures **9**
List of Abbreviations **10**

Chapter 1. Introduction **11**
1-1. Purpose and background 11
1-2. Intended contributions 18
1-3. Personal motivation behind this thesis 23
1-4. Structure of the thesis 24

Chapter 2. Theory Development **27**
2-1. Three forms of social exchange: negotiated, reciprocal and generalised 27
2-2. Generalised exchange orientation as an individual characteristic 40
2-3. Consequences of GEO 43
2-3-1. Social exchange and work performance 44
2-3-2. Existing approaches of individual orientations on social exchange and work performance 47
2-3-3. GEO and work performance 52
2-3-4. Boundary conditions for GEO 55
2-4. Antecedents of GEO 58
2-4-1. Organisational context and changes in GEO 58
2-4-2. Job characteristics 61
2-4-3. Social environment 63
2-4-4. Organisational practices 65
2-4-5. Individual dispositions as moderators 69
2-5. Conclusion 74

Chapter 3. Research Model and Research Design **75**
3-1. Research model 76
3-1-1. GEO and other two facets of social exchange orientations 77
3-1-2. Antecedents: task interdependence, perceived shared goals and depersonalised trust 80
3-1-3. Consequences: online knowledge-sharing behaviours 83
3-2. Research design 86
3-2-1. Chapter 4. Scale development and validation 87
3-2-2. Chapter 5. Antecedents of GEO 91
3-2-3. Chapter 6. Consequences of GEO 93
3-3. Quality of quantitative research: validity, reliability and generalisability 97
3-4. Conclusion 100

Chapter 4. Scale Development and Validation **102**
4-1. Stage 1: Item generation and refinement 102
4-1-1. Item generation 102
4-1-2. Content validity 105
4-1-3. Participants and procedure 105
4-1.4. Results 107
4-2. Stage 2: Factor structure 107
4-2-1. Participants and procedure 107
4-2.2. Results 109
4-3. Stage 3: Psychometric analysis 112
4-3-1. Hypothesis 112
4-3-2. Participants and procedure 116
4.3-3. Measures 117
4-3-4. Results 119
4-3-5. Discussion 128
4-4. Stage 4: Cross-national validation 129
4-4-1. Participants and procedure 129
4-4-2. Measures 130
4-4-3. Results 130
4-4-4. Discussion 136
4-5. Stage 5: Incremental validity 137
4-5-1. Hypothesis 137
4-5-2. Participants and procedure 140
4-5-3. Measures 141
4-5-4. Results 142
4-5-5. Discussion 149
4-6. General discussion and conclusion 149

Chapter 5. Antecedents of GEO **152**
5-1. Changes in GEO and its antecedents 153
5-1-1. Task interdependence 154
5-1-2. Perceived shared goals 156
5-1-3. Depersonalised trust 157
5-2. Speed of change 157
5-3. Methods 159
5-3-1. Participants and procedure 159
5-3-2. Measures 160
5-4. Results 161
5-4-1. Response check 161
5-4-2. Measurement model 162
5-4-3. Hypothesis test: antecedents and changes in GEO 167
5-4-4. Supplemental analysis: antecedents and changes in NEO and REO 171
5-5. Discussion 174
5-6. Conclusion 179

Chapter 6. Consequences of GEO 180
6-1. Knowledge-sharing behaviours in organisations 181
6-2. Prior approaches to co-worker social exchange relationships 184
6-3. Knowledge-sharing behaviours on online platforms 185
6-4. Hypotheses 189
6-4-1. GEO and organisational identification 189
6-4-2. REO and boundary-spanning interpersonal ties 190
6-4-3. NEO 193
6-5. Methods 193
6-5-1. Participants and procedure 193
6-5-2. Measures 195
6-5-3. Analytical approach 198
6-6. Results 200
6-6-1. Response check 200
6-6-2. Measurement model 201
6-6-3. Hypothesis test 205
6-6-4. Robustness check 209
6-7. Discussion 209
6-8. Conclusion 214

Chapter 7. Overall Discussion 215
7-1. What is generalised exchange? Why does it matter? 215
7-2. GEO as individual characteristics 216
7-3. Summary of findings 217
7-4. Contributions of the thesis 219
7-5. Theoretical implications 225
7-5-1. Co-evolution of GEO, identification and generalised exchange 225
7-5-2. Boundaries of generalised exchange 227
7-5-3. The role of social context in shaping individual orientations 231
7-5-4. Regulatory mechanisms of social exchange 233
7-6. Practical implications 238
7-7. Limitations 240
7-8. Future research 244
7-9. Concluding remarks 249

References 250

Appendix 1: Survey (Chapter 4, Stage 1) 297
Appendix 2: Survey (Chapter 4, Stage 2) 302
Appendix 3: Survey (Chapter 4, Stage 3) 313
Appendix 4: Survey (Chapter 4, Stage 4; Chapter 5) 325
Appendix 5: Survey (Chapter 6) 339

List of Tables

Table 2-1. Examples of different terminologies used by prior researchers 29

Table 2-2. Characteristics of three forms of social exchange 30

Table 2-3. Summary of prior studies on individual orientations towards social exchange and work performance 48

Table 3-1. Summary of research design in Chapter 4 90

Table 3-2. Summary of data collection methods in Chapter 6 95

Table 4-1: Definitions of GEO, NEO, REO and lower-order constructs of GEO 103

Table 4-2. Results of EFA 111

Table 4-3. CFA results for the hypothesised model 121

Table 4-4. Model fit of hypothesised and alternative models 123

Table 4-5. Descriptive statistics of SEO and criterion variables 124

Table 4-6. Results of regression analysis (SEOs and criterion variables) 128

Table 4-7. Results of measurement invariance test 134

Table 4-8. Descriptive statistics of SEO variables by country 136

Table 4-9. Descriptive statistics and correlations of variables for incremental validity test.. 145

Table 4-10. Results of mixed model linear regression (Task performance) 146

Table 4-11. Results of mixed model linear regression (OCB-I) 147

Table 4-12. Results of mixed model linear regression (OCB-O) 148

Table 5-1: Results of longitudinal measurement invariance test 165

Table 5-2: Descriptive statistics, correlation and reliability 166

Table 5-3. Results of longitudinal panel model analysis (GEO)............................... 170

Table 5-4. Results of longitudinal panel model analysis (NEO) 172

Table 5-5. Results of longitudinal panel model analysis (REO) 173

Table 6-1. Descriptive statistics, correlation and reliability .... 202 - 204

Table 6-2. Results of rare-event logistic regression 206

Table 7-1. Factors of engagement in reciprocal and generalised exchange 221

List of Figures

Figure 2-1. Three proposed mechanisms of generalised exchange 36

Figure 3-1: Research model of this thesis 77

Figure 3-2. Illustration of data collection methods for Chapter 4 Stage 4 and Chapter 5 91

Figure 4-1. Alternative models for CFA 122

Figure 5-1. Analytical model with autoregressive paths and hypothesised path 168

Figure 6-1. Results of simple slope analyses 207

Figure 6-2. Estimated probability of response, with different number of received responses at different levels of GEO and organisational identification ... 208

List of Abbreviations

CEO	Chief executive officer
CFA	Confirmatory factor analysis
CFI	Comparative fit index
df	Degrees of freedom
EFA	Exploratory factor analysis
GEO	Generalised exchange orientation
HR	Human resources
HRM	Human resource management
LMX	Leader–member exchange
NEO	Negotiated exchange orientation
OB	Organisational behaviour
OCBs	Organizational citizenship behaviours
OCB-O	Organisation-directed OCBs
OCB-I	Individual-directed OCBs
PIF	Paying-it-forward
POS	Perceived organisational support
REO	Reciprocal exchange orientation
RMSEA	Root mean squared error of approximation
RWR	Rewarding reputation
S.D.	Standard deviation
S.E.	Standard error
SEM	Structural equation modelling
SEOs	Social exchange orientations
SET	Social exchange theory
SRMR	Standardised root mean residual
TMX	Team–member exchange
TLI	Tucker-Lewis index
UGI	Unilateral giving with expectations for indirect reciprocation
UK	United Kingdom
US	United States

Chapter 1. Introduction

1-1. Purpose and background

The aim of this thesis is to advance our understanding about generalised social exchange, focusing on one question: why do some people and not others engage in generalised exchange? In order to answer this question, I investigate individuals' orientation towards this form of social exchange, its impact on knowledge-sharing behaviours and the boundary condition, and the influence of organisational context in shaping the orientation.

Generalised exchange is one of three basic forms of social exchange – namely, negotiated, reciprocal and generalised exchange (Flynn, 2005; Molm, 2000). Social exchange theory (SET) analyses interactions among actors as exchanges of tangible and intangible resources (Blau, 1964; Emerson, 1972b, 1972a; Homans, 1958, 1961). Among the three basic forms, generalised exchange is characterised by collective structure and indirect reciprocation. It takes place in a social group with three or more members, and its participants unilaterally give resources to other members and do not receive direct reciprocation; however, as everyone gives resources to others, one eventually receives resources from someone in the group (Yamagishi & Cook, 1993). Hence, reciprocation takes place indirectly in generalised exchange. In contrast, negotiated and reciprocal exchange occur in dyadic relationships of two actors, who directly exchange resources based on negotiated terms (negotiated exchange) or act contingently upon the exchange partner's behaviours (reciprocal exchange). Generalised exchange was originally found in primitive societies by anthropologists such as Malinowski (1922) and Lévi-Strauss (1949) and was recognised by early social exchange theorists such as Blau (1964), Ekeh (1974) and Emerson (1976). In particular, Blau points out its relevance to large organisations, stating, "[l]ong chains of social transactions occur in complex organizations, in which the work of some members contributes to the performance of others, and which typically do not involve reciprocal exchanges" (p. 260). In fact, evidence suggests generalised exchange takes place in and around organisations (e.g. Gal, Jensen & Lyytinen, 2014; Shibayama, Walsh & Baba, 2012; Westphal, Park, McDonald & Hayward, 2012) and in various aspects of modern society, from neighbourhood watches to open-source software development (Molm, Collett & Schaefer, 2007).

However, social exchange research in the OB literature has largely focused on reciprocal exchange in dyadic relationships and has not paid much attention to the other forms of exchange (Cropanzano & Mitchell, 2005; Flynn, 2005). Indeed, SET has become one of the most widely used theories in the OB literature (Colquitt, Baer, Long & Halvorsen-Ganepola, 2014; Colquitt & Zapata-Phelan, 2007), and the application of SET in the OB literature spans a wide range of topics, such as employee–organisation relationships (Coyle-Shapiro & Shore, 2007; Eisenberger, Huntington, Hutchison & Sowa, 1986; Rousseau, 1989), leader–member relationships (Graen & Scandura, 1987; Liden & Graen, 1980; Liden, Sparrowe & Wayne, 1997) and team–member relationships (Bishop, Scott & Burroughs, 2000; Seers, 1989; Seers, Petty & Cashman, 1995)[1]. However, these studies largely share two key assumptions (Cropanzano & Mitchell, 2005; Flynn, 2005). First, exchanges of resources occur between an individual and an exchange partner, which can be either an individual or a collective. This focus on a dyadic conceptualisation of social exchange relationships is particularly evident in the employee–organisation and team–member exchange literature. The former has largely treated "organisations" as an entity with which individuals engage in social exchange, while individuals are likely to develop their understanding of an organisation through interactions with multiple individuals, such as supervisors and HR staff (Conway & Briner, 2005).

[1] Although SET has been applied to inter-group and inter-firm relationships, such applications are out of the scope of this thesis.

Similarly, team–member exchange literature has treated team members as a collective, whereas a team consists of multiple individuals. In short, these studies abstract potentially complex flows of resources between multiple individuals into a dyadic exchange of resources. Second, social exchange scholars have largely assumed that the exchange of resources is regulated by a universal norm of reciprocity, which leads one to feel obliged to reciprocate when he/she receives something from an exchange partner (Gouldner, 1960). Although there are other potential regulatory mechanisms of social exchange, OB scholars have paid little attention to them (Cropanzano & Mitchell, 2005). These assumptions have led scholars to focus on the quality of dyadic relationships as a key antecedent of individual attitudes and behaviours in the literature (Colquitt et al., 2014). High-quality relationships typically develop through accumulation of successful episodes of social exchange, which provides an expectation that the partner will reciprocate (Cropanzano & Mitchell, 2005). This allows one to engage in behaviours that benefit others without explicit negotiation, by expecting that the beneficiary will reciprocate.

The concept of generalised exchange allows researchers to move beyond these assumptions (Flynn, 2005). In generalised exchange, resources flow flexibly from one person to another in a social group, rather than going back and forth between two individuals; hence, the flows of resources are not bound by dyadic relationships or the networks of dyadic relationships. Individuals do not balance the give and take between a given pair of individuals and transfer resources to people in a social group, regardless of who the person is (Levine & Prietula, 2012). Hence, whereas transfer of resources in a reciprocal exchange depends on interpersonal relationships, generalised exchange can facilitate the exchange of resources to unknown individuals, as long as the person is in the same social group. This suggests that the concept of generalised exchange allows researchers to investigate organisational phenomena that are not addressed by existing approaches to social exchange research in the OB literature.

Existing studies have shown that generalised exchange has a number of positive implications for organisations. Theorists have considered generalised exchange as an essential ingredient of organisational social capital (Adler & Kwon, 2002; Baker & Dutton, 2007; Cross & Parker, 2004; Evans & Davis, 2005), which is defined as "the goodwill available to individuals or groups" and whose effects "flow from the information, influence and solidarity it makes available to the actor" (Adler & Kwon, 2002) (p. 25). Generalised exchange is considered to resolve the problems of collective action (Putnam, 1993; Yamagishi & Cook, 1993) and transforms individuals from egocentric agents who focus on self-interest into members of a social group with shared interests, identity and commitment to the common goals (Adler & Kwon, 2002). More specifically, researchers suggest that generalised exchange has two key implications to organisations: first, generalised exchange facilitates flexible collaboration among employees; second, it works as a psychological bonding mechanism that connects individuals with the organisation.

Collaboration among individuals is essential for organisations to function effectively. The collective structure and implicit process of generalised exchange make it advantageous to other forms of social exchange because it does not require negotiation or interpersonal relationships between individuals (Levine & Prietula, 2012). Negotiated exchange enables collaboration through negotiation: one (A) promises to do something for another employee (B), B promises to do something in return for A and both consider what they get from their partner to be beneficial for them. This is a rather restricted mode of collaboration, as both individuals need to have something that is valuable to the potential partner to establish the agreement. In addition, even if the individual has resources that are valuable for another person, it often takes time to negotiate agreeable terms. Reciprocal exchange allows more flexible collaboration, as Blau (1964) pointed out. An individual who seeks resources that another person possesses does not need to make a concrete offer to the person. However, the person's willingness to give resources will depend on the quality of their relationship. High-quality interpersonal relationships typically take time to develop (Cropanzano & Mitchell, 2005), and individuals tend to develop such relationships with those who work closely with them. As a result, resources tend to be exchanged within organisational boundaries (e.g. teams, functional units and geographical locations), unless individuals have boundary-spanning ties (Cross & Cummings, 2004; Hansen, 2002; Szulanski, 1996; Tsai, 2001). In generalised exchange, individuals unilaterally give resources for other individuals; hence, one does not need to either make sure the recipient can offer something valuable to him/her and to negotiate the terms of exchange, or to have a good interpersonal relationship with him/her to ensure he/she will reciprocate in the future. This benefit of generalised exchange is well-illustrated by a study on IDEO, a world-leading design firm, by Hargadon and Sutton (1997). IDEO's designers are famous for their attitude to generously sharing their knowledge and expertise with other members of the organisation, which enables IDEO to fully utilise its members' diverse knowledge and expertise to provide creative solutions to its customers.

Second, through experiments, social psychologists have found that generalised exchange promotes psychological bonds between the participants and the group as a collective. Experimental studies suggest that reciprocal and generalised exchange leads to a stronger sense of trust in and identification and solidarity with exchange partners than negotiated exchange, while negotiated exchange leads to a sense of conflict among them (Inaba & Takahashi, 2012; Molm et al., 2007; Molm, Takahashi & Peterson, 2000). Willer, Flynn and Zak (2012) found consistent results from a field study of two Internet-based exchange platforms that facilitate negotiated and generalised exchange, respectively, among participants. In addition, the form of exchange has implications on the target of trust, identification and solidarity: individuals in reciprocal exchange develop them towards a particular individual, whereas those in generalised exchange develop them towards the social group (Molm et al., 2007). Organisational identification is considered a “root construct” in organisational behaviour research, and has been found to be associated with various positive organisational outcomes, such as citizenship behaviours, proactivity and lower turnover intention (see Ashforth, Harrison & Corley, 2008, for a review). Trust reduces the costs of intra-organisation transactions (Williamson, 1985; Williamson, 2000) and facilitates collaborative behaviours among organisation members (Kramer, 1999); hence, it is a fundamental ingredient for efficient operation of organisations. Therefore, as Ekeh (1974) elaborated in his conceptual analysis of generalised exchange, evidence indicates that generalised exchange creates psychological bonds between individuals and a collective, which support the functioning of organisations. Taken together, this evidence indicates the wide implications of generalised exchange for organisations and supports the notion that generalised exchange promotes organisational social capital.

Furthermore, the prevalence of online virtual collaboration among employees in contemporary organisations signify the relevance of generalised exchange to organisational management. Globalisation has led organisations, from large multinational companies to small born-globals (Knight, Cavusgil & Innovation, 2004), to disperse their activities across the globe, creating challenges and opportunities to learn from and adapt to the diverse world (Ghemawat, 2007; Govindarajan & Trimble, 2012). In order to cope with these changes, organisations are increasingly dependent upon global intellectual collaboration (Hinds, Liu & Lyon, 2011), promoting cross-functional, simultaneous flows of information and decision-making beyond national boarders, and are moving beyond a traditional bureaucratic structure (Benko & Anderson, 2013; Nahm, Vonderembse & Koufteros, 2003). Developments in information technologies have accelerated this shift by providing new ways to organise activities and manage knowledge. As Zammuto, Griffith, Majchrzak, Dougherty and Faraj (2007) put it, “[o]rganizing no longer needs to take place around hierarchy and the collection, storage, and distribution of information as was the case with ‘command and control’ bureaucracies in the past.” (P. 749). Organisations are increasingly introducing new technology platforms which emerged from rapid innovation on the Internet to speed up access to internal knowledge and expertise and reduce communication costs (McAfee, 2006; McKinsey & Company, 2013). These in-house online platforms (I call online platforms within an organisation “in-house” to differentiate them from Internet-based public platforms) provide virtual spaces that connect people who have not been previously connected and are expected to facilitate exchange of knowledge beyond organisational and geographical boundaries (Hwang, Singh & Argote, 2015). All in all, these changes make generalised exchange – which does not depend upon dyadic interpersonal relationships and creates psychological bonds among participants – relevant to modern organisations.

There is a clear gap between the current approaches based on the concept of reciprocal exchange and the nature of the emerging virtual form of interactions. The two key assumptions of current social exchange research, which I mentioned above, do not fit well with online, virtual collaboration beyond boundaries. First, it does not seem appropriate to abstract interactions on such in-house online platforms into dyadic relationships between individuals and a collective, because the latter would consist of diverse individuals who neither share a common role as members of a certain team (as is the case in team–memberteam–member exchange research) nor represent an organisation (as is the case in employee–organisation relationship literature). Second, online platforms are characterised by the prevalence of free-riders who acquire knowledge by witnessing others’ interactions on the platforms but do not contribute to the interactions by themselves (Nonnecke & Preece, 2000; Shachaf, 2009). As a result, individuals who have a strong orientation to follow the norm of reciprocity are less likely to share their knowledge on such platforms (Wasko & Faraj, 2005). In addition, the key purpose of such platforms is to facilitate interactions between those who do not know one another, and the participants of such platforms often help others whom they do not personally know (Hwang et al., 2015).

Hence, the current approaches that focus on dyadic, reciprocal exchange are not quite applicable or helpful in investigating the emerging virtual form of interactions in organisations. Instead, the characteristics of virtual interactions make generalised exchange an important and useful alternative conceptual framework in analysing the emerging virtual communication in organisations because it assumes resource flows between multiple individuals who do not necessarily have interpersonal relationships and do not assume direct reciprocation. In fact, recent studies report evidence that generalised exchange facilitates interactions between individuals on public, in-house and public online platforms (Baker & Bulkley, 2014; Faraj, Wasko & Johnson, 2008; Wu & Korfiatis, 2013).

1-2. Intended contributions

The central focus of this thesis is on individual characteristics that encourage individuals to engage in generalised exchange. Although studies on generalised exchange in various social science disciplines have investigated the mechanisms that sustain generalised exchange (Deckop, Cirka & Andersson, 2003; Nowak & Roch, 2007; Nowak & Sigmund, 1998; Takahashi, 2000; Yamagishi, Jin & Kiyonari, 1999), little is known about the impact of individual differences (Baker & Bulkley, 2014). In addition, some researchers have discussed organisational practices that might promote generalised exchange between employees and thus organisational social capital (e.g. Baker & Dutton, 2007; Evans & Davis, 2005); however, their discussions remain at the organisation level and lack detailed analyses of individual-level mechanisms of engagement in generalised exchange. On the other hand, social exchange research in the OB literature has revealed that there are significant differences in individuals' beliefs on following the norm of reciprocity and that such differences have profound effects on individuals' behaviours and attitudes (e.g. Coyle-Shapiro & Neuman, 2004; Eisenberger, Armeli, Rexwinkel, Lynch & Rhoades, 2001; Eisenberger, Cotterell & Marvel, 1987; Ladd & Henry, 2000; Witt, Kacmar & Andrews, 2001), yet such research has paid little attention to generalised exchange (Flynn, 2005). By integrating these two streams of research, I aim to to answer a key question in understanding individual engagement in generalised exchange: why do some people and not others engage in generalised exchange?

In order to answer this question, I develop a theoretical framework on individuals' engagement in generalised exchange by drawing on prior studies on generalised exchange from various social science disciplines and social exchange research in the OB literature. I propose the rule of collective reciprocity as a regulatory mechanism of generalised exchange. Then, I introduce the concept of generalised exchange orientation (GEO) – beliefs that favour the rule in interactions with others in the workplace – as an individual characteristic that motivates individuals towards generalised exchange. Finally, I discuss the antecedents, consequences and boundary conditions of GEO.

Based on the conceptual discussion, I conduct three empirical studies. First, I develop and validate the scales to measure GEO and orientations to other forms of social exchange. In this study, I examine the distinctness of GEO from orientations to other forms of social exchange and establish valid and reliable instruments for the following studies. Second, I investigate how the organisational context – such as task interdependence, shared goals and depersonalised trust – affects changes in GEO. Prior studies have considered individuals' orientations to social exchange – such as exchange ideology (Eisenberger et al., 1986), creditor ideology and reciprocity wariness (Eisenberger et al., 1987) – as stable characteristics while hardly examining temporal changes in such orientations. However, drawing on studies that revealed a significant impact of contextual factors on changes in individual beliefs and other stable characteristics (e.g. Boyce, Wood, Daly & Sedikides, 2015; Burkhardt, 1994; Desai, Chugh & Brief, 2014; Li, Fay, Frese, Harms & Gao, 2014; Robinson, Kraatz & Rousseau, 1994), I propose and test the impact of prolonged exposure to a particular social environment on changes in individual orientations. Third, I analyse the impact of GEO on knowledge-sharing behaviours on an in-house online platform as well as the role of organisational identification as a moderator and contrast the effect of GEO with that of individuals' orientation to reciprocal exchange (REO).

Among the various potential outcomes of individuals' engagement in generalised exchange, I particularly focus on online knowledge-sharing behaviours for two reasons. First, behavioural outcomes have more direct implications on the functioning of organisations compared with psychological outcomes, such as trust, identification and the sense of solidarity, which prior studies have reported as outcomes of generalised exchange (Inaba & Takahashi, 2012; Molm et al., 2007; Willer, Flynn & Zak, 2012). Second, there is an urgent need to advance our understanding of individuals' behaviours on online platforms. While organisations actively introduce such platforms, their initiatives are not always successful (Hislop, 2002), and the effort to investigate individuals' behaviours is just emerging (Zammuto et al., 2007). By contrasting the impacts of GEO and REO, I aim to highlight the unique role of generalised exchange in promoting interactions in virtual spaces. In addition, by testing the impact of organisational identification as a moderator, I aim to investigate the boundaries of generalised exchange. Although scholars have considered generalised exchange to take place in a social group (e.g. Flynn, 2005; Molm, 2000; Yamagishi & Cook, 1993), prior studies have hardly examined what defines its boundaries. As individuals in an organisation are typically exposed to multiple social groups (e.g. teams, organisational units, entire organisations and occupational groups), it is important to investigate the factor that shapes the boundaries of generalised exchange. Drawing on prior research (e.g. Westphal et al., 2012; Willer et al., 2012), I propose that individuals' social identity shapes the boundaries.

This thesis will contribute to the literature in four ways. First, it unpacks the micro-foundations of the emergence of generalised exchange in organisations by showing how an individual characteristic (i.e. GEO) and a boundary condition (i.e. organisational identification) shape individuals' engagement in generalised exchange and how the organisational context affects changes in the individual characteristic. To my best knowledge, this is the first study to empirically investigate the interplay of organisational context and individual characteristics in promoting generalised exchange. In addition, by analysing the impact of organisational context on changes in GEO, this thesis also contributes to an understanding of the impact of organisational context on the evolution of generalised exchange relationships in organisations. In addition, by investigating the source of the boundaries of generalised exchange, the thesis provides insight into potential obstacles to the emergence of organisation-wide generalised exchange. As generalised exchange is a key ingredient of organisational social capital (Adler & Kwon, 2002; Baker & Dutton, 2007; Evans & Davis, 2005), these contributions have wide and significant implications for theory and practice.

Second, this thesis expands the literature on individual differences in social exchange, thus responding to a long-standing call to move beyond the current assumptions that have led social exchange research in the OB literature to a narrow concentration on reciprocal exchange (Cropanzano & Mitchell, 2005; Flynn, 2005). By introducing the concept of individual orientations towards the three basic forms of social exchange and providing instruments with which to measure the orientations, this thesis opens a new frontier for the literature, which has been solely focused on individual differences in reciprocal exchange. The conceptual discussion and the instruments provide a foundation for investigations into the impact of individual differences on the development of different forms of social exchange relationships and resulting outcomes, such as individual attitudes and behaviours.

Third, I introduce a new approach to studying co-worker social exchange relationships by focusing on virtual interactions beyond an organisation's internal boundaries. As mentioned above, studies of co-worker social exchange relationships have largely concentrated on team settings but have hardly examined individuals' interactions beyond teams. Studies have reduced potentially complex flows of resources between multiple individuals into dyadic, reciprocal exchanges. This thesis goes beyond these limitations and demonstrates the utility of SET in the new, emerging form of co-worker interactions beyond team boundaries.

Fourth, the thesis also contributes to the literature on online communities. By investigating the impact of GEO and its boundary conditions, it advances the research of individual antecedents of behaviours on online communities (e.g. Bagozzi & Dholakia, 2006; Ma & Agarwal, 2007; Ren, Kraut & Kiesler, 2007; von Hippel & von Krogh, 2003; Wasko & Faraj, 2005). In addition, investigating the impact of social identity of individuals further contributes to the emerging area of study regarding the impact of an organisation's social structure on interactions on online platforms (cf. Hwang et al., 2015).

In addition to theoretical contributions, I also aim to make contributions to practitioners in organisations who aim to facilitate flexible flow of knowledge and expertise beyond boundaries. In fact, evidence suggests that many organisations are struggling to encourage participation in knowledge exchange on their in-house online platforms, despite their expectations for the new technology initiatives (Hislop, 2002).

1-3. Personal motivation behind this thesis

The origin of my interest in generalised exchange goes back to 2011, when I worked as a consultant in human resource management and organisational development in Japan and China. I had worked with a number of Japanese firms for more than a decade and become familiarised with how Japanese firms operate. Then, in 2011, I expanded my consulting engagement beyond Japan and started engaging with Chinese subsidiaries of a Japanese manufacturer. As I conducted interviews with middle managers and organised workshops to discuss the subsidiaries' challenges, I gradually realised the serious differences between what I observed in many Japanese firms and the ways in which the subsidiaries' managers worked. In Japanese firms, managers are generally collaborative, and when someone in a different unit asks for help, they tend to try to understand the background of the request and to do something for him or her if the purpose is reasonable. Of course, they have their own roles and priorities, but the basic tone of interactions is collaborative in nature. On the other hand, while local managers of the Chinese subsidiaries behaved friendly with one another, they tended to focus on their own interests and showed limited attention to the circumstances of other units. Along with differences in culture, language and work practices between Japan and China, this lack of mutual interests and collaborative attitudes made the consulting project particularly challenging.

Since then, I started thinking about why people help others (or do not help others) in organisations. Once I started looking at Japanese and other Chinese organisations with this question, it became clear that there was clear variation in attitudes, even within a company. Some were happy to help others, regardless of who needed the help. Some were helpful to those in their immediate team or those with whom they had worked before but did not pay attention to others beyond the team. Some tried to avoid involvement in others' troubles unless such problems were related to their own interests. I generally think it is beneficial to help others regardless of who they are because kindness will come back at some day in the future, and it does not matter from whom it will come back. However, I also recognise people do not always think this way.

This interest has guided me throughout my PhD programme. Although my ultimate aim is to understand multilevel – societal, organisational and individual – mechanisms behind such differences, this thesis focuses on the individual level of analysis because it will lay the foundation for further investigations. In addition, although my observations imply that generalised exchange is also relevant to co-worker interactions in real workplaces, I have used interactions on an in-house online platform as the stage of empirical examination. This is because available evidence suggests that generalised exchange is particularly relevant for interactions on online platforms, which are important but not well-investigated organisational phenomena.

1-4. Structure of this thesis

The remainder of this thesis consists of six chapters. In Chapter 2, I will review relevant literature and develop theory to underpin this thesis. This section makes three important theoretical contributions to this thesis: first, it integrates the existing discussion about the mechanisms of generalised exchange and proposes the rule of collective reciprocity as its regulating mechanism; second, based on the discussion, it introduces the concept of GEO and discusses its differences from existing constructs of individual orientations to social exchange; third, it proposes antecedents, consequences and boundary conditions of GEO. The aim of this chapter is to provide an overall, holistic picture about the nature of generalised exchange and GEO.

Based on the discussion, Chapter 3 will discuss the research model that I will empirically investigate in the thesis, and introduce the research design of the three empirical studies that will be reported in Chapters 4, 5 and 6. I will also discuss my epistemological approach in conducting this thesis as well as measures that I have implemented to ensure the validity, reliability and generalisability of this thesis.

In Chapter 4, I will develop and validate the Social Exchange Orientations (SEOs) scale, which measure individual orientations towards negotiated, reciprocal and generalised exchange. This includes five stages of studies, through which I develop and refine scale items, examine the factor structure, evaluate the nomological validity of the new scales, analyse the measurement invariance of the new scales between two societal contexts (the US and Japan) and test their incremental validity. The section utilises responses from more than 1,200 participants in three societies (the UK, the US and Japan). This chapter sets the foundation for the empirical investigations in this thesis, as reliable and valid measurement instruments are fundamental to any quantitative research.

Using the new measures, Chapter 5 details a preliminary analysis of the contextual antecedents of GEO based on a panel longitudinal dataset collected from a large Human resource management (HRM) professional service firm in Japan. I call this investigation preliminary because the data only include two measurements, which is less than the recommended threshold of three measurements (Chan, 1998; Vandenberg & Lance, 2000). While I recognise the limitations and potential problems of longitudinal analysis based on two measurements, I aim to examine the potential impact of organisational context on the development of GEO over time in this chapter.

In Chapter 6, I investigate the impact of GEO and other two facets of SEOs on knowledge-sharing behaviours on an in-house online platform and their boundary conditions. I analyse the behaviours of employees from another professional service firm in Japan on its in-house online knowledge-exchange platform over six months. This chapter adopts a novel approach of treating each transaction (i.e. knowledge-sharing behaviour from one participant to another) separately, instead of using a survey measure that captures the overall behaviours of individuals. This approach is suitable for the purpose of this study to disentangle the complex interactions among multiple individuals in different parts of an organisation.

Finally, Chapter 7 reflects on the overall findings of the thesis. I will discuss the contributions and theoretical and practical implications of the thesis, acknowledge its limitations and propose directions for future research.

Chapter 2. Theory Development

This chapter sets the theoretical foundation of the thesis, drawing on research about social exchange from various social science disciplines. First, I review discussions on three forms of social exchange and clarify the key characteristics (structure, process, regulating mechanism and risks) that distinguish generalised exchange from the other two forms of social exchange, namely, negotiated and reciprocal exchange. Second, I introduce the concept of generalised exchange orientation (GEO) as an individual characteristic that shapes engagement in generalised exchange and discuss its differences from existing constructs that capture the individual differences in social exchange relationships. Third, I will propose the consequences and boundary conditions of GEO, particularly focusing on individuals' discretionary behaviours. Finally, I will discuss contextual factors that affect the development of GEO over time as well as the influence of individual dispositions as a moderator. These discussions provide a conceptual basis for the empirical investigations in the following chapters.

2-1. Three forms of social exchange: negotiated, reciprocal and generalised

SET (Blau, 1964; Emerson, 1972b, 1972a; Homans, 1958, 1961) analyses human behaviours as exchanges of resources among actors. This theory posits that individuals exchange tangible and intangible resources with one another, such as help, recognition, approval and rewards, and that they seek to balance the value and quality of the resources they exchange. SET assumes that human actors are instrumental and that their relationships are driven by the benefits and costs of interactions with other individuals. Individuals enters exchange relationships because they expect the benefits from the relationships to overweigh the related costs and sustain the relationships when perceived as beneficial. Early theory-development efforts were largely conducted by sociologists (Blau, 1964; Emerson, 1972b, 1972a; Homans, 1958, 1961), although their work has roots in anthropology (e.g. Lévi-Strauss, 1949; Malinowski, 1922). Scholars in other disciplines such as psychology (e.g. Thibaut & Kelley, 1959) also investigated the role of exchange in human interactions. Since then, SET has been widely applied in organisational research and has become one of the most influential theories in the literature (Colquitt, Baer, Long & Halvorsen-Ganepola, 2014).

Discussion on different forms of social exchange dates back to the early period of social exchange research. Homans (1958, 1961) emphasised dyadic exchange – in which two actors directly exchange resources – as the central focus of his analysis on social interactions, and he recognised that exchange can be explicit (the two actors negotiate the terms) or implicit (they do not). Blau (1964) called these explicit and implicit exchange forms economic and social exchange, respectively, and pointed out that they have different processes and outcomes. Although his analysis mostly focused on these dyadic exchange forms, he also recognised a collective form of social exchange that involves more than two actors. He pointed out that "[l]ong chains of social transactions occur in complex organizations .... which typically do not involve reciprocal exchanges" (P. 260). Ekeh (1974) discussed the differences between dyadic[2] and collective forms of exchange, which he called restricted and generalised exchange, respectively, based on the anthropological works of Lévi-Strauss (1949) and Malinowski (1922). Emerson (1976) also recognised the generalised form of exchange, which he interpreted it as networks of multiple dyadic relationships.

Since then, different forms of social exchange and their characteristics have been investigated in various social science disciplines, such as sociology (Shibayama et al., 2012;

[2] Ekeh's discussion on restricted exchange focuses on explicit dyadic exchange (which Blau called economic exchange); he did not pay attention to implicit dyadic exchange.

Takahashi, 2000), social psychology (Molm, 2000, 2003; Yamagishi & Cook, 1993), economics (Kolm & Ythier, 2006), evolutionary biology (Nowak & Roch, 2007; Nowak & Sigmund, 1998) and OB (Baker & Bulkley, 2014; Faraj & Johnson, 2011; Flynn, 2005; Willer et al., 2012). Although the terminology varies among researchers, they largely agree that three basic forms of social exchange exist: negotiated, reciprocal and generalised exchange (Molm, 2000). I will follow the terminology of Molm (2000) and Flynn (2005) – negotiated, reciprocal and generalised exchange – in this thesis. Table 2-1 summarizes examples of different terminologies used by prior researchers and their correspondence to the terminology that I use in this dissertation.

Table 2-1. Examples of different terminologies used by prior researchers

Researcher	Negotiated exchange	Reciprocal exchange	Generalised exchange
Blau (1964)	Economic exchange	Social exchange (direct)	Social exchange (indirect)
Ekeh (1974)	Restricted exchange	-	Generalised exchange
Emerson (1976, 1981)	Two-way exchange (Negotiated)	Two-way exchange (Reciprocal)	Generalised exchange
Nowak & Sigmund (1998)	-	Direct reciprocity	Indirect reciprocity
Molm (2000, 2003)	Negotiated exchange	Reciprocal exchange	Generalised exchange
Flynn (2000)	Negotiated exchange	Reciprocal exchange	Generalised exchange
Kolm & Ythier (2006)	Market exchange	Basic reciprocity	Generalised reciprocity
Faraj & Johnson (2011)	-	Direct reciprocity	Indirect reciprocity
Westphal et al. (2014)	-	Direct reciprocity	Chain-generalised reciprocity Fairness-based selective giving

The three forms of social exchange are characterised by their structure, process, regulatory mechanism and risk. Structure refers to whether the social exchange involves two actors (dyadic structure) or three of more actors (collective structure), and process refers to whether it involves explicit negotiation (explicit process) or does not (implicit process) (Flynn, 2005; Molm, 2000, 2003). Regulatory mechanism refers to the rules and norms that guide the behaviours of participants in each type of social exchange. As social exchange is fundamentally a joint effort by multiple individuals, it therefore requires a certain mechanism to regulate the behaviour of individuals (Cropanzano & Mitchell, 2005). Such mechanisms give a normative definition of the situation to the participants and guide their exchange behaviours (Emerson, 1976). While the universal norm of reciprocity (Gouldner, 1960) is widely considered to be a key regulating mechanism of social exchange, it only applies to reciprocal exchange, and participants in other forms of exchange follow different rules (Cropanzano & Mitchell, 2005). Regarding risk, prior literature suggests that individuals are exposed to different degree of risk of defection by their exchange partner(s) (Inaba & Takahashi, 2012; Molm, 2003, 2010; Molm et al., 2007; Molm, Takahashi & Peterson, 2000). As discussed above, social exchange research assumes that individuals are instrumental and that they engage in an exchange relationship because doing so benefits them. Therefore, differences in the risk of free-riding between the three forms have implications on individuals' engagement in different forms of exchange. Table 2-2 summarises the key characteristics of three forms of social exchange, on which I will further elaborate below.

Table 2-2. Characteristics of three forms of social exchange

Exchange forms	Process	Structure	Regulatory mechanism	Risks
Negotiated exchange	Explicit	Dyadic	Negotiated rule	Low
Reciprocal exchange	Implicit	Dyadic	Norm of reciprocity	Moderate
Generalised exchange	Implicit	Collective	Rule of collective reciprocity	High

Negotiated exchange is characterised by a dyadic structure and an explicit process. In this form of exchange, two individuals explicitly negotiate the terms of exchange in advance and transfer benefits accordingly. The participants negotiate and agree upon the terms of exchange simultaneously in a quid pro quo manner, although transfers of resources do not necessarily take place simultaneously (Flynn, 2005). Then, these negotiated terms regulate the individuals' behaviours. The existence of explicit agreement about the terms of exchange allows the individuals to monitor and enforce the transfer of resources and thus helps them to secure individual interests in exchange relationships (Molm, 2000). Hence, participants in negotiated exchange are exposed to relatively low risk of free-riding.

This form is largely equivalent to "economic exchange" in Blau's (1964) terminology, which he distinguished from "social exchange", which is largely equivalent to reciprocal exchange in this study. Although Blau pointed out that such explicit negotiation typically takes place between individuals who are strangers to each other, this type of exchange can also take place among people with long-lasting social relationships (Flynn, 2005). Indeed, negotiation is an inseparable part of organisational life (Neale & Bazerman, 1992) and takes place when one wants to achieve goals which require the cooperation of others (Thompson, Wang & Gunia, 2010). For example, supervisors negotiate performance goals and contingent rewards with subordinates (Bass, 1991); project managers negotiate resource allocations among project teams (Ching, Holsapple & Whinston, 1992); and individuals negotiate task allocation, scheduling arrangements and the way they conduct day-to-day tasks (Boden, 1994). Studies by Emerson, Cook and their colleagues (Cook and Emerson, 1978; Cool et al. 1983; Cook and Stotle, 1977) have shown how the nature of social relationships (e.g. mutual dependence and relative power) affects the outcome of negotiations through experimental studies. More recently, researchers are increasingly analysing workplace negotiations in light of SET (Campagna, Mislin, Kong & Bottom, 2016; Kong, Dirks & Ferrin, 2014; Olekalns & Smith, 2009).

Reciprocal exchange also takes place in a dyadic relationship. However, in this form of exchange, the two actors do not have explicit negotiations with each other. Instead, they act contingently upon the partners' behaviours: one gives resources to another without agreeing upon specific conditions for reciprocation, but this action triggers a feeling of unspecified obligation in the recipient to give something back to the giver (Blau, 1964). This implicit process enables more flexible and efficient collaboration among individuals than negotiated exchange because reaching a consensus about the terms of exchange through negotiation can take time, and one cannot always specify what he/she wants in exchange for the benefits he/she provides to an exchange partner. In reciprocal exchange, the participants can decide what and when they reciprocate, which gives larger space for them to match what they receive with what they give in exchange relationships. However, why do individuals reciprocate despite a lack of formal agreement to do so? Social exchange scholars have widely considered the universal norm of reciprocity – a cultural mandate that one *should* reciprocate benefits he/she receives and those who do not follow are *punished* (Gouldner, 1960) – to be the mechanism that maintains reciprocal exchange relationships. The norm makes individuals feel obligated to reciprocate when they receive something, and this sense of obligation contributes to the maintenance of exchange relationships (cf. Eisenberger et al., 2001).

These characteristics of reciprocal exchange expose participants to greater risks because there is no assurance that every individual will follow the norm of reciprocity in all circumstances. When one gives resources to an exchange partner and expects the partner to reciprocate, the recipient might violate the norm of reciprocity, leaving one without receiving reciprocation. In fact, evidence suggests that considerable individual differences exist in the propensity to follow the rule of reciprocity (Cropanzano & Mitchell, 2005) and that individuals are less likely to follow the norm of reciprocity in organisational settings (Belmi & Pfeffer, 2015). Hence, there is a considerable risk of non-reciprocation when one transfers resources to other individuals in reciprocal exchange. Then, how can one be sure that a partner will reciprocate and thus that the former will not be exploited? The dyadic structure of reciprocal exchange mitigates this risk to some extent. Because of the serial interdependence of actions – one transfers resources after receiving resources from the partner – in reciprocal exchange, one can relatively easily realise lack of reciprocation and withdraw from exchange relationships (Molm et al., 2007). As a result, one typically starts a reciprocal exchange relationship from transferring resources with small value and increasing the commitment as the partner proves his/her trustworthiness by actually reciprocating for the resources. This gradual process leads the relationship to grow into "trusting, loyal and mutual commitments" over time (Cropanzano & Mitchell, 2005, p. 875), which enables the participants to transfer resources with significant value.

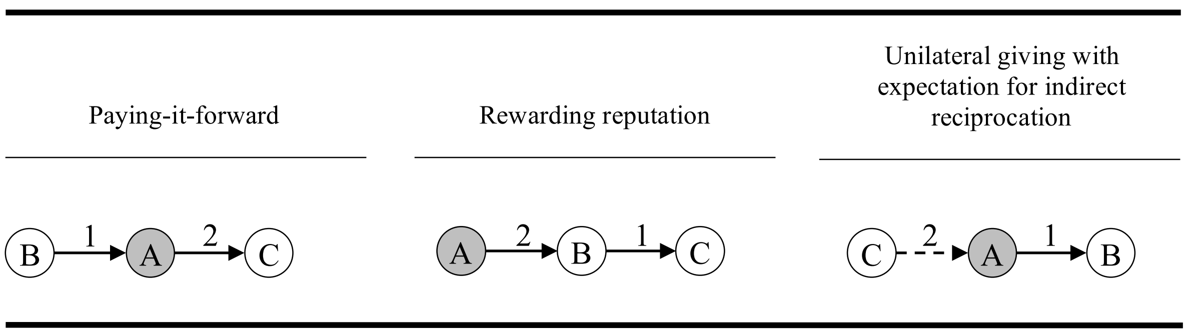
The concept of reciprocal exchange is applied to various types of relationships in organisations, such as employee–organisation (Coyle-Shapiro & Shore, 2007; Eisenberger et al., 1986; Rousseau, 1989), leader–member (Dulebohn, Bommer, Liden, Brouer & Ferris, 2012; Graen & Scandura, 1987; Liden et al., 1997) and co-worker relationships (Banks, Batchelor, Seers, O'Boyle, Pollack & Gower, 2014; Bishop et al., 2000; Seers, 1989). These studies consistently show that high-quality dyadic relationships lead individuals to demonstrate attitudes and behaviours that benefit the exchange partner, such as high task performance, organisational citizenship behaviours (OCBs), strong commitment and weak turnover intention (Cropanzano & Mitchell, 2005).

Generalised exchange is characterised by its collective structure and implicit process. It takes place in a social group with three or more members, who unilaterally give resources to other members of the group without receiving direct reciprocation from the recipients. However, because everyone does the same, reciprocation eventually takes place indirectly (Yamagishi & Cook, 1993). This can take the form of either chain-generalised exchange, in which the resources flow in accordance with a fixed route among individuals, or pure-generalised exchange, in which the resources flow flexibly without such fixed routes. Chain-generalised exchange was observed in various primitive societies by Malinowski (1922) and following anthropologists, and has been studied in experimental studies by social psychologists (e.g. Molm et al., 2000; Yamagishi & Cook, 1993). However, it is hardly observed in modern societies (Inaba & Takahashi, 2012). Pure-generalised exchange has been reported in various domains of modern society, such as neighbourhood watches, open software development (Molm et al., 2007), organ donation networks (Healy & Krawiec, 2012), interactions on Internet-based online communities (Faraj & Johnson, 2011; Wu & Korfiatis, 2013) and collaboration among science researchers (Shibayama, Walsh & Baba, 2012). Hence, I will focus on pure-generalised exchange in this study and use "generalised exchange" to indicate pure generalised exchange.

Among the varieties of relationships within an organisation, the concept of generalised exchange is particularly relevant for horizontal co-worker relationships. Vertical relationships within an organisation, such as employee–organisation and leader–member relationships, typically involve only two actors (although there are critical reflections about treating organisations as a single actor in employee–organisation relationships; for example, see Conway and Briner (2005)); therefore, the exchange between them takes the form of either negotiated or reciprocal exchange. Whereas a few recent studies investigate social exchange relationships that involve more than two actors, such as ones having multiple leaders (e.g. Vidyarthi, Erdogan, Anand, Liden & Chaudhry, 2014) or employers (e.g. Buch, Kuvaas & Dysvik, 2010), the relationships can be understood as combinations of multiple dyadic relationships. However, horizontal relationships among co-workers involve a much larger number of individuals, who simultaneously exchange resources with one another. As I noted in Chapter 1, the team–member exchange (TMX) literature (Banks et al., 2014; Seers, 1989; Seers et al., 1995) and team support literature (e.g. Bishop et al., 2000; Bishop, Scott, Goldsby & Cropanzano, 2005; Halbesleben & Wheeler, 2015) analyse co-worker relationships as dyadic, reciprocal exchanges and have shown that the quality of relationships among co-workers as a whole predicts individuals' team-related attitudes and behaviours. The introduction of the concept of generalised exchange has the potential to further advance our understanding of horizontal co-worker relationships in two ways. First, it allows for more fine-grained analysis of potentially complex interactions among multiple individuals that might include not only direct reciprocation but also indirect reciprocation. Prior approaches to co-worker relationships have abstracted such potentially complex relationships into a single dyadic path. Second, the concept of generalised exchange can be applied to much larger organisations, in which members do not share a common role as members of a team, which is a fundamental assumption in TMX and team support literature. This has contemporary importance because, as discussed in Chapter 1, organisations are increasingly interested in facilitating collaboration among employees across an entire organisation by bringing technologies that facilitate communication beyond organisational and geographical boundaries (McAfee, 2006; McKinsey & Company, 2013).

As generalised exchange is also implicit form of exchange, it requires a certain regulating mechanism to be shared among participants. However, the universal norm of reciprocity cannot regulate generalised exchange, as the participants do not reciprocate to the person from whom they receive a resource. Instead, three distinct rules for generalised exchange have been proposed in the literature: paying-it-forward, rewarding reputation and unilateral giving with the expectation of indirect reciprocation. Figure 2-1 illustrates the three rules.

First, paying-it-forward refers to an individual (“A”) receiving resources from someone (“B”) in a social group and then giving resources not to the original giver but to another person (“C”) (Deckop et al., 2003; Nowak & Roch, 2007). Second, rewarding reputation indicates that an individual (A) gives resources to another person (B) who gave resources to someone (C) in the social group (Takahashi, 2000). Third, unilateral giving suggests that an individual (A) engages in unilateral giving to another member (B) of the social group while expecting that he or she will receive indirect reciprocation from someone (C) in the group (Yamagishi et al., 1999). Increasing empirical evidence exists to support the three proposed rules (Baker & Bulkley, 2014; Westphal et al., 2012; Wu & Korfiatis, 2013; Yamagishi & Mifune, 2008; Yamagishi, Mifune, Liu & Pauling, 2008).



The circles and arrows represent individuals and transfers of resources between them. The numbers represent the order of the resource transfer, and the dashed arrow means that the transfer is not realised.

Figure 2-1. Three proposed mechanisms of generalised exchange

Although these rules appear distinct, a common principle underlies the three rules: individuals balance the debt and credit at the collective level. In paying-it-forward, one (A) balances what he/she receives from other members (B+C) with what he/she gives to them (B+C). More generally, a person balances “what they (other members of the group) do for me” with “what I do for them”. In rewarding reputation, A balances B's contribution to the other members (A+C) with what B receives from the other members (A+C). In this case, one treats the members of a social group, including him/herself, as “us” and balances what “he/she does for us” with “what we do for him/her”. Therefore, although the unit of debt-credit accounting is shifted from the individual towards the collective, participants in generalised exchange still follow the fundamental assumption of SET that individuals balance debt and credit in exchange relationships following rational calculation (Blau, 1964; Emerson, 1972b, 1972a; Homans, 1958, 1961). In addition, this provides a more parsimonious explanation of how individuals behave in generalised exchange than the three mechanisms. Hereinafter, I call this rule *the rule of collective reciprocity* to distinguish it from the norm of reciprocity.

While not conclusive, evidence suggests that the rule of collective reciprocity might be also universal and have normative characteristics. Theorists of generalised exchange commonly argue that it is an essential basis of cooperation in human society and that the tendency to participate in this form of exchange has developed through the evolution process of human beings (Nowak & Sigmund, 1998; Takahashi, 2000; Yamagishi et al., 1999). Alexander (1987), an evolutionary biologist, even argued that generalised exchange is the source of the moral systems within human society. Indeed, there are proverbs in English that imply the rule of collective reciprocity, such as “Charity is a good investment” and “He who gives to another bestows himself”, and similar proverbs are found in many parts of the world (Takahashi, 2000). In addition, similar phrases are also found in religious teachings, such as “Give, and it will be given to you” in Christianity (Luke 6.38 English Standard Version). This might suggest that the rule of collective reciprocity is universally embedded into the social norms of human society. While still scarce, empirical evidence supports that these mechanisms are found in multiple societies, such as the US (Baker & Bulkley, 2014; Westphal et al., 2012), New Zealand and Japan (Yamagishi et al., 2008). In terms of normative nature, Westphal et al. (2012) report the sense of obligation among the chief executive officers (CEOs) of large US firms who demonstrated paying-it-forward and rewarding reputation behaviours. For example, they said, "Someone had recently helped me in that situation, so I *should* help him" and "Like I said, I knew he had put in a good word for other CEOs a couple times in the past. I thought someone *should* put in a good word for him now" (P. 221, emphases added) as reasons for offering help to another CEO. These comments suggest that these CEOs engaged in paying-it-forward behaviours because they think it is right thing to do based on certain moral standards. Although this evidence implies the normative and universal nature of the rule of collective reciprocity, it seems too early to conclude. Hence, I will call it a “rule” in this thesis.

Due to its implicit process, the participants in generalised exchange are also exposed to higher risk of free-riding by exchange partners. In addition, unlike reciprocal exchange, generalised exchange does not allow participants to mitigate the risk by using the tactic of gradually evaluating the partners’ trustworthiness. This is because generalised exchange lacks serial interdependence among actions, as giving and receiving are temporally and structurally disconnected (Inaba & Takahashi, 2012; Molm, 2000). When one transfers resources to another person, he/she cannot know from whom he/she will receive reciprocation. Hence, the tactic does not help him/her mitigate the risk of free-riding by other participants. In addition, incentives for defection are more prominent in pure generalised exchange. In reciprocal exchange and chain-generalised exchange, defection is not a very fruitful option because exchange partner(s) can easily identify the defection and withdraw from the relationship. However, in pure generalised exchange, identifying defection is more difficult because of the lack of direct reciprocation. As a result, the defector can enjoy the benefits until other participants recognise that he/she is cheating and his/her negative reputation builds up (Takahashi, 2000). Identifying defectors can be particularly difficult in large groups because it is cognitively demanding to keep track of other members' giving and receiving behaviours

(Baker & Bulkley, 2014). Therefore, the establishment of generalised exchange is predicted to require certain conditions to mitigate such inherent risks, such as social norms and trust among members (Yamagishi & Cook, 1993). The risk of non-reciprocation in generalised exchange might be particularly detrimental in organisational settings, compared to non-work, private settings, because individuals tend to show more calculative attitudes in social exchange episodes in organisational settings than in private settings and tend to behave cooperatively only when future benefits are warranted (Belmi & Pfeffer, 2015). In a similar vein, Shibayama et al. (2012) find that although the norm of generous sharing of knowledge and materials has been a long-held tradition in scientific research communities, the proliferation of academic entrepreneurship in material and medical science has led researchers to be more inclined to offer such help in exchange for tangible returns (i.e. co-authorship). Both indicate that the context of business organisations tends to discourage individuals from engaging in generalised exchange.

Indeed, one stream of research associates generalised exchange with altruistic motivation. For example, drawing on studies of generalised exchange by anthropologists such as Lévi-Strauss (1949) and Malinowski (1922), Sahlins (1974) argued that generalised reciprocity is characterised by indefiniteness in reciprocation – one does not expect return from the recipients – and considered it as a “free gift” stemming from altruistic interest in others; his model has been adopted by following researchers (e.g. Sparrowe & Liden, 1997; Tetrick, Shore & Tsui, 2004; Wu, Hom, Tetrick, Shore, Jia, Li et al., 2006). However, my discussion on the regulating mechanisms of generalised exchange shows that generalised exchange can stem from rational calculations of the benefits that one and others will get from exchange relationships. For this study, I adopt this rational and instrumental view on generalised exchange, which is consistent with the fundamental assumptions in SET (Blau, 1964; Emerson, 1972b, 1972a; Homans, 1958, 1961).

2-2. Generalised exchange orientation as an individual characteristic

In a given situation, one can choose to engage in negotiated, reciprocal or generalised exchange. For example, when one finds a colleague in trouble, he/she might offer to help only in exchange for something in return (negotiated); he/she may help and expect future reciprocation because he/she is close to the colleague (reciprocal); or he/she can offer help regardless of such conditions as long as the colleague is a member of his/her workplace (generalised). When one receives a favour from a colleague, one might do nothing unless explicitly requested to do something as a condition for the favour (negotiated), remember the favour and give a favour back to the colleague (reciprocal) or do a favour for someone else in the workplace (generalised).

However, evidence suggests that individuals' beliefs lead to consistent patterns in their reactions to social exchange occasions. Studies of employee–organisation relationships provide evidence that individuals' exchange ideology – beliefs about the benefit of applying the norm of reciprocity in employee–organisation relationships (Eisenberger et al., 2001) – has a consistent effect on individual responses to their perception about their employer, such as perceived organisational support (Eisenberger et al., 2001), psychological contract fulfilment (Coyle-Shapiro & Neuman, 2004) and procedural justice (Witt et al., 2001). There is also some evidence to suggest that individuals' beliefs about applying the norm of reciprocity in interpersonal relationships shape their behaviours in co-worker relationships (e.g. Eisenberger, Lynch, Aselage & Rohdieck, 2004; Gallucci & Perugini, 2003). Consistent with these findings, some theorists have assumed that individuals would also show different degrees of propensity to generalised exchange (Ballinger & Rockmann, 2010; Flynn, 2005).

Following these discussions, I propose a construct of generalised exchange orientation (GEO) along with constructs of negotiated and reciprocal exchange orientations (NEO and

REO, respectively), in a group of constructs I will call social exchange orientations (SEOs). I define GEO as individuals' beliefs in favour of the rule of collective reciprocity in interactions with other members in the workplace. This orientation is manifested in orientations towards unilateral giving with expectation of indirect reciprocation (UGI), paying-it-forward (PIF) and rewarding reputation (RWR), which are mutually distinct but share the rule of collective reciprocity as the underlying principle. Similarly, I define NEO as individuals' beliefs in favour of having explicit negotiation about the terms of exchange in interactions with other members in the workplace, and REO as beliefs in favour of the norm of reciprocity in interactions with other members in the workplace. I expect them to be distinct from one another.

There are several reasons for using regulatory mechanisms (i.e. rules and norms) as foundation of SEO constructs. As discussed before, social exchange is a joint endeavour by multiple individuals, and a particular form of exchange emerges from individuals' choice to follow a particular rule. For example, reciprocal exchange between two actors emerges because both are following the norm of reciprocity, and when one of them does not follow the norm, the mismatch in choice of rules in social exchange relationships could lead to the collapse of the relationship, such as one walking away (Flynn, 2005). Generalised exchange emerges and sustains because individuals unilaterally give resources to others, following the rule of collective reciprocity (Baker & Bulkley, 2014; Nowak & Roch, 2007; Nowak & Sigmund, 1998; Takahashi, 2000). Hence, individuals' beliefs that favour different types of regulatory mechanisms are likely to play key roles in shaping the forms of social exchange relationships among individuals.

I call these new constructs "orientations" because I intend to position the constructs in the middle of the generality–specificity spectrum of personal concepts from highly specific attitudes (e.g. toward single task) to highly general personality traits (Frese & Fay, 2001). It is not very specific because the concept is intended to be applicable to a wide range of exchange occasions in organisations, but it is not as general as personality traits, which concern an individual's global attitudes regardless of context. By setting the concept in the middle of the generality–specificity continuum, I aim to ensure its relevance to the phenomenon of interest (i.e. social exchange) while also maintaining its applicability to a variety of situations in organisations (c.f. Bandura, 1997; Fishbein & Ajzen, 1974; Rotter, Chance & Phares, 1972). I include "in the workplace" in the definition because individuals are likely to exhibit different orientations in work and non-work settings (Belmi & Pfeffer, 2015) and here, I only focus on orientations in the workplace. Following Eisenberger et al. (2001), I assume SEOs develop through “a personal history of direct experience, observation and persuasion by others” (p. 43) concerning the benefit of applying the three rules in interaction with other individuals at the workplace. This implies that although SEOs are stable individual characteristics, they are malleable. Established orientations would lead individuals to show consistent patterns across different occasions in interactions with others in the workplace. However, in a longer time frame, individuals might shift the levels of SEOs based on their experiences. I will discuss the antecedents of GEO in more detail in section 2-4 and empirically examine them in Chapter 5.

SEOs are distinct from existing constructs of individual orientations to social exchange. First, as I mentioned above, exchange ideology (Eisenberger et al., 2001) refers to individuals' beliefs about applying the norm of reciprocity in employee–organisation relationships, whereas SEOs concern the three forms of exchange in interpersonal relationships in organisations. Second, reciprocity norm acceptance (Eisenberger et al., 1987), the positive and negative norms of reciprocity (Eisenberger et al., 2004) and the personal norm of reciprocity (Perugini, Gallucci, Presaghi & Ercolani, 2003) concern individuals' beliefs in following the norm of reciprocity in interpersonal relationships. They only focus on reciprocal exchange and treat them as context-free, trait-like constructs. This is reflected in the scale items of these constructs, some of which refer to non-work situations. Finally, creditor ideology and reciprocity wariness (Eisenberger et al., 1987) refer to individuals' beliefs that "returning greater help than previously received will result in generous repayments", "caution in returning help is required to avoid being taken advantage of" and "disinclination to give back as much as has been received from others", respectively (P. 745). Although such orientations have been conceptually associated with individuals' engagement in negotiated and generalised exchange (Ballinger & Rockmann, 2010; Evans & Davis, 2005), the focus of the constructs is the balance between giving and receiving in exchange relationships, rather than the forms of exchange.

Proposition 1

Individuals have distinct orientations towards three regulating mechanisms of social exchange, namely, NEO, REO and GEO.

Proposition 2

GEO is manifested by three lower-order orientations towards unilateral giving with expectations for indirect rewards, paying-it-forward and rewarding reputation.

2-3. Consequences of GEO

I focus on individuals' work performance as the consequence of GEO. Although social exchange facilitates the exchange of various resources, such as love, status, money, information, goods and services (Foa & Foa, 1980; Foa & Foa, 1974), which carry economic and socio-emotional value (Tsui, Pearce, Porter & Tripoli, 1997), OB research has largely focused on work performance as resources that individuals provide in exchange relationships with various partners, such as with employers, supervisors, colleagues and customers. This is, obviously, because work performance is one of central issues of interest in the OB literature (Campbell & Wiernik, 2015). Among different facets of work performance, social exchange research has provided insights into why individuals engage in positive discretionary behaviours, such as organisational citizenship behaviours (OCBs), beyond their prescribed roles (Konovsky & Pugh, 1994; Pearce & Gregersen, 1991). Following this tradition, I will focus on the implications of GEO on discretionary behaviours in this thesis as an initial investigation into the consequences of GEO.

In this chapter, I will discuss GEO's implications on discretionary behaviours in general to provide a broad discussion on individuals' engagement in generalised exchange. I recognise GEO might affect individual attitudes towards organisations, such as psychological bonds between individuals and the organisation (Molm et al., 2007). I do not discuss such outcomes because such psychological bonds develop through participation in exchanges of resources with other participants, particularly in receiving benefits from others' behaviours (Molm et al., 2007). Hence, it is a rather distal consequence of GEO, compared with discretionary behaviours, through which individuals engage in generalised exchange.

In the following, I will briefly discuss findings about the impact of social exchange on individual work performance (2-3-1) and the impact of individual orientations towards social exchange, such as exchange ideology and personal norm of reciprocity, on work performance (2-3-2). Then, I propose the impact of GEO on work performance (2-3-3) and the boundary conditions that regulate the impact (2-3-4).

2-3-1. Social exchange and work performance

Individual work performance has constantly attracted researchers' attention throughout the history of organisational research (Campbell & Wiernik, 2015), although its meaning has changed substantially over time, reflecting the changing nature of work and organisations (e.g. Ilgen & Pulakos, 1999). Traditionally, researchers have focused on the proficiency with which individuals carry out the tasks that are prescribed in their job descriptions (Griffin, Neal & Parker, 2007), which are typically called task performance (Borman & Motowidlo, 1993; Johnson, 2003), in-role behaviours (Katz & Kahn, 1978) and job role behaviour (Welbourne et al., 1998). From this view, well-articulated job descriptions capture all of the behaviours needed for one to achieve the organisational goals (Murphy & Jackson, 1999), and performance can be evaluated in terms of the outcomes that one achieves through the specified behaviours (Campbell, McCloy, Oppler & Sager, 1993). Performance management practices of organisations typically focus on this aspect of work performance, providing individuals with incentives to perform prescribed behaviours and reach goals (Griffin et al., 2007).

However, this perspective does not capture the whole range of contributions that individuals make in organisations. As Barnard (1938) noted, organisations require employees to have a "willingness to cooperate" beyond their job descriptions, which provides organisations with the flexibility to cope with changes in their operating environment (Simon, 1951). Hence, the perspective of focusing solely on prescribed behaviours is being challenged as uncertainty and interdependence at work increase in modern organisations (Howard, 1995). In order to fill the gap between the traditional approach of job performance and the changing reality of work, researchers have started to look at individual behaviours that go beyond prescribed behaviours (e.g. Campbell et al., 1993; Murphy & Jackson, 1999), highlighting the importance of discretionary behaviours in which individuals engage as "a matter of personal choice" (Organ, 1988). Such behaviours are broadly called OCBs (Organ, 1988), while some also call them extrarole behaviours (Katz & Kahn, 1978) and contextual behaviours (Borman & Motowidlo, 1993). In reality, the boundary between inrole and extrarole behaviours is sometimes unclear because organisations can expand the role breadth through interventions, and employees might perceive OCBs as "it's my job" (Coyle-Shapiro, Kessler & Purcell, 2004). However, studies have mostly treated and empirically found task performance and OCBs to be distinct performances. In addition, there is a broad consensus that OCBs are divided into two broad categories: behaviours that are directed to specific individuals (i.e. OCB-I) and behaviours that benefit the organisation directly and its members indirectly (i.e. OCB-O) (Brief & Motowidlo, 1986; Smith, Organ & Near, 1983; Williams & Anderson, 1991). Researchers have also investigated various specific aspects of OCBs, such as helping, sportsmanship, organisational loyalty and taking initiatives (Podsakoff, MacKenzie, Paine & Bachrach, 2000).

SET has played an important role in understanding why employees engage in discretionary behaviours, although performance management mechanisms at organisations largely focus on prescribed behaviours. In the early stage of investigation into the antecedents of OCBs, researchers mainly focused on individual traits, such as conscientiousness, agreeableness and positive/negative affectivities (Organ & Ryan, 1995), and positive individual attitudes, such as job satisfaction (Bateman & Organ, 1983; Puffer, 1987; Smith et al., 1983). Drawing on early evidence, Organ (1988) emphasised positive attitudes as key antecedents of OCBs and argued that affective morale promotes OCBs by leading individuals to go beyond maximizing self-interest, while task performance is more likely to be motivated by individual interest in rewards. However, Organ and Konovsky (1989) revealed that individuals also engage in OCBs for calculative reasons, and following researchers started to analyse OCBs from a social exchange lens and assumed that individuals engage in OCBs because they expect reciprocation (e.g. Pearce & Gregersen, 1991). Studies in this stream of research found that high-quality social exchange relationships with other actors, such as employing organisation, supervisors and co-workers, lead individuals to demonstrate OCBs that benefits those exchange partners (e.g. Banks et al., 2014; Eisenberger et al., 2001; Erdogan & Liden, 2002; Love & Forret, 2008; Rhoades & Eisenberger, 2002; Settoon, Bennett & Liden, 1996; Wayne, Shore & Liden, 1997). Individuals distinguish among exchange partners, such as their employer, supervisor and co-workers, and react contingently upon the benefits they receive from each partner (Cropanzano & Mitchell, 2005). For example, Masterson, Lewis, Goldman and Taylor (2000) report that perceived organisational support (POS) is associated with OCB-O, while leader–member exchange (LMX) is associated with supervisor-directed OCBs (a form of OCB-I).

2-3-2. Existing approaches of individual orientations on social exchange and work performance

A number of studies have investigated the impact of individual differences on social exchange relationships and their implications to work performance. As summarised in Table 2-3, there are four types of studies, categorised by the types of social exchange relationships and the types of individual differences. In terms of the types of relationships, studies focus on either employee–organisation relationships or co-worker relationships. Regarding the type of individual differences, researchers have investigated constructs that concern individual orientations to apply the norm of reciprocity (e.g. exchange ideology, Eisenberger et al. (1986)) and constructs that concern individual orientations about the balance between giving and receiving in social exchange relationships (i.e. reciprocity wariness and creditor ideology, Eisenberger et al. (1987)). Strictly speaking, experimental studies in co-worker relationship categories (Cotterell, Eisenberger & Speicher, 1992; Eisenberger et al., 1987; Eisenberger et al., 2004; Gallucci & Perugini, 2003) do not specifically assume the organisational context in their experiments; however, I classified these experimental studies into co-worker categories because they treat peer-to-peer situations; thus, their findings might be applicable to co-worker relationships in the workplace.

Table 2-3. Summary of prior studies on individual orientations towards social exchange and work performance[3]

	Types of individual differences	
Types of relationships	Norm of reciprocity	Balance between giving and receiving
Employee–organisation relationship	• Eisenberger et al. (2001) • Ladd and Henry (2000) • Coyle-Shapiro and Neuman (2004) • Coyle-Shapiro (2002)	• Lynch, Eisenberger and Armeli (1999) • Eisenberger, Shoss, Karagonlar, Gonzalez-Morales, Wickham and Buffardi (2014) • Kamdar, McAllister and Turban (2006) • Shore, Bommer, Rao and Seo (2009) • Coyle-Shapiro and Neuman (2004)
Co-worker relationship	• Ladd and Henry (2000) • Wasko and Faraj (2005) • Gallucci and Perugini (2003) • Eisenberger et al. (2004)	• Cotterell et al. (1992) • Eisenberger et al. (1987)

First, studies that investigate the impact of individual orientation to apply the norm of reciprocity in employee–organisation relationships (left upper section of Table 2-3) consistently show that the orientation moderates inducements that individuals receive from the employing organisation on individual performance. Eisenberger et al. (2001) show that felt obligation mediates the impact of POS on in-role performance and organisational spontaneity, a form of OCB-O, and the link between POS and felt obligation is stronger when exchange ideology is strong. Similarly, Ladd and Henry (2000) report that POS has a stronger impact on OCB-O when exchange ideology is high. Coyle-Shapiro (2002) uses acceptance of the norm of reciprocity (Eisenberger et al., 1987) as an indicator of individual

[3] I did not include studies that analyse non-behavioural outcomes such as attitudes in this review. For a more comprehensive review of studies about individual differences, please see Cropanzano and Mitchell (2005).

differences and reports that the relationship between psychological contract inducements and OCBs are stronger when it is high. Coyle-Shapiro and Neuman (2004) show that exchange ideology moderates the relationships between employees' perceptions of the employer's psychological contract obligation and employees' fulfilment of their obligations. Overall, the evidence clearly suggests that individuals with strong orientation are more likely to change their behaviours in accordance with the treatment by their employer than those with weak orientation. The simple slope analyses of the studies (Coyle-Shapiro & Neuman, 2004; Eisenberger et al., 2001; Ladd & Henry, 2000) show that the levels of individual reactions (felt obligation, POS and employee psychological contract fulfilment) to favourable treatment by the employer do not differ much between those with a strong orientation and those with a weak orientation; however, those with a strong orientation rspond to unfavourable treatment by demonstrating much weaker reactions than those with weak orientation.

Second, unlike the studies of the first category, studies that investigate the impact of individual orientation to apply the norm of reciprocity in co-worker relationships (left lower section of Table 2-3) show mixed results. Gallucci and Perugini (2003) tested the impact of positive norm of reciprocity (Perugini et al., 2003) – beliefs that favour the reciprocation of positive behaviours – in a two-player game. They found that individuals with strong norm tend to behave collaboratively when the other player acts collaboratively, while those who do not have strong beliefs do not change their behaviours based on the other actors' behaviours. Consistent with studies in the first category, they found that individuals behaved collaboratively regardless of their level of reciprocity norm when their partner had treated them favourably, but those with a strong norm tended to become less collaborative when the partner treated them unfavourably.

Eisenberger et al. (2004) introduced the negative reciprocity norm construct, which refers to beliefs that favour retaliation for negative behaviours (e.g. being nasty and hostile) by other people and found that participants with strong negative reciprocity norm tend to show strong anger to unfavourable treatment and retaliated to confederates of the experimenters, with whom they engaged in a marketing-related task in pairs.

Ladd and Henry (2000) used a modified exchange ideology scale to measure individuals' orientation to reciprocal exchange in co-worker relationships within teams, but the authors did not find a significant moderation effect on the relationships between receiving team support and team-directed OCB. It seems important to note that the difference between this study and Gallucci and Perugini's (2003) goes beyond methodological approaches (i.e. either an experimental study or field study): while the former tested the impact in a pure dyadic situation with only two actors involved, the latter was conducted in situations in which individuals interact with multiple co-workers. I will come back to this point later in this chapter.

Wasko and Faraj (2005) examined the main effect of individual orientation to following the norm of reciprocity on knowledge-sharing behaviours on an in-house online knowledge-exchange platform and found significant negative effects. Close examination of the results suggests that their findings might be somewhat consistent with the findings of Gallucci and Perugini (2003). As online knowledge platforms provide opportunities to those who have not had prior interactions, it is difficult for the participants to judge if the recipient of his/her knowledge will reciprocate. Hence, the situation is, to some extent, similar to the unfavourable treatment situation in Gallucci and Perugini (2003).

Third, the upper right section of Table 2-3 shows studies on the impact of individual orientation about the balance between giving and receiving on employee–organisation relationships. Lynch et al. (1999) suggest that individuals with weak reciprocity wariness moderate the relationship between POS and in-role/extra-role behaviours such that those with strong wariness are more susceptible to POS. On the contrary, Eisenberger et al. (2014)

report the opposite. They investigated the relationships between supervisors' perceived organizational support and the quality of LMX they have developed with subordinates (the authors posit that the development of high-quality LMX eventually benefits the organization through subordinates' increased effort and thus considered it a type of discretionary behaviour that benefits the organisation) and found that supervisors with strong reciprocity wariness are less susceptive to POS. Kamdar et al. (2006) show similar results in terms of procedural justice, and Shore et al. (2009) report consistent results in their studies about the impact of economic and social exchange relationships with the employer. Hence, while the results are not entirely consistent, it seems that reciprocity wariness makes individuals reluctant to respond to employers' inducements by OCB, which is consistent with the definition of the construct. In terms of creditor ideology, Coyle-Shapiro and Neuman (2004) found that employees with stronger creditor ideology tend to perceive a stronger obligation to contribute to the organization and are more likely to fulfil the obligations than those with weak creditor ideology.

The fourth group of studies investigates the impact of individual orientation regarding the balance between giving and receiving on co-worker relationships (lower right section of Table 2-3). Eisenberger et al. (1987) report that those with strong reciprocity wariness tend to be less susceptive to the resources they receive from exchange partners, and those with stronger creditor ideology tend to provide resources generously, even when the situation signals negative cues about the prospects for reciprocation. Cotterell et al. (1992) also found that wary individuals are less likely to respond to cooperative communication from colleagues by giving resources to them, and those with a strong creditor ideology tend to give resources generously even when colleagues do not communicate cooperatively. Both of these studies used experiments in which participants were put into a situation to interact with a single exchange partner. To my knowledge, no empirical study has investigated the impact of these orientations on co-worker (or peer-to-peer) relationships in field settings.

In summary, these studies have shown that individual orientations impact how individuals respond to exchange partners in reciprocal exchange and thus their work performance. First, individuals with a strong orientation to follow the norm of reciprocity are more likely to differentiate their behaviours based on their relationships with the exchange partner. In particular, they become reluctant to demonstrate positive discretionary behaviours when the exchange partner does not treat them favourably. Second, those with a creditor ideology tend to be more generous in reciprocating the benefits they receive, and those with reciprocity wariness tend to be stingier in responding to behaviours by exchange partners. Despite the relatively clear-cut results in pure dyadic situations, in which one interacts with another actor (e.g. employer, peer), we do not have much evidence about the impact of individual beliefs within natural co-worker relationships in which individuals interact with multiple actors.

2-3-3. GEO and work performance

As summarised above, individual beliefs about social exchange relationships are found to have a considerable impact on individual behaviours. Then, how might GEO affect individual behaviours? Individuals with strong GEO are likely to apply the rule of collective reciprocity in interactions with co-workers in the workplace. This suggests that they demonstrate paying-it-forward, rewarding reputation and unilateral giving behaviours at the workplace. They are likely to feel the need to contribute to others when they receive resources from someone (paying-it-forward) and when someone provides resources to others (rewarding reputation); in addition, even without such stimuli, they tend to unilaterally give resources to others and expect indirect reciprocation (unilateral giving). Therefore, individuals with strong GEO are likely to demonstrate discretionary behaviours that benefit co-workers, even when there is little prospect for reward or direct reciprocation to such behaviours.

The review suggests that those with strong REO are likely to show positive discretionary behaviours towards those whom they have positive perceptions of, and are less likely to demonstrate such behaviours to those whom they do not know or have negative perceptions of. Individual orientation in favour of the norm of reciprocity (i.e. exchange ideology and personal norm of reciprocity) moderates the individuals' reaction to the treatment by the exchange partner. Individuals with a strong orientation change their behaviours based on the treatment by an exchange partner (e.g. employer, confederate in experiment) much more than those with weak orientation (Coyle-Shapiro & Neuman, 2004; Gallucci & Perugini, 2003; Ladd & Henry, 2000). Receiving benefits from an exchange partner leads to a sense of obligation (Eisenberger et al., 2001) and develops positive expectations for return from future interactions with a partner (Cropanzano & Mitchell, 2005). A critical difference between the effects of GEO and REO is that the latter is likely to require positive expectation for direct reciprocation.

NEO is likely to suppress discretionary behaviours. Individuals with strong NEO make sure they receive fair rewards for their behaviours through explicit negotiation. Therefore, they engage in discretionary behaviours when they successfully agree on the terms of exchange with a co-worker. Such a situation is not likely to happen very often because (1) negotiation takes time, and thus, it is not efficient to have negotiation frequently, and (2) they would not always succeed in striking such deals. They are more likely to focus on prescribed behaviours, which are typically explicitly defined (either written or oral) and associated with rewards through performance management mechanisms.

Proposition 3

GEO leads individuals to demonstrate discretionary behaviours that benefit others, regardless of prospects for direct reciprocation and rewards for such behaviours.

The differences between the behavioural consequences of generalised and reciprocal exchange suggest that researchers need to consider both types of exchange orientations in analysing co-worker relationships. As reviewed in the prior section, very few studies have investigated the impact of individual orientations in favour of the rule of reciprocity on interpersonal relationships, compared to the profound evidence about the impact of exchange ideology on employee–organisation relationships. In addition, although experimental studies using situations that involve two actors (Eisenberger et al., 2004; Gallucci & Perugini, 2003) show a significant moderation effect of individual orientation in favour of the rule of reciprocity, one study that applied similar constructs to co-worker relationships in a team setting did not show a significant moderation effect (Ladd & Henry, 2000).I suspect a potential problem in the study by Ladd and Henry is that the authors only consider reciprocal exchange and do not take generalised exchange among co-workers into account. Unlike employee–organisation relationships, in which only two actors are present, co-worker relationships typically involve a larger number of individuals. Therefore, individuals might simultaneously engage in reciprocal and generalised exchange, both of which could lead to positive discretionary behaviours towards co-workers. Therefore, it is important to distinguish between individual orientations to reciprocal and to generalised exchange in analysing social exchange relationships among co-workers.

2-3-4. Boundary conditions for GEO

Now, I turn the discussion towards the boundary conditions for the impact of GEO on discretionary behaviours. Even when individuals have strong GEO, they do not necessarily adopt the rule of collective reciprocity uniformly at any time. I propose that individuals' identification with collectives in and around an organisation shapes the boundary of GEO's impact on discretionary behaviours.

Identification with a collective leads individuals to view their membership in a collective as a defining element of their self-concept (i.e. identity) and to consider key characteristics of the collective and its members, such as values, beliefs, stereotypic traits and abilities, as their own (Ashforth et al., 2008). Identification with a collective leads one to consider the self as interchangeable with other members of the collective and to distinguish those outside the collective as being distinct from the in-group members (Turner, 1982). One tends to feel positively about in-group members and treat them more favourably than he or she would treat out-group members (Brewer, 1996). Importantly, such perception does not require knowledge about individual members of the collective: one tends to feel positively about and to favourably treat members of the collective, whoever they really are (Hogg & Turner, 1985; Prentice, Miller & Lightdale, 1994).

It is important to note that individuals in large, complex organisations typically develop identification with multiple collectives (e.g. their workgroup, functional unit and entire organisation) to different degrees (Reade, 2001b; Reade, 2001a; Vora & Kostova, 2007). One might even identify with a collective which spans beyond an organisation, such as occupational groups (e.g. Thatcher, Doucet & Tuncel, 2003). This has implications on how one treats other members of the organisation. Imagine someone who strongly identifies with a functional unit of a company but does not identify much with the company as a whole. This person is likely to consider members of the functional unit as members of "my" organisation and to perceive him/her sharing various attributes, such as values, goals and beliefs, with them. In contrast, the individual is likely to distinguish him/herself and the other members of the organisational unit from the members of the company outside of that unit.

This suggests that individuals with strong GEO are more likely to adopt the rule of collective reciprocity when they interact with members of collectives to which they strongly identify than when they interact with someone outside such a collective. GEO refers to individuals' beliefs that favour application of the rule of collective reciprocity, and it leads individuals to calculate debt and credit in social exchanges in terms of "we" rather than "I" and "you". Hence, identification with a collective and the resulting perception of seeing oneself as interchangeable with other members of the collective (Turner, 1982) are likely to lead to adopting GEO in interactions with the members of the collective. Indeed, prior studies suggest that individuals are more likely to follow the rule of collective reciprocity when they perceive that they share a common membership in a collective with the target of their behaviours. First, when individuals perceive others as sharing similar characteristics or being members of the same community, they are more likely to engage in paying-it-forward behaviours (Buchan, Croson & Dawes, 2002). Second, evidence also suggests that individuals tend to engage in rewarding reputation behaviours when they perceive others as sharing the same social identity (Johansson & Svedsäter, 2009; Walster, Berscheid & Walster, 1973). Third, the group heuristic hypothesis by Yamagishi and his colleagues (1999) point that the salience of membership in a social group triggers unilateral giving to other members of the group as a signal of willingness to contribute to the group, for which they found support through experiments (Yamagishi et al., 2008). All in all, this evidence suggests that interactions with those with whom one considers as sharing a common membership in a collective promote the application of the rule of collective reciprocity.

Taken together, this discussion suggests the way individuals develop identification towards multiple collectives in and around an organisation shapes the boundary of one's application of GEO in interpersonal relationships. Assuming the levels of GEO are equal, those with strong identification with an entire organisation are likely to apply the rule of collective reciprocity when interacting with anyone in the organisation, whereas those with strong identification with the organisations' subunit (but not with the entire organisation) are likely to apply it in interacting with members of the same subunit. When one identifies with an occupational group but not with either a subunit or the entire organisation, he/she is likely to apply the rule of collective reciprocity when he/she interacts with the members of the same occupation but not with other members of the organisation. Such behaviours might be unlikely in workplaces from the pre-Internet era, in which employees worked in a particular physical space (e.g. office, factory) and communication was constrained by physical locations. However, due to the prevalence of Internet access and mobile devises, contemporary employees can easily share their knowledge with those in the same occupational group beyond the organisation.

Proposition 4:

Individuals' identification with collectives in and around an organisation shapes a boundary of the impact of GEO on discretionary behaviours; GEO is likely to have a stronger effect on discretionary behaviours when one interacts with members of a social group with which one strongly identifies.

2-4. Antecedents of GEO

2-4-1. Organisational context and changes in GEO

Researchers have considered individuals' beliefs about social exchange relationships to develop through a history of interactions with other members at the workplace (e.g. Eisenberger et al., 2004). This implies such beliefs can change over time, yet to my knowledge, no study has directly examined it. However, recent findings by Belmi and Pfeffer (2015) provide some support to this view. They report that individuals are less likely to follow the norm of reciprocity in organisational contexts (co-worker) than in private contexts (friends, acquaintances), suggesting that individuals develop their attitudes to reciprocal exchange throughout their occupational life, apart from their attitudes towards social exchange in private life. Then, how do individuals develop their orientations towards social exchange before they start their occupational life? Drawing on attachment theory, I assume that early experiences of interactions with close people, such as family members and friends, form the basis of individuals' orientations towards different forms of social exchange in non-work settings. Researchers have found that experiences of interactions with primary caregivers in early stage of life form individuals' general attachment style and affect their later social interactions (Ainsworth, Blehar, Waters & Wall, 2015; Bowlby, 1969, 1979). Recent studies further found that individuals also develop relation-specific attachment styles in later life based on interactions with specific actors (Fraley, 2007; La Guardia, Ryan, Couchman & Deci, 2000). These findings suggest that individuals might develop SEOs, which are specific to workplace interactions, through experiences of interactions with others at the workplace, and the SEOs can diverge from the orientations they developed in their early stage of life.

Evidence suggests that prolonged exposure to a particular environment leads even stable individual characteristics, such as beliefs and personality traits, to change over time (e.g.

Boyce et al., 2015; Desai et al., 2014; Kirchmeyer, 2002; Li et al., 2014). The literature provides three mechanisms for such changes: generalisation, knowledge activation and cognitive dissonance. First, exposure to an environment provides opportunities and challenges that lead individuals to develop certain goals, strategies and routines that are suitable for the environment (Frese, Kring, Soose & Zempel, 1996; Kirchmeyer, 2002), and prolonged exposure to a particular environment tends to lead such reactions to become generalised into stable characteristics of individuals (Caspi, Roberts & Shiner, 2005; Kohn & Schooler, 1982). Second, frequent activation of knowledge constructs such as beliefs increases their baseline level of activation readiness (Higgins, 1989; Higgins, King & Mavin, 1982), and the higher the baseline level of a construct, the more easily individuals will activate the construct with limited contextual cues (Higgins & Brendl, 1995). Taken together, these theories suggest that a situation that makes the rule of collective reciprocity appropriate and beneficial will have different short-term and long-term effects. In the short term, exposure to such a situation would lead individuals to activate GEO and apply the rule of collective reciprocity to the particular situation. In the long term, repeated exposure and activation of GEO would lead to higher levels of GEO. Third, cognitive dissonance (Festinger, 1957) is likely to happen when individuals face an environment that is not consistent with one's beliefs, and continued exposure to such an environment could lead to changes in deeply held beliefs to accommodate such dissonance (Desai et al., 2014). This would work when individuals are exposed to a situation that makes the rule of collective reciprocity unfavourable. In the short term, it would lead individuals to activate NEO or REO; however, in the long term, prolonged exposure to such an environment would lead individuals to abandon their belief in the rule of collective reciprocity, resulting in lower levels of GEO.

My discussion of the nature of the three forms of social exchange suggests that the development of GEO requires two conditions. First, it requires contextual factors that blur the distinction between self-interest and others' interests. In generalised exchange, individuals follow the rule of collective reciprocity; they keep accounting for gain and loss in social exchange relationships at the collective level and no longer pay attention to individual-level gain and loss. On the other hand, in negotiated exchange, individuals focus on maximizing their self-interest through negotiation and do not pay much attention to benefiting the partner; in reciprocal exchange, individuals balance gain and loss with individual exchange partners, concerning the interests of both themselves and each exchange partner (Flynn, 2005). Therefore, a situation that blurs the distinction between the interests of oneself and one's co-workers will lead individuals to apply the rule of collective reciprocity rather than other rules, and over time, it will result in an increase in GEO. On the other hand, a situation that promotes the salience of individual interests will result in reduction of GEO over time.

Second, promotion of GEO also requires an environment that promotes the expectation of future returns from indirect reciprocation (Yamagishi & Cook, 1993). In any social exchange relationship, it is vital that one can expect that providing resources to other members will eventually benefit oneself (Adler & Kwon, 2002). As discussed above, the collective structure and implicit process of generalised exchange makes it riskier than other forms. Therefore, it is important that contextual factors promote individuals' expectation that helping others will eventually benefit themselves in order for them to engage in generalised exchange. Although generalised exchange has an advantage over other forms in terms of flexibility of resource transfer among multiple individuals, lack of such positive expectations is likely to make individuals reluctant to engage in generalised exchange and to prefer safer forms of exchange (cf. Gal et al., 2014). Hence, prolonged exposure to an environment that promotes an expectation of positive return will foster GEO, whereas an environment that increases the threat of non-reciprocation will weaken it.

In the following, I discuss key contextual factors that contribute to the development of GEO in terms of job characteristics (2-4-2), social environment (2-4-3) and organisational practices (2-4-4).

2-4-2. Job characteristics

Job characteristics are known to shape individuals' attitudes and behaviours in the workplace (Hackman & Oldham, 1976; Morgeson & Campion, 2003; Parker & Wall, 1998; Wall & Martin, 1987). As a result of long-standing interests in this topic in the literature, researchers have identified a variety of dimensions that capture task, knowledge, social and contextual characteristics of jobs (Morgeson & Humphrey, 2006). Among them, social characteristics capture the interpersonal and social aspects of work (Morgeson & Campion, 2003) and thus are likely to be most relevant to the development of GEO. Major dimensions of social characteristics include task interdependence (Kiggundu, 1981), social support (Johnson & Hall, 1988; Karasek, Brisson, Kawakami, Houtman, Bongers & Amick, 1998), feedback from others (Hackman & Lawler, 1971) and interaction outside the organization (Morgeson & Humphrey, 2006). I propose that task interdependence is particularly relevant in promoting GEO though blurring self-interest and others' interests and promoting an expectation of indirect reciprocation.

There are multiple approaches to conceptualising task interdependence in the literature (Courtright, Thurgood, Stewart & Pierotti, 2015). For example, Thompson's (1967) discussion on interdependence between organisational units mainly focused on the way workflow is distributed across units. He pointed out that reciprocal interdependence, in which the output of a unit is used as an input of another unit (and the output of the latter is used as an input of the former) as the highest level of interdependence. Such interdependence requires a high level of coordination among units (Wageman, 2001). Following researchers adopted the idea of reciprocal independence to the individual level and showed that high levels of interdependence lead to collaboration among individuals (e.g. Pearce & Gregersen, 1991). On the other hand, Kiggundu (1981) conceptualised task interdependence as the degree to which individuals depend upon one another for important resources, such as skills, knowledge and information, and argued that diversity in those resources among individuals leads to high levels of interdependence. While these two traditions have been widely adopted by later researchers, Wageman (1995) pointed out that the two concepts should be combined as a single construct, distinguished from interdependence in goals and rewards, which she also proposed to integrate as outcome interdependence. I adopt this broad conceptualization of task interdependence that covers both process and resource aspects, as they jointly shape the way tasks are carried out among individuals (Courtright et al., 2015).

Under high levels of task interdependence, success in one's job depends on that of others in the organization who engage in interconnected tasks (Thompson, 1967) and is no longer independent from others' success. Hence, interdependence leads individuals to feel responsible to one another (Pearce & Gregersen, 1991). As team members possess and have access to different types of resources that are necessary to achieve goals, they can benefit from collaboration with one another (Courtright et al., 2015). Such frequent and repeated interactions lead to increased levels of familiarity and information sharing among individuals (Gruenfeld, Mannix, Williams & Neale, 1996; Rockett & Okhuysen, 2002). These conditions are likely to promote the sense that one shares a common fate with others (Adler & Kwon, 2002). Therefore, high levels of task interdependence are likely to blur the distinction between self-interest and others' interests and thus lead individuals to apply the rule of collective reciprocity in exchange situations. This suggests that continued exposure to high levels of task interdependence eventually leads individuals to promote GEO.

High task interdependence will also promote an expectation of reciprocation because it leads to frequent interactions among individuals. When one frequently interact with others, there are a plenty of opportunities to receive resources (e.g. support, knowledge) from other individuals. On the other hand, when one works in an isolated condition, one has little opportunity to receive resources from others (Flynn, 2005). Hence, lack of interdependence is likely to increase the risk of non-reciprocation and hence makes the rule of collective reciprocity a less favourable choice.

Proposition 5:

Continued exposure to high task interdependence promotes GEO.

2-4-3. Social environment

Along with job characteristics, the social environment that surrounds individuals (e.g. relationships with co-workers and supervisors) also shapes individuals' attitudes and behaviours (Judge & Kammeyer-Mueller, 2012). I propose that shared goals and vision promote GEO by blurring self-interest and others' interests and that depersonalised trust promotes GEO through promoting an expectation of reciprocation. When common vision and goals are shared among members of an organisation, the vision and goals serve as a common framework for interpreting the situations they face (Fussell & Krauss, 1989); this allows them to reconcile the differences in individual situations. Promotion of vision and goals leads individuals to transcend individual interests (Bass, 1999; Shamir, House & Arthur, 1993) and to adopt a broad view of the collective (Carton, Murphy & Clark, 2014). This triggers a shift of cognitive focus from the "local" to the "global" (Senge & Sterman, 1992), by which an individual recognizes that his/her work is interconnected with others' as an integral part of a larger mechanism. Such cognition of shared interests and interdependence leads individuals to assume “they swim or sink together”, rather than “when they swim, others sink” (De Dreu, 2007) and to encourage individuals to engage in taking the perspective of others (Weick and Roberts, 1993). Perspective taking leads individuals to see others as ‘merged’ with oneself (Davis, Conklin, Smith & Luce, 1996) and less concerned about individual-level debt and credit in social exchange.

Proposition 6:

Continued exposure to high levels of shared vision and goals promotes GEO.

Social exchange researchers have considered trust towards the exchange partner to be instrumental in promoting individuals’ engagement in reciprocal exchange and generalised exchange by reducing concern about the lack of reciprocation (Blau, 1964; Yamagishi & Cook, 1993). Trust is defined in multiple ways in the OB literature (Colquitt et al., 2014), but these definitions commonly mention positive expectations towards other individuals’ behaviours. For example, Mayer, Davis and Schoorman (1995) define trust as individuals' willingness to make themselves vulnerable to an exchange partner, based on the expectation that the partner will do the same without monitoring or enforcement. McAllister (1995) defines trust as individuals' positive expectations about an exchange partner and willingness to take action based on the partner's words and intentions. Such positive expectation reduces the perceived risks of free-riding, and thus encourages individuals to engage in implicit exchange.

However, the types of trust that these authors discuss are *target-specific,* developed based on the history of interpersonal interactions with and knowledge about a particular exchange partner. However, such target-specific trust has little to do with generalised exchange, which involves unspecified individuals in the process of reciprocation. In generalised exchange, one needs to think or feel "people in this organisation are generally trustworthy", even if he/she lacks sufficient knowledge of individuals to judge the individual trustworthiness of each organisational member and does not have affective ties with all of them. In other words, generalised exchange requires *depersonalised* trust (Kramer, 1999) towards unidentified members of an organisation. Such trust typically develops based on organisational mechanisms, such as established rules and norms shared among participants in an organisation (Fine & Holyfield, 1996). Individuals in an organisational context in which members have high levels of depersonalised trust will develop GEO because such trust mitigates the risks inherent in generalised exchange (Yamagishi & Cook, 1993). As organisation members generally feel it safe to transfer resources to others, depersonalised trust increases the probability that one receives resources from other members. Over time, exposure to such an environment will result in development of the belief that benefiting others will eventually benefit oneself through indirect reciprocation.

Proposition 7:

Continued exposure to high levels of depersonalised trust promotes GEO.

2-4-4. Organisational practices

The final category of contextual factors is organisational practices. Prior scholars have proposed various HR practices as antecedents of organisational social capital, of which generalised exchange is an important ingredient (Baker & Dutton, 2007; Evans & Davis, 2005); however, their arguments are not based on detailed discussion of the nature of generalised exchange and individual engagement. Drawing on these prior contributions, I discuss HR practices that promote GEO through blurring self-interest and others' interests and reducing the perceived risks of non-reciprocation.

First, I propose that selective recruitment and institutionalised socialisation will promote GEO through blurring the distinction between self-interest and others' interests. A selective recruitment process signals the prestige and distinctness of the membership of the organisation, which are known as key ingredients in organisational identification (Dutton, Dukerich & Harquail, 1994; Mael & Ashforth, 1992). Even before one enters an organisation, the experience of going through a selective recruiting process nurtures the sense of self-enhancement, and one starts to recognise the organisation as part of his/her identity (Carter & Highhouse, 2013). Therefore, selective recruitment processes lead individuals to identify with the organisation and thus to consider themselves as interchangeable with other members of the organisation (Turner, 1982). In addition, recruitment practices that are designed to ensure person–organisation fit, such as involvement of line managers and front-line employees in the selection process, will result in selection of individuals who share certain characteristics (e.g. skills, knowledge and attitudes) that fit the organisation and help them develop shared knowledge about the organisation with existing members (Evans & Davis, 2005). The salience of shared characteristics will also lead individuals to blur the boundary between self and others (cf. Chatman & Flynn, 2001).

Socialisation practices refer to the approaches that organisations use to facilitate newcomers' adaptation to the organisation (Van Maanen & Schein, 1979). Through socialisation, individuals are integrated into the organisation's activity patterns (Anderson, Riddle & Martin, 1999) and make sense of "what the organisation is all about and why it's important" (Ashforth, Sluss & Harrison, 2007). Institutionalised socialisation treats newcomers as a group and utilises well-organised procedures (Jones, 1986). It has advantages in conveying consistent messages about the organisation, promoting a sense of shared values among newcomers (Allen, 2006) and encouraging newcomers to accept the existing ways of doing things in the organisation (Jones, 1986). As institutionalised socialisation treats newcomers as a group, it promotes not only individuals' adaptation to a particular job and workgroup but also their identification with the entire organisation (Ashforth & Saks, 1996). Along with a selective recruitment process, this signals common characteristics among members of the organisation and highlights the distinctness of organisational membership, which leads to clear distinction between organisation members and others (Brewer, 1996). Taken together, these qualities of institutionalised socialisation are likely to promote GEO through blurring the distinction between self-interest and others' interests.

Provision of collective incentive, such as gain sharing and bonuses for team- and organisation-level achievements, may promotes GEO through shared goals. Linking incentives with the achievement of collective goals is likely to attract individuals' attention to the collective goals and hence to promote the salience of shared goals. Such incentive systems also send organisation members the signal that they can benefit from helping other members' success (Baker & Dutton, 2007) and therefore promote shared interests among members of an organisation (Pfeffer, 1995; Rodgers & Hunter, 1991; Schuster, 1984). On the other hand, sole reliance on individual performance-based pay leads individuals to focus on their own goals and can promote competition among individuals.

Organisations can also reduce the perceived risk of free-riding by incorporating collaborative behaviours as criteria for rewards (including promotion). For example, an organisation might measure demonstration of such behaviours as part of a 360-degree survey and use it as a criterion for promotion (Hansen & Nohria, 2004). Such practices signal that collaborative behaviours are expected and appropriate in the organisation and ensure that those who are not collaborative and are free-riding on others' goodwill will suffer in the promotion process. They not only promote cooperative behaviours among employees, but also prevent those who are not cooperative from being promoted to leadership positions and thus having an influence on others' behaviours. On the other hand, linking rewards solely with individuals' work outcomes could encourage individuals to focus on self-interest at the expense of others (Campbell, Lee & Im, 2016).

I propose employment security (e.g. no-layoff policy) and internal career opportunities (e.g. filling vacancies with existing employees) to foster GEO through the reduction of risks of non-reciprocation. These practices signal organisations' expectation for long-term employment of employees (Blau, 1964; Rousseau, 1989), reduce employees' concern over job insecurity and promote the incentive to remain in an organisation (Batt & Valcour, 2003). High turnover of employees will increase the uncertainty in reciprocation, as the exchange partners may leave the organisation before they reciprocate. In addition, high turnover increases incentives for free-riding. High turnover also weakens the structural embeddedness of organisation members (Leana & Van Buren, 1999), which provides a basis for collective monitoring and sanctioning of defection (Jones, Hesterly & Borgatti, 1997). In addition, instability of membership makes it difficult for individuals to develop a personal reputation, which requires consistent demonstration of visible behaviours (Zinko, Ferris, Humphrey, Meyer & Aime, 2012). As a result, fluid organisational membership reduces the potential drawbacks of defection, such as collective sanctioning from other members of the organisation and damage to one's reputation. This further reduces the prospects for future return from generalised exchange. Furthermore, a lack of employment security and internal development opportunities sends a message of an organisation's intention to foster short-term relationships with the employees (Sun, Aryee & Law, 2007) and justifies selfish behaviour from the organisations' side (Leana & Van Buren, 1999). Such signals lead individuals to behave more selfishly (Levine and Tyson, 1990) and thus deteriorate trust among them. All in all, lack of employment security and internal development opportunity will reduce GEO through promoting perceived risks of non-reciprocation.

Proposition 8:

Selective recruitment, institutionalised socialisation, collective incentive, incentive for collaborative behaviours, employment security and internal career opportunities promote organisation members' GEO.

2-4-5. Individual dispositions as moderators

In addition to contextual factors, individual dispositions may also affect the development of individual beliefs on different forms of social exchange. I base this discussion on the cognitive-affective system theory of personality (Mischel & Shoda, 1995). This theory conceptualises individuals as a system of cognitive and affective processes that govern the way an individual perceives, feels and reacts to a given situation and thus mediate the link between situation and behaviour. Mischel and Shoda (1995) assume the cognitive-affective system remains stable in a person but that the resulting behaviours will vary when a person is exposed to different situations. In addition, this suggests individuals with different systems will react to the same situation differently. Regarding our discussion of GEO, this theory implies that individuals' dispositional characteristics lead individuals to react differently to contextual antecedents; in other words, individual dispositions will moderate the impact of contextual factors on GEO. Drawing on this theory, I will discuss the dispositional characteristics that may affect individuals' reactions to the two conditions – blurred distinction between self-interest and others' interests and increased expectation for future benefit – that promote GEO.

First, I proposed task interdependence, shared goals, selective recruitment, institutionalised socialisation and collective incentive promote GEO through blurring the distinction between self-interest and others' interests. These factors generally lead individuals to perceive themselves as part of a larger group of individuals who have common characteristics, and to consider themselves to share interests with them. I propose two factors – collective identity orientation and prosocial personality – as individual dispositions that moderate the influence of these contextual factors.

Flynn (2005) pointed out that individuals who are predisposed to collective identity orientation are more likely to develop a preference towards generalised exchange than who are not. He draws on discussions by Brewer and Gardner (1996), who argue that people tend to adopt one of three identity orientations: personal, relational or collective. The three forms of self vary in the way individuals define themselves. Individuals with personal identity orientation define themselves based on their unique characteristics, whereas those with relational identity define themselves by their relationships with significant others, and those with collective identity orientation base their identity on membership to collectives. Individuals who are predisposed to collective identity orientation are motivated towards promoting the welfare of the collective and its members rather than fulfilling self-interest (Brewer & Gardner, 1996). Although identity orientations are often treated as state (e.g. Brickson, 2000), evidence shows that they vary by society and gender (Cross & Madson, 1997; Kashima & Hardie, 2000; Markus & Kitayama, 1991; Watkins, Akande, Fleming, Ismail, Lefner, Regmi et al., 1998), suggesting some individuals are more predisposed to collective identity orientation than others. Such individuals are more prone to external stimuli that trigger identification with collectives such as organisations and workgroups (Cooper & Thatcher, 2010). As discussed above, identification with collectives leads one to consider oneself interchangeable with other members (Turner, 1982); such perception would make one more likely to apply the rule of collective reciprocity. Hence, individuals with predisposition to collective identity orientation are likely to be more prone to the effect of contextual factors that promote GEO through blurring self-interest and others' interests.

I also propose that a prosocial personality is likely to positively moderate the impact of contextual factors that blur the boundary between the interests of the self and others. While personality researchers have studied various personality traits, many agree that there exist two fundamental dimensions behind personality traits, which Chiaburu, Oh, Berry, Li and Gardner (2011) call “prosocial” and “proactive” tendencies. (I will discuss proactive tendencies in the next section.) The prosocial personality dimension is characterised by social characteristics including social propriety and solidarity (Saucier & Goldberg, 2003), getting along (Hogan & Holland, 2003), respect for social conventions (Paulhus & John, 1998) and communion (Bakan, 1966; Wiggins, 1991). Among the Big Five personality traits, conscientiousness, agreeableness and emotional stability (the opposite of neuroticism) are associated with this dimension (Digman, 1997), whereas socially aversive personalities, such as Machiavellianism and psychopathy, are associated negatively with this dimension (Jones & Paulhus, 2011). Personality theorists argue that this dimension is associated with survival in society through functioning as a member of collectives; individuals with strong prosocial personality tend to pay attention to the welfare of others and shared interests in the community (Hogan, 1996). On the other hand, those who are low in this dimension tend to separate themselves from and be hostile to others (Wiggins, 1991). This suggests that individuals with prosocial characteristics are likely to be prone to the influence of contextual factors that blur the distinction between self-interest and others' interests, while individuals who are low in this dimension are less likely to conform with such contextual influences.

Proposition 9:

Collective identity orientation and prosocial personality moderates the impact of task interdependence, shared goals, selective recruitment, institutionalised socialisation and *collective incentive in such a way that the impact of contextual factors is stronger when these dispositions are strong.*

Second, I proposed task interdependence, depersonalised trust, incentive for collaborative behaviours, employment security and internal career opportunities promote GEO through promoting an expectation of future return. While generalised exchange inherently involves higher risks of non-reciprocation, these factors are expected to reduce the perceived risks and promote the expectation towards future return from transferring resources to others. I also propose two factors – proactive personality and future focus – as individual dispositions that moderate the influence of these contextual factors. The first factor is associated with individual propensity to take risks, and the other concerns the evaluation of future return.

As mentioned above, Chiaburu et al. (2011) referred to "proactive" tendencies as another fundamental dimension behind personality traits. This personality dimension is characterised by individual ascendency and dynamism (Saucier & Goldberg, 2003); getting ahead (Hogan & Holland, 2003); pursuit of agency, power and status (Paulhus & John, 1998); and dominance (Bakan, 1966; Wiggins, 1991). Digman (1997) argued that this dimension is associated with inclination toward growth and actualisation. Among the Big Five personality traits, extraversion, openness to experience and emotional stability are associated with this dimension (Digman, 1997). Individuals with this dimension take initiatives (Hogan, 1996) and experiment with new ways of doing things (Fuller & Marler, 2009). Nicholson, Soane, Fenton-O'Creevy and Willman (2005) found that extraversion, openness to experience and emotional stability are positively associated with risk-taking in various domains. Conversely, individuals who are low in this domain tend to be unassured in interpersonal relationships (Wiggins, 1991).

This evidence suggests that individuals with a strong tendency in this dimension accept risks in order to obtain personal gain. When exposed to contextual factors that reduce the risks of non-reciprocation and promote an expectation of future return, these individuals are more likely to engage in generalised exchange compared to those who are low in this dimension. Hence, these individuals are more likely to develop GEO under such circumstances.

Another dispositional factor that would moderate the impact of these contextual factors on GEO by promoting the expectation for future return is individuals' temporal focus towards the future. Time is an essential part of all human activities, including work (Shipp & Cole, 2015), and generalised exchange is no exception. Indeed, one receives a return from giving resources to others at some point in the future, but one cannot know when one will be reciprocated because of the implicit nature of generalised exchange (Inaba & Takahashi, 2012). Hence, individuals' temporal focus is likely to have an impact on GEO. Temporal focus refers to individuals' tendency to focus on either the past, present or future, and it influences their motivation through the evaluation of situations and choice of goals (Karniol & Ross, 1996; Shipp, Edwards & Lambert, 2009). For example, present focus directs individual attention to the present situation, and future focus directs attention to future situations (Shipp et al., 2009). Individuals with a strong future focus are found to be more likely to demonstrate altruism and courtesy—citizenship behaviours directed to other individuals—because such individuals are motivated by potential future returns from such behaviours rather than the cost that such behaviours incur now (Strobel, Tumasjan, Sporrle & Welpe, 2013). This suggests that individuals with a strong future focus are more likely to react to contextual factors that promote an expectation of future return from indirect reciprocation than those with other temporal focuses.

Proposition 10:

Proactive personality and future focus moderate the impact of contextual factors that promote GEO through increased expectation for return in the sense that the impact of contextual factors is stronger when these dispositional factors are strong.

2-5. Conclusion

This chapter establishes the theoretical foundation for the rest of this thesis. Generalised exchange has unique characteristics in terms of its structure, process, regulatory mechanisms and inherent risks. Research has suggested that generalised exchange takes place in and around organisations, and it has unique implications for individuals and organisations. Drawing on social exchange research in a wide range of social science disciplines, this chapter proposed the concept of GEO, discussed its impact on individual behaviours and its boundary conditions, and proposed contextual antecedents of GEO and how individual dispositions may moderate the impact of contextual antecedents. In the next section, I will present the research model that I examine through three empirical studies and present the research design of each study.

Chapter 3. Research Model and Research Design

Following the conceptual discussion in Chapter 2, this chapter will present the research model and research design for the empirical studies that I will conduct in the following chapters. In Chapter 2, I aimed to provide an overall, holistic picture of the nature of generalised exchange and GEO, including its consequences and antecedents. From here, I will focus on key factors in the conceptual discussion that require urgent empirical investigation. I investigate knowledge-sharing behaviours on an in-house online knowledge-exchange platform as consequences of GEO. As I mentioned in Chapter 1, organisations are increasingly introducing online platforms to facilitate flexible exchange of knowledge between employees across the entire organisation, and prior studies have found evidence to suggest that generalised exchange plays an important role in sustaining interactions on such platforms. By examining the impact of GEO on online knowledge-sharing behaviours, I aim to advance the current research on generalised exchange and to provide practical implications of interactions on in-house online platforms. Regarding antecedents, I focus on three proximal factors, which are categorised as job characteristics (task interdependence) and aspects of social environment (perceived shared goals and depersonalised trust). Among the contextual factors that I proposed in Chapter 2, job characteristics and social environment are more proximal to individuals than organisational practices, and therefore, they are ideal for the first step of empirical investigation into the influence of contextual factors on GEO.

In addition, whereas Chapter 2 solely focused on generalised exchange and GEO, in the following empirical studies I will consider NEO and REO along with GEO. This is because I expect them to have differential relationships with antecedents and consequences, and the three facets of SEOs are likely to jointly shape individuals' choice among the three regulatory mechanisms.

In the remainder of this chapter, I will first present the research model and discuss the choice of constructs and relationships that I include in the research model. I will leave the introduction of specific hypotheses to the following chapters in which they are tested. Then, I will explain the research design of the three empirical studies: scale development and validation (Chapter 4), antecedents of GEO (Chapter 5) and consequences of GEO (Chapter 6). Then, I will discuss quality issues in quantitative research and measures I implemented in order to ensure the trustworthiness of the findings from the following empirical studies. Finally, concluding remarks are stated.

3-1. Research model

Figure 3-1 illustrates the research model of the study, which consists of three categories of factors: (1) SEOs, (2) antecedents, and (3) consequences and boundary conditions. The grey boxes and thick arrows represent the main constructs and relationships of interest of this thesis, which include GEO and its relationships with antecedents and consequences. The white boxes and dotted arrows depict supplemental constructs and relationships that I take into account in order to highlight the unique nature of GEO. As I mentioned above, antecedents include task interdependence, perceived shared goals and depersonalised trust, and I chose knowledge-sharing behaviours in an in-house online knowledge-exchange platform as a consequence. The model also proposes two key moderators, organisational identification and interpersonal ties, for GEO and REO, respectively.

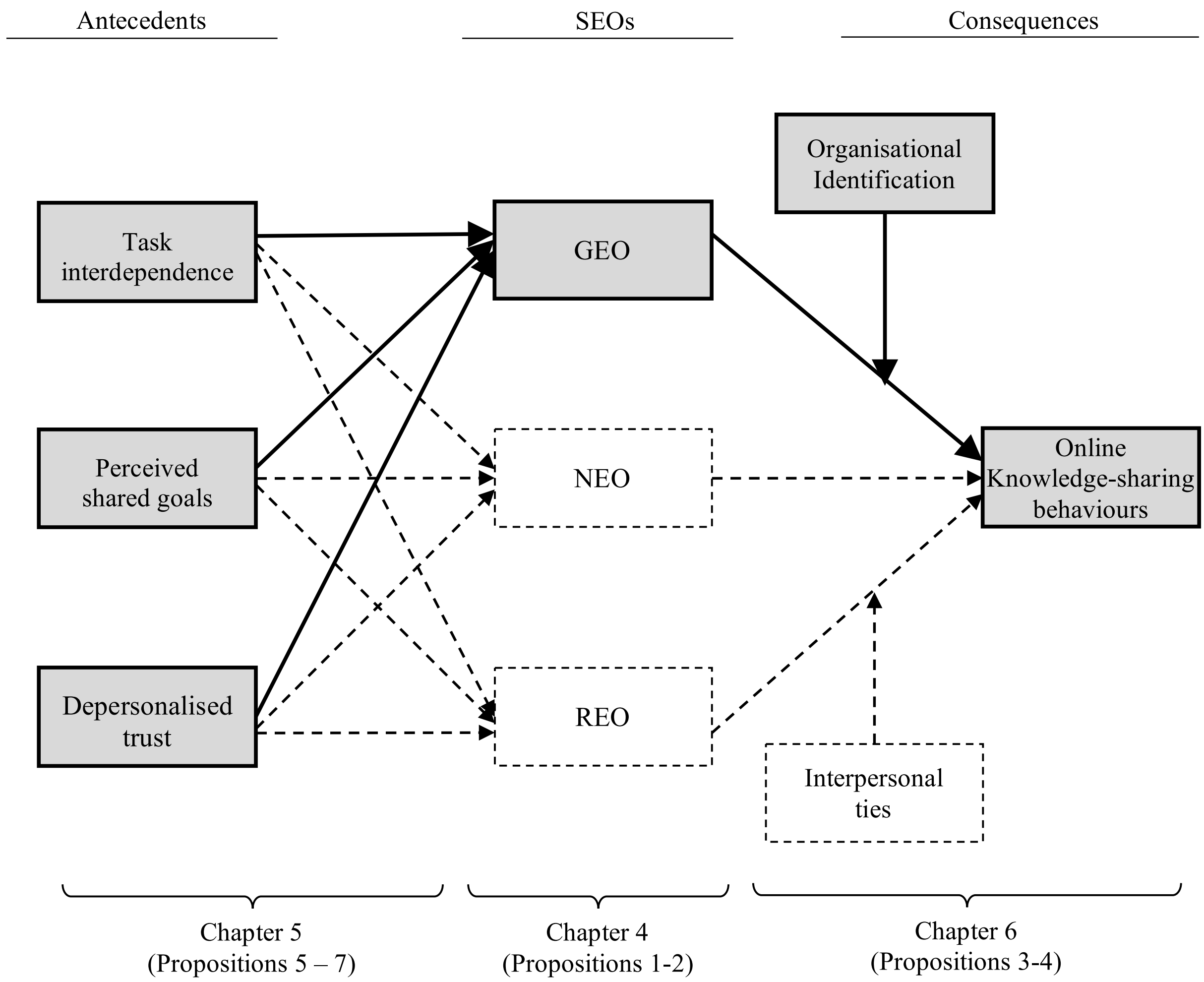


Figure 3-1: Research model of this thesis

3-1-1. GEO and other two facets of social exchange orientations

I include NEO and REO along with GEO in the research model for three reasons. First, it is important to examine whether GEO has unique relationships with antecedents and consequences which are distinct from the relationships that NEO and REO have with them. If GEO does not have unique relationships with antecedents and consequences, it would be of little value to conduct further research about GEO. As discussed in Chapter 2, the three constructs represent individual beliefs towards distinct regulating mechanisms of social exchange (***proposition 1***), and I expect each of these orientations to encourage individuals to apply a particular rule in their interactions with co-workers and direct them to different patterns of behaviours. In addition, as individuals develop these orientations through direct experience and observations of surrounding environment, it is likely that the development of the three orientations is associated with exposure to different kinds of environments. For example, while I proposed that the development of GEO is associated with depersonalised trust (***proposition*** *7*), that of REO is more likely to be associated with having trusting interpersonal relationships with a few co-workers (Flynn, 2005), and that of NEO might stem from exposure to a competitive work environment where individuals seek to take advantage of one another. Hence, it is important to examine whether the three facets of SEOs have differential relationships with individual performance as well as contextual antecedents. The distinctness of the three rules and corresponding orientations are a fundamental assumption in this thesis, and thus it is important to confirm it.

Second, individuals have a choice among three rules when they interact with others, and therefore, the three facets of SEOs are likely to jointly shape individual behaviours. Imagine a person with high levels of GEO as well as of REO. GEO would drive the person to apply the rule of collective reciprocity, while REO would motivate him/her to apply the norm or reciprocity to interactions in the workplace. Hence, an analysis of GEO's impact on individual behaviours without controlling for the effect of NEO and REO could be misleading and problematic. Furthermore, the relative strength of such effects might be moderated by other factors, which I will also investigate in this thesis (Chapter 6). It is particularly important to consider the three facets of SEOs together in investigating co-worker relationships between three or more individuals, where individuals can engage in either of the three forms of exchange, compared to vertical relationships such as employee–organisation and leader–member relationships, in which one can engage in either negotiated or reciprocal exchange.

Third, I am interested in identifying antecedents that uniquely promote GEO among the three facets of SEOs, because changes in the pattern of the three facets of SEOs are likely to result in changes in individual behaviours. For example, if a factor promotes only GEO, I expect it to shift the behaviour pattern of individuals towards generalised exchange from the other two forms of exchange. On the other hand, if a factor similarly promotes NEO, REO and GEO, I suspect it might not result in much change in the pattern of individual behaviours. Hence, it is important to evaluate the impact of proposed antecedents on NEO, REO and GEO and to examine whether they uniquely promote GEO. The identification of factors that uniquely promote GEO has important practical implications because such knowledge enables organisational intervention to promote employees' propensity towards generalised exchange, which will subsequently promote organisational social capital (Adler & Kwon, 2002; Baker & Dutton, 2007; Evans & Davis, 2005).

To my best knowledge, there exist no established scales for NEO and GEO. Although some studies have associated creditor ideology and reciprocity wariness with generalised exchange and negotiated exchange, respectively (e.g. Ballinger & Rockmann, 2010; Grant, 2013), the two constructs deal with individuals' beliefs about debt and credit in reciprocal exchange and do not concern individuals' beliefs about regulatory mechanisms in social exchange. Wu et al. (2006) developed scales that measure individual orientations to generalised, balanced and negative reciprocity (Sahlins, 1974) in the Chinese context. However, as I mentioned in Chapter 2, Sahlins's framework associates generalised exchange with pure concern with others' welfare and does not incorporate the differences in regulating mechanisms between the three forms of social exchange. Hence, the measure is not suitable for the purpose of this thesis.

In terms of REO, there are a couple of existing scales, including acceptance of the norm of reciprocity (Eisenberger et al., 1987), personal norm of reciprocity (Perugini et al., 2003) and positive and negative reciprocity norms (Eisenberger et al., 2004). However, these existing scales have two issues. First, they do not distinguish between work and nonwork contexts, and items of the personal norm of reciprocity and the positive and negative reciprocity norms include situations that are related to both work and nonwork relationships. This raises concern about the specificity of the scales because individuals show different degrees of propensity to reciprocal exchange between work and nonwork settings (Belmi & Pfeffer, 2015). Second, the scales include items that express exchange partner in plural terms (e.g. people, they), and therefore, it is not conceptually very clear whether the items distinguish individual exchange partners or treat them as a collective.

Therefore, in Chapter 4, I will develop new scales for GEO and NEO, and develop a modified scale for REO based on existing scales. I will examine whether the three facets of SEOs are empirically distinct with one another ***(proposition 1)*** and whether GEO is manifested by three lower-order factors that correspond to paying-it-forward, rewarding reputation and unilateral giving with expectation for indirect reciprocation ***(proposition 2)***.

3-1-2. Antecedents: task interdependence, perceived shared goals and depersonalised trust

The left side of the research model contains antecedents, which include task interdependence ***(proposition 5)***, perceived shared goals ***(proposition 6)*** and depersonalised trust ***(proposition 7)***. As discussed in Chapter 2, I expect prolonged exposure to a particular organisational context to lead to the development of beliefs that favour the rule and thus, promotion of GEO over time. In Chapter 5, I will conduct a preliminary test of the impact of the three contextual factors, using longitudinal data with two measurements over a one-year period. I call this a preliminary analysis because the number of measurements is not sufficient for a thorough examination of change (Chan, 1998; Ployhart & Vandenberg, 2010). The purpose of this analysis is to examine whether GEO and the other two facets of SEOs actually change over time, and if so, whether organisational context has a significant relationship with the changes.

The reason I focus on the three variables rather than examining the whole range of contextual variables that I proposed in Chapter 2 is two-fold. First, job characteristics and social environment are more proximal to individuals than organisational practices, and thus, they are likely to have a stronger and more direct impact on individuals' orientations. As this study is an initial investigation of the change in GEO, the urgent task is to examine whether contextual factors have any impact. Therefore, it is appropriate to focus on factors that are likely to have a direct effect on individuals. Organisational practices typically indirectly influence individual attitudes and behaviours through shaping the social environment of the organisation, such as its organisational climate and norms (Ostroff & Bowen, 2000). The impact of such practices depends on the effectiveness and consistency of implementation (Lawler, 2001), lack of which can lead to variation in interpretation of organisational context among individuals (House, Rousseau & Thomas-Hunt, 1995; Wright & Nishii, 2007). This has a significant implication in analysing changes in GEO. As discussed in Chapter 2, I expect changes in GEO to take place through cognitive processes such as generalisation of reaction to the surrounding context (Caspi et al., 2005), repeated activation of beliefs (Higgins, 1989; Higgins et al., 1982) and cognitive dissonance between one's beliefs and surrounding context (Desai et al., 2014). Therefore, the impact of organisational practices can be disturbed by the level of their implementation, and thus, even among individuals in an organisation, the outcome can vary significantly. In contrast, the impact of proximal factors, such as job characteristics and social environment, is more direct and less likely to be disturbed by other factors.

Second, the analyses of job characteristics / social environment and of organisational practices require different designs. Variation in job characteristics and social environment primarily exists at the individual level, and thus the analysis of the impact of these factors needs to take place at the individual level. On the other hand, variations in organisational practices primarily exist at the organisational level. Indeed, as I mentioned above, the implementation of organisational practices and resulting perception of these practices are likely to vary within an organisation. However, individuals are still exposed to the same set of practices. More significant variations in organisational practices reside between organisations which adopt different sets of organisational practices (e.g. an organization that has individual performance-based pay and another that has group performance-based pay). Hence, the analysis of organisational practices requires multilevel design, primarily focusing on organisation-level variation, while also considering individual-level variation. Given that this is the first attempt to investigate the impact of contextual factors on individual orientations to social exchange, we should first focus on an individual-level analysis and establish concrete evidence that supports the impact of contextual factors on individuals. This will provide a basis for the extension of the investigation toward a multilevel design.

Taken together, the three factors – task interdependence, shared goals and depersonalised trust – are most appropriate for this study. As I mentioned above, I will examine the relationships between these three variables and changes in GEO and compare them with their relationships with NEO and REO. This will provide foundational knowledge about the development of GEO, NEO and REO in relation to organisational context, which I hope will inform further investigation into the antecedents of GEO.

3-1-3. Consequences: online knowledge-sharing behaviours

As consequences of GEO, I will particularly focus on knowledge-sharing behaviours conducted on an in-house, online knowledge-exchange platform. Knowledge-sharing behaviours are considered an aspect of discretionary behaviours that benefit an organisation and its members (George & Brief, 1992; Organ, 1988; Williams & Anderson, 1991) and are widely studied in relation to social exchange theory (e.g. Bouty, 2000; Gong, Cheung, Wang & Huang, 2012). In-house online knowledge exchange platforms are similar to Internet-based, public platforms such as Q&A forums and bulletin boards (e.g. Yahoo! Answers and StataList, respectively), but the organisations that run such platforms typically allow access only to their employees. These platforms offer text-based, interactive communication functions that allow participants to share their knowledge in natural language, and they typically operate upon voluntary participation by employees (Hwang et al., 2015; Wasko & Faraj, 2005). Compared to other means of communication, these platforms are characterised by their openness: everyone can read other participants' messages and provide responses. Therefore, individuals can access the knowledge and expertise of other employees, even when they do not directly know them. The record of interactions is kept on the platform, and anybody can browse and search past interactions to learn from them.

Among various discretionary behaviours, I focus on knowledge-sharing behaviours on in-house online platforms for four reasons. First, recent studies have found evidence that generalised exchange plays a significant role in sustaining interactions on online platforms (Baker & Bulkley, 2014; Faraj & Johnson, 2011; Wu & Korfiatis, 2013). There are obstacles to reciprocal exchange to facilitate interactions on such platforms, because the platforms connect individuals who are not always familiar with one another and thus lack basis for mutual trust, and the openness of such platforms leads to prevalence of free-riders, who only acquire knowledge by reading others' conversations and do not contribute (Nonnecke &

Preece, 2000; Shachaf, 2009). The voluntary nature of participation and the low prospect for direct reciprocation make online platforms an ideal stage for testing the consequences of GEO, which I proposed to promote discretionary behaviours even when one cannot expect a reward or direct reciprocation ***(proposition 3)***.

Second, online platforms allow researchers to directly observe the flow of resources (i.e. knowledge) among individuals (who asks what, who answers what to whose questions and when these conversations happen), providing far more detailed information than a survey-based approach that uses supervisor ratings of individual performance. Although such an approach is good at capturing the overall pattern of individual behaviours, it abstracts individuals' behaviours over a period of time into a scale (e.g. task performance and OCB) and thus is not good at capturing details of behaviours. It is important for this study to capture detailed information about individual behaviours, because individuals interact with a large number of individuals, engaging in both reciprocal and generalised exchange. Hence, in order to understand the impact of GEO and the other two facets of SEOs, we need to disentangle the complex flow of resources among multiple individuals.

Third, unlike Internet-based platforms, in-house platforms allow investigation of the interplay between individual characteristics and organisational context. Internet-based platforms are typically open to anyone, and therefore, their participants engage in interactions with other participants without having much knowledge about the other participants (Faraj, Jarvenpaa & Majchrzak, 2011). On the other hand, in-house online platforms typically provide access only to employees, and thus users are not complete strangers to one another. Some of them are current or previous co-workers, and even when they have not met the other participants in person, they can see some basic information about other participants, such as their department, group affiliation and job title. Despite the claim that web-based technology connects individuals beyond boundaries and existing interpersonal ties, recent evidence suggests that the social structure of an organisation significantly affects interactions on in-house online platforms (Hwang et al., 2015).

Finally, organisations are increasingly introducing online platforms with the expectation that the openness of such platforms will help them promote flexible interaction across an entire organisation beyond internal boundaries and better utilisation of employees' expertise (McAfee, 2006; McKinsey & Company, 2013). However, it is also evident that introduction of such platforms does not promise the fulfilment of the aim of the organisation (Alavi & Leidner, 1999; Hislop, 2002; Orlikowski, 1996). Knowledge is considered a key intangible resource that organisations utilise to develop sustainable competitiveness (Grant, 1996), and knowledge-sharing – provision and receipt of organizational knowledge from one actor to another (Foss, Husted & Michailova, 2010; Szulanski, 1996) – has attracted significant attention in various areas of organisational research. It is considered to play an important role in facilitating absorptive capacity (Cohen & Levinthal, 1990), knowledge integration and creation (Nonaka & Takeuchi, 1995), organisational learning (Argote, 2012; Bunderson & Reagans, 2011) and problem solving (Levine & Prietula, 2012; Nickerson & Zenger, 2004). Ultimately, it is associated with an organisation's ability to adapt to a changing environment (Grant, 1996) and thus performance (Hansen, 2002). Hence, there are significant potential practical implications in investigating the impact of individual orientations towards online knowledge-sharing behaviours. All in all, these characteristics make online knowledge-sharing behaviours ideal for examining the consequences of GEO in the organisational context.

As described in Figure 3-1, I will examine the direct effect of GEO ***(proposition 3)*** and the other two facets of SEOs on online knowledge behaviours. In addition, I will also examine boundary conditions for GEO and REO. First, as discussed in Chapter 2, I expect individuals' identification pattern to shape the boundary of GEO. Individuals are more likely to apply the rule of collective reciprocity when they interact with individuals whom they consider members of a collective to which they have strong identification, and they are not likely to apply the rule of collective reciprocity to anyone whom they consider outside the group, even when they have strong GEO ***(proposition 4)***. An in-house, online knowledge-exchange platform is typically designed to facilitate knowledge exchange across an entire organisation. Hence, identification with the entire organisation is likely to work as a moderator for the impact of GEO on online knowledge-sharing behaviours. Second, prior findings from studies of individual orientation in favour of the norm of reciprocity (Wasko & Faraj, 2005), imply that REO is likely to have a negative impact on knowledge-sharing behaviours on online platforms, while REO also encourages individuals to demonstrate discretionary behaviours towards an exchange partner who has treated them favourably (Coyle-Shapiro & Neuman, 2004; Eisenberger et al., 2001; Gallucci & Perugini, 2003; Witt et al., 2001). This suggests a clear difference in boundary conditions for GEO and REO. Hence, the investigation of boundary conditions is an important test of the unique role that GEO plays in regulating individual social exchange behaviours. Lastly, I do not examine boundary conditions for NEO. This is because NEO is likely to discourage individuals from discretionary behaviours unless they formally negotiate with potential exchange partners and ensure an attractive return for their behaviours. Such negotiation is not likely to happen on in-house online platforms, and thus NEO is likely to have a uniformly negative effect on knowledge-sharing behaviours.

3-2. Research design

Drawing on the research model, I will introduce the research design of the empirical studies. Following the common approach in social exchange studies in the OB literature, I adopt quantitative methods to collect and analyse data. The qualitative approach allows identification of patterns in organisational behaviours, although it has limitations in capturing subtle individual differences (Robson, 2011b). The empirical studies of this thesis aim to examine the pattern of relationships between GEO and its antecedents and consequences based on the theory I developed in Chapter 2. Therefore, a quantitative approach is suitable for this thesis. I base my approach on the post-positivist view of social science research, which considers social science research as an endeavour to develop statements that explain social phenomena of interest through collecting and analysing evidence in a way that reduces potential bias, while recognising limitations in research evidence and resulting knowledge (Phillips & Burbules, 2000; Reichardt & Rallis, 1994). Although I recognise that it is often difficult to completely control the research context and eliminate the sources of potential bias in research in real-life settings where a randomised experimental design is not really applicable (Robson, 2011a), I aim to make the best possible effort to ensure the trustworthiness of the findings through the research design.

I will conduct three empirical studies that correspond to the three components of the research model. First, in Chapter 4, I will develop and validate scales for measuring GEO, NEO and REO. Second, in Chapter 5, I will investigate the impact of organisational context on GEO and the other two facets of SEOs. Finally, in Chapter 6, I will examine the impact of SEOs on online knowledge-sharing behaviours and their boundary conditions.

3-2-1. Chapter 4. Scale development and validation

In order to ensure trustworthiness in any quantitative study, it is essential to establish valid measurement instruments to capture the constructs of interest (Cronbach, 1960). As we do not have established scales for SEOs, the first step of the empirical studies in this thesis is to develop and validate scales for these constructs. In order to achieve this goal, I followed the procedure proposed by DeVellis (2011), which consists of item generation and refinement, examination of factor structure and evaluation of the validity of the new scales. In addition, I examine the measurement invariance of the new scales between two societal contexts, namely the US and Japan, in order to ensure that the newly established scales are usable in the latter, where the remainder of the empirical studies are conducted.

I conducted five stages of analyses. First, I developed an item pool for the new scales based on relevant literature and interviews with 15 individuals in the United Kingdom (UK), while the items for REO were taken from existing scales (Eisenberger et al., 1987; Eisenberger et al., 2004) and modified. Then, their content validity was examined by the sorting method (Anderson & Gerbing, 1991), a quantitative approach to evaluate content validity, carried out by 14 researchers at LSE who have expertise in OB and related fields. The survey was administered on an online survey platform, Qualtrics, which is an official online platform at the London School of Economics and Political Science (the following surveys are all administered on this platform unless mentioned). Second, the factor structure of the new scales was examined by a series of explanatory factor analyses (EFAs) with a dataset (n = 200), which I collected in the US through Amazon's Mechanical Turk platform (Mturk). Mturk is an ideal platform for collecting data for scale validation study, as multiple studies have shown it is a reliable source of data (Buhrmester, Kwang & Gosling, 2011; Mason & Suri, 2012; Rand, 2012) and it allows to acquire responses from a more diverse population than other approaches, such as collecting data in one or several organisations. Third, I collected another dataset in the US through Mturk (n = 300) and conducted a series of confirmatory factor analyses (CFAs) to confirm the two-order structure of the new scales and distinctness of the new scales from one another and from creditor ideology and reciprocity wariness, two widely used measures of individual orientations. I also examined the nomological validity of the new scales with this dataset by analysing their relationships with theoretically relevant established scales. Fourth, in order to examine the measurement invariance, I collect another dataset (n=300) in Japan through a marketing survey company, which also enabled me to collect data from a diverse population in the country. I analyse this dataset with the one I collected in the US for the third stage, employing a CFA-based approach of a measurement invariance test (Chen, Sousa & West, 2005; Cheung & Rensvold, 2002; Vandenberg & Lance, 2000) in order to examine configural invariance (whether the scale structure is invariant across contexts), metric invariance (whether the factor loadings are invariant) and scalar invariance (whether the intercepts are invariant) of the new scales. Finally, incremental validity (whether new variables provide additional explanations beyond existing measures) was tested by evaluating the relationships between the new scales and task performance, OCB-I and OCB-O, controlling for creditor ideology and reciprocity wariness. This stage adopts a multi-source design using data collected by self-report and supervisor rating (n=439). Because I also collected data for Chapter 5 at the same time, more details about the data collection procedure will be provided in the next section. I asked employees to answer about their SEOs, creditor ideology, reciprocity wariness and control variables, and I also asked their supervisors to rate employees' task performance, OCB-I and OCB-O. A large HRM professional service firm in Japan granted access, and its front-line employees and their supervisors participated in the survey. As each supervisor often rates multiple employees, the analysis adopts a mixed-model linear regression analysis in order to account for the nested nature of the outcome variables. This stage provides a particularly robust test for the validity of the new scales because it is free from the problems of common-method variance. Table 3-1 summarizes the key components of the research design in Chapter 4.

Table 3-1. Summary of research design in Chapter 4.

	Stage 1		Stage 2	Stage 3	Stage 4	Stage5
Purpose	• Item development and refinement		• Factor analysis	• Psychometric Analysis	• Measurement invariance	• Incremental validity
Participants	(Interviews) • 15 business people in the UK	(Content validation) • 14 researchers at LSE (in the UK)	• 200 individuals in the US • Recruited through Mturk	• 300 individuals in the US • Recruited through Mturk	• 300 individuals in Japan • Recruited through a marketing survey company • 300 individuals in the US (Collected in Stage 3)	• 439 employee-supervisor dyads in Japan • Employees of a large HRM professional firm
Data collection method	• Semi-structured interview • 30–60 minutes per person	• Online survey	• Online survey • Cross-sectional • Self-report	• Online survey • Cross-sectional • Self-report	• Online survey • Cross-sectional • Self-report	• Online survey • Cross-sectional • Self-report and supervisor rating
Analysis	• N/A	• Sorting method	• EFA	• CFA	• CFA	• Mixed-model linear regression
Variables	• SEO variables	• SEO variables	• SEO variables	• SEO variables • Creditor ideology, reciprocity wariness, agreeableness, Machiavellianism, neuroticism, trust, social desirability scale	• SEO variables	(Employee self-report) • SEO variables • Creditor ideology and reciprocity wariness (Supervisor rating) • Task performance, OCB-I and OCB-O

3-2-2. Chapter 5. Antecedents of GEO

Chapter 5 aims to provide a preliminary test of the proposed impact of contextual factors (task interdependence, perceived shared goals and depersonalised trust) on GEO and their impacts on the other two facets of SEOs. This study is based on panel data measuring both antecedents and outcome variables twice in a one-year interval. This approach is advantageous to lagged design, in which antecedents and outcome variables are measured separately at different time points, because this approach allows control of the initial level of the outcome of interest in estimating the relationships between the antecedents and the outcome, as well as ruling out reverse causality (Cole & Maxwell, 2003; Parker, Andrei & Li, 2014).

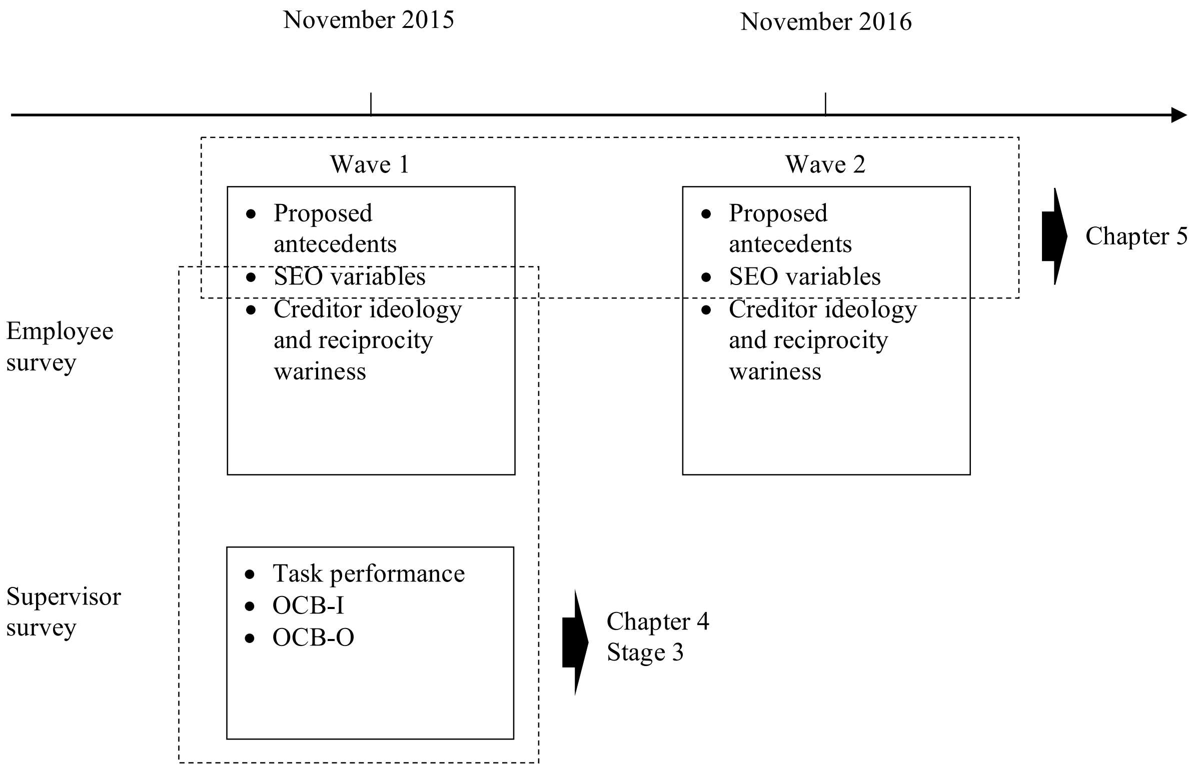


Figure 3-2. Illustration of data collection methods for Chapter 4 Stage 4 and Chapter 5

As described in Figure 3-2, I collected the first wave of surveys for this study along with the employee data for Stage 3 of Chapter 4. The survey includes variables for both studies, and the data are combined with responses to other surveys. In the case of Stage 3 of Chapter 4, the data are combined with the responses from supervisors. In Chapter 5, I combine the data with responses to the second wave of surveys, which took place in November 2016. I chose an online survey because it is cost-effective and less prone to human errors than the paper-and-pencil approach, and the employees of the organisation are familiar with online surveys. The one-year interval was chosen based on prior studies that investigated changes in individual beliefs and other individual characteristics that were previously thought to be stable (e.g. personality traits) (Boyce et al., 2015; e.g. Burkhardt, 1994; Desai et al., 2014; e.g. Frese et al., 1996; Li et al., 2014; Rousseau, 1989). Such studies typically use one-year intervals between multiple waves of surveys. In addition, I expected one year not to be too long for avoiding substantial changes in organisational context that might significantly affect the findings. Interviews with several senior managers of the organisation confirmed that there were no major organisational interventions during the observation period. Finally, by conducting the surveys at the same time of year, I expected to prevent the survey responses from being influenced by regular periodical organisational events, such as formal performance evaluations and large-scale entry of new university graduates into the organisation (which is typical in Japanese employment practices).

The analysis includes two steps. First, I examine longitudinal measurement invariance by a series of CFAs to make sure the measurement of antecedents and outcome variables are invariant across time. Second, the hypothesised relationships and reverse causal relationships are tested by cross-lagged panel models in a structural equation modelling (SEM) framework (Cole & Maxwell, 2003; Little, 2013).

Before moving into an explanation of the design of Chapter 6, I would like to mention why I conducted separate studies to analyse antecedents of GEO and its consequences. It is because of the difference in the interests and the time frame between the right and left sides of the research model. As discussed in Chapter 2, I assume GEO and the other two facets of SEOs to be stable but malleable, although the changes would take a considerable period of time. The left side of the research model is focused on GEO and the other two facets of SEOs as malleable constructs which are shaped by prolonged exposure to a certain organisational context; therefore, the empirical study was expected to take a longer period of time. As I mentioned above, findings from prior studies of changes in individual beliefs suggest that such changes typically take place over the course of a year or more (e.g. Burkhardt, 1994; Desai et al., 2014; Rousseau, 1989). On the other hand, the right side of the model is focused on GEO and the other two facets of SEOs as stable individual characteristics that create a consistent pattern of behaviours across various social exchange occasions; hence, empirical examination of this part was expected to take a relatively limited period of time, such as weeks to months. In order to accommodate these differences, I will separately analyse the antecedents and consequences of GEO.

3-2-3. Chapter 6: Consequences of GEO

The final chapter of the empirical studies analyses the impact of SEOs on knowledge-sharing behaviours on an online knowledge exchange platform and the boundary conditions for REO and GEO. This study takes place in another Japanese HR professional service company that provides training and consulting services with approximately 400 employees at eight offices in large cities in Japan. This company operates an online knowledge exchange platform, which is similar to Q&A websites on the Internet, in order to promote exchange of knowledge among employees beyond organisational and geographical boundaries. It runs the platform based on voluntary participation by employees and does not provide rewards for contributions to the platform. Hence, it offers an ideal environment to test whether GEO promotes discretionary behaviours even when there is little expectation for reward and direct reciprocation. Data were collected from three sources: (1) survey responses (n=111), (2) personnel data obtained from the HR department of the company and (3) log data of knowledge-sharing behaviours on the platform for six months before and after the survey. The survey was used to collect data about SEOs, organisational identification and demographic variables of the participants. The survey was administered on an online survey platform that the organisation uses as its standard platform. The personnel data include records of employees' affiliation to the company's offices, which I used to operationalise interpersonal ties. The company regularly rotates employees, and the record allowed me to identify employees who had worked in the same office before but were not working there during the observation period. The log data provide detailed information about participants' activities, such as accessing the platform, posting requests, and responding to other participants' requests. I considered the six months after the survey as the observation period and used information about activities before that period to operationalise the control variables representing the interaction history among participants. Table 3-2 summarises the data collection methods and how I used the data.

Table 3-2. Summary of data collection methods in Chapter 6.

Data source	Timing of data collection	Data coverage	Data collection method	Variables
Survey	October 2015	N/A	• Online survey • Self-report	• SEO variables • Organisational identification • Demographic variables
Personnel data	April 2016	October 2014 – March 2016 • Observation period + 1 year before then	• Obtained from HR • These data contain employees' location during the observation period and for one year before the period	• Boundary-spanning interpersonal ties
Log data of knowledge-exchange platform	April 2016	April 2015 – March 2016 • Observation period + 6 months before then	• Obtained from a manager in charge of the platform • Detailed information about individuals' activities (access, interactions) on the platform • The data about activities before the observation period were used to calculate control variables	• Outcome variable (response / non-response) • Control variables representing user activity and interaction on the platform

I use logistic regression to analyse the data and treat each response occasion as one unit of analysis, following prior studies that analysed similar data (Baker & Bulkley, 2014; Jensen, 2003; Sorenson & Stuart, 2001). This approach estimates the relationships between individual characteristics, such as GEO, and the probability of responses to each question posted on the platform. During the observation period, there were 108 questions posted on the platform. As the platform does not have a limitation to the number of responses to a question, every participant except for the one who posted the question has a chance to respond to the question. Hence, there were approximately 12,000 response occasions (≒108 * (111-1)) during the observation period. There were 270 responses in total, which means each question received 2.5 responses on average, and the average response rate was 2.26%. Such a low probability of events can cause underestimation of standard errors in logistic regression (Baker & Bulkley, 2014); therefore, I used rare-event logistic regression, which generates robust standard errors for rare events (King & Zeng, 2001).

This logistic regression approach has an advantage over an alternative, the linear regression approach with a continuous dependent variable – such as the total number of responses that each participant provided during the observation period (cf. Wasko & Faraj, 2005) – in analysing a complex flow of resources that involve both reciprocal and generalised exchange. The current approach allows for distinguishing behaviours towards different targets on different occasions and controlling for the impact of target-specific and occasion-specific factors on the probability of responses. For example, a participant might interact with current co-workers in the same team, those with whom he/she has worked before and those with whom he/she has never interacted before. I expected such interpersonal relationships to moderate the impact of REO. In addition, one might respond to a participant after receiving a response to his/her question from the participant (direct reciprocation), after observing the participant providing responses to questions by other participants (rewarding reputation) or after receiving responses from other participants (paying-it-forward). By treating each response occasion as a distinct unit of analysis, I can control for the impact of these factors in the analysis. On the other hand, the use of the total number of responses might lead the potential impact of such target- and occasion-specific factors on individual behaviours to confound the relationships between variables of interest.

More generally, this is the advantage of the design of this study over the survey-based design typically used in social exchange research, in which researchers capture individual behaviours based on behavioural scales (e.g. OCBs) through supervisor rating and analyse the data with linear regression. Indeed, that approach has the advantage of capturing the overall pattern of individual behaviours across various situations in the workplace. However, it has a limitation in its ability to disentangle complex interactions among multiple individuals, which is essential to examining generalised exchange.

3-3. Quality of quantitative research: validity, reliability and generalisability

There are three fundamental issues in establishing trustworthiness in quantitative research – namely validity, reliability and generalisability (Robson, 2011b). Validity refers to the extent to which the results accurately reflect the phenomenon of interest, and reliability refers to the stability and consistency in the measurement. Generalisability refers to the extent to which the findings are generally applicable in other contexts or groups of people. In addition, Robson (2011b) points out another issue regarding the trustworthiness of quantitative research, namely credibility. In this section, I reflect on the actions that are taken to ensure validity and reliability in the following empirical studies and comment on potential issues in generalising the findings from them.

First, in terms of validity, one needs to establish the validity of measurement and validity of relationships that is indicated in the results (Robson, 2011b). In order to ensure the validity of measurement, which refers to whether the scales measure what I intend to measure, I conducted a thorough test of measurement instruments of SEOs in Chapter 4, applying a well-established procedure in scale development and validation (DeVellis, 2011). As I discussed above, I tested the content, nomological and incremental validity of the scales that I used to measure GEO and the other two facets of SEOs. In addition, I used well-established scales for the other constructs that I measured in the empirical studies. Regarding the validity of the findings, I implemented several procedures to support causal inference based on the data, although there were limitations because of the lack of randomised control. First, I used a multi-source design in collecting data, particularly in Chapter 5 and 6 and partly in Chapter 4, in order to minimize the influence of common method variance (Podsakoff, MacKenzie, Lee

& Podsakoff, 2003). Second, in the analysis of antecedents in Chapter 5, I adopted a longitudinal panel design, which has advantages such as control of the initial state of the outcome variables and ruling out reverse causation (Parker et al., 2014). Third, while I did not adopt a longitudinal panel design in Chapter 6, I made sure the dependent variable (knowledge-sharing behaviours) was measured after the measurement of GEO and other independent variables (Holland, 1986; Sobel, 1990). Fourth, I conducted a thorough response check in Chapter 5 and 6 in order to prevent the data collection process from distorting the response pattern and potentially influencing the findings. Finally, I confirmed that there were no significant organisational interventions or other events that might potentially influence the findings of the studies during the observation period by interviews with senior managers in the companies that participated in the studies.

Second, in terms of reliability, I consistently used scales with multiple indicators and ensured that the scales had sufficient reliability by examining their internal consistency by calculating Cronbach's alpha (Cronbach, 1951). Indeed, there have been some criticisms of Cronbach's alpha as a measure of reliability. For example, Sijtsma (2009) points out that evaluation of the reliability of a set of items requires examination of factor structure, and the use of Cronbach's alpha is too simplistic. However, I used Cronbach's alpha as an indicator of reliability because it shows the lower bound of the internal consistency of a scale, and thus it is appropriate for a conservative test of reliability (DeVellis, 2011).

The third aspect, generalisability, is also referred to as external validity. A common concern about the generalisability of research findings is that the findings might be specific to the group under study and its history or the context in which the group is situated; in addition, the use of constructs that are specific to the group or context also causes problems in the generalisability of findings (LeCompte & Goetz, 1982). Regarding the choice of participants and their history and context, Chapter 4 has two clear advantages. First, it utilises Mturk and a marketing research company in Japan as channels of data collection, and they allow access to individuals with diverse backgrounds. Second, it tests the scale in two countries, the US and Japan, which have quite different societal characteristics in terms of culture (e.g. Hofstede, Hofstede & Minkov, 2010; House, Hanges, Javidan, Dorfman & Gupta, 2004), employment-related institutions (e.g. Hall & Soskice, 2001; Marsden, 1999) and language (Dow & Karunaratna, 2006). Of course, it does not ensure the applicability of the new scales beyond the two countries; however, the study certainly goes beyond scale development studies that only test the validity of their scales in a single society, typically an Anglophone country. In terms of Chapter 5 and 6, I conducted preparatory interviews with senior managers and HR managers of the organisations and did not find any specific features that might make the findings specific to those particular organisations. One potential issue is that the two organisations both implement many of the organisational practices that I proposed as contextual antecedents of GEO in Chapter 2. However, these practices are all well studied in the HRM literature and in fact, they are often considered components of high-performance work practices, one of the most widely studied concepts in the HRM literature (cf. Posthuma, Campion, Masimova & Campion, 2013). Hence, it is not a major obstacle to the generalisability of the findings. The other potential issue is the location of the organisations, Japan. Prior literature suggests individuals in collectivistic societies tend to show a stronger tendency to engage in reciprocal exchange (Dulebohn et al., 2012; Ravlin, Liao, Morrell, Au & Thomas, 2012) and generalised exchange (Flynn, 2005). I acknowledge this is a potential obstacle to the generalisability of the findings from Chapter 5 and 6, and I will revisit this limitation in Chapter 7. In terms of the constructs I use in the following studies, they are all well established and widely used in the literature, except for GEO, NEO and REO, the new constructs that I introduce in this thesis. The definitions of the new constructs are based on well-established research of social exchange, and their definitions include nothing specific to the research context of the following empirical studies. Hence, there is little problem of generalisability in terms of the choice of constructs.

Fourth, credibility refers to the extent to which the details of the procedure to produce the evidence are communicated. Shipman (1997) pointed out that if sufficient information is not provided on such details, readers of a research paper cannot properly assess the validity, reliability and generalisability of the research; therefore, credibility is the basis for the trustworthiness of any research. Robson (2011b) recommended that authors disclose as many details as possible so readers could replicate the same study. Following this recommendation, I provide as much detail as possible about the procedures of data collection and analysis throughout this thesis.

3-4. Conclusion

In this chapter, I presented the research model for empirical studies of this thesis and introduced the overview of research design of the three empirical studies. These studies aim to (1) establish a set of measurement instruments for GEO and the other two facets of SEOs and examine (2) the antecedents and (3) consequences of GEO. While the discussion in Chapter 2 aimed to provide a large, holistic conceptual view of generalised exchange and GEO, the research model focuses on key issues that are essential to advancing our understanding of generalised exchange and GEO. In addition, while GEO is the central interest of this thesis, I will analyse NEO and REO along with GEO throughout the remainder of the thesis. This is important because individuals have a choice between the three different rules and norms of social exchange, and I expect the three facets of SEOs to jointly shape patterns of individual behaviour in social exchange situations.

I apply post-positivist assumptions in conducting social science research and use quantitative methods in collecting and analysing the data. This approach requires careful design of the studies so that researchers can avoid possible biases that could damage the trustworthiness of the findings. As I discussed in the latter half of this chapter, I implement a number of measures, such as the use of established measures, check for potential response bias, employment of multiple data sources where possible and adoption of rigorous analytical procedures, in order to ensure high levels of validity, reliability and generalisability of the findings and credibility of the procedure to produce them. Now, it is time to begin the empirical investigations. In the next section, I develop and validate the instruments for measuring the three facets of SEOs.

Chapter 4. Scale Development and Validation

In this chapter, I develop and validate measurement scales for the three facets of SEOs. As I mentioned in Chapter 3, the establishment of valid measurement instruments is critical in ensuring the trustworthiness of quantitative research (Cronbach, 1960; Cronbach & Meehl, 1955); therefore, this chapter sets a foundation for the empirical studies shown in the following chapters. Drawing on the procedure proposed by DeVellis (2011), I first develop and refine items, evaluate the factor structure and then examine the nomological validity of the new scale. Then, I conduct a measurement invariance analysis of the new scales between the US and Japan. Finally, I examine the incremental validity of the scale by analysing whether the new scales provide an additional explanation for the individual work performance beyond existing measures of social exchange orientation, such as reciprocity wariness and creditor ideology. This study utilises five datasets collected in the UK, the US and Japan from 1268 participants.

4-1. Stage 1: item generation and refinement

4-1-1. Item generation

As discussed in Chapter 2, I expected individuals to have three distinct orientations towards the three forms of exchange (GEO, NEO and REO). In addition, I expected the construct of GEO to be manifested by three lower-order constructs. Individuals who follow the rule of collective reciprocity will demonstrate three types of behaviours: unilateral giving with expectations for indirect reciprocation (UGI), paying-it-forward (PIF) and rewarding reputation (RWR). Prior researchers have treated these three behaviours as distinct mechanisms that regulate generalised exchange (Baker & Bulkley, 2014; Nowak & Roch, 2007; Takahashi, 2000; Westphal et al., 2012; Yamagishi et al., 1999), and as illustrated in

Figure 2-1, the ways resources flow among multiple actors are quite different from one another. In addition, Westphal et al. (2012) report that the participants in their study told of behaviours that fit with PIF and those that fit with RWR as distinct behavioural episodes. Drawing on these pieces of evidence, I predicted that individuals have three distinct orientations towards the three types of behaviours. Table 4-1 summarizes the definitions of these constructs.

Table 4-1: Definitions of GEO, NEO and REO and lower-order constructs of GEO

Construct	Definition
GEO	Individuals' beliefs in favour of the rule of collective reciprocity in interactions with other individuals in the workplace.
NEO	Individuals' beliefs in favour of having explicit negotiations about the terms of exchange in interactions with other individuals in the workplace.
REO	Individuals' beliefs in favour of the norm of reciprocity in interactions with other individuals in the workplace.
	Lower-order constructs of GEO
UGI	Individuals' beliefs in favour of unilateral giving of resources in interactions with other individuals in the workplace, while expecting for indirect reciprocation.
PIF	Individuals' beliefs in favour of giving resources to other individuals when they receive resources from someone in the workplace.
RWR	Individuals' beliefs in favour of rewarding a person who unilaterally gives resources to others in the workplace by giving resources.

To generate item pools for five constructs (NEO, REO, UGI, PIF and RWR), I employed a mixed method for item generation, which is a mix of deductive generations of items based on the conceptual definition of constructs and the inductive generation of items, using a qualitative "bottom-up" approach (Gibney, Zagenczyk & Masters, 2009; Hinkin, 1995, 1998). This approach is recommended when the researcher has a theoretically-grounded conceptual definition but has limited working knowledge of the subject. This approach is relevant for the development of items for constructs of SEOs (except for REO) because they have concrete theoretical bases but have not been empirically examined much.

For NEO, UGI, PIF and RWR, I collected episodes of negotiated and generalised exchange relationships from empirical studies and interviews. First, empirical studies of these exchange relationships in organisational and similar settings were consulted (Shibayama et al., 2012; Westphal et al., 2012). For example, Westphal et al. (2012) provided detailed accounts of both paying-it-forward and rewarding reputation behaviours by CEOs of large US firms. In terms of interviews, I contacted 15 professionals in the UK in various industries (e.g. banking, manufacturing, consulting) with substantial work experiences (average tenure = 8.7 years; gender = 67% male; 33% female). They were given conceptual definitions of the five constructs (NEO, REO, UGI, PIF and RWR) and asked to give episodes of different types of exchanges in their work experiences. The responses about REO were not used, but I included the construct in the interview because a reciprocal exchange is a widely recognised form of exchange and therefore, I suspected it would look odd to participants if I excluded it.

Items for REO are adopted and modified from two existing measures of individuals' orientation in favour of the norm of reciprocity – reciprocity norm acceptance (Eisenberger et al., 1987) and positive reciprocity norm (Eisenberger et al., 2004). Modification was done in two respects. First, some original items involve ambiguity in matching between the actor who gives benefits and who receives reciprocation (e.g. "If <u>someone</u> does something for me, I feel required to do something for <u>them</u>", emphasis added by the author). I changed the words to clarify that the same actor is the target of the reciprocation (e.g. "If <u>someone</u> does something for me, I feel required to do something for <u>him/her</u>"). Second, I specify that the question concerns interactions at work, reflecting the assumption discussed above. Items that concern situations unrelated to the work setting are not included.

This resulted in a list of 40 items, with eight items in each of the five constructs. Before conducting further study, items were refined in terms of wording and clarity of expression through consultations with three researchers with training in psychology and organisational behaviour.

4-1-2. Content validity

Next, I examined the content validity of the generated items, employing the sorting method developed by Anderson and Gerbing (1991). Content validity refers to the extent to which the items of a scale reflect the construct domain of interest (DeVellis, 2011). The scaling method asks participants to match construct definitions and scale items and to examine the levels of agreement between their choices and the intended scale structure. Quantifying the levels of agreement allows researchers to statistically analyse the construct validity of the scale items. I did not use the rating method (Hinkin & Tracey, 1999) because of concerns about participant fatigue. This alternative quantitative approach to evaluate content validity asks participants to evaluate to what extent each item fits with the definition(s) of intended construct(s). As I had five constructs and 40 items, participants needed to answer 200 questions (i.e., 40 items x 5 definitions), which is a much larger number than the 40 questions required by the sorting method.

4-1-3. Participants and procedure

The survey was administered on Qualtrics, an online survey platform. Participants were given definitions of constructs and a list of survey items without information about the correspondence between the constructs and items, and they were asked to categorise each item to one of constructs that they consider to be best captured by the item. To prevent the order of items from influencing the responses, items were randomly displayed for each participant. I invited 20 researchers who have received academic training in OB or related fields to the survey via email, and 14 responded (response rate = 70%).

To evaluate the content validity, I calculated two indices for each of the 40 items: proportion of substantive agreement (P_{SA}) and substantive validity coefficient (C_{SV}). The former (P_{SA}) represents the proportion of participants who assigned the item to the intended category. It is calculated as follows:

$$P_{SA} = \frac{n_c}{N}$$

where N is the total number of respondents and n_c is the number of respondents who assigned the item to the intended construct. The possible range of P_{SA} is from 0 to 1, and the larger score indicates better consistency between the content of the item and the definition of the construct. The latter (C_{SV}) represents the degree to which respondents associate the item to the posited construct above any of the other constructs. It is calculated by the following formula:

$$C_{SV} = \frac{n_c - n_o}{N}$$

where n_c denotes the number of respondents who assigned the item to the intended construct, n_o is the highest number of responses that assign the item to any other construct, and N represents the total number of respondents. C_{SV} can range from -1 to 1, with positive scores indicating the respondents assigned the item to the posited construct more than any other constructs, and negative scores indicating they associated the item to one of the other constructs more than the intended construct. Anderson and Gerbing (1991) propose a method to test whether an item is tapping one construct significantly more than any other constructs by performing a binomial test with the null hypothesis:

$$H_0 : P(a) \geq .5$$

where P (a) denotes the probability of an item's being assigned to the intended construct.

4-1-4. Results

P_{SA} was above .5 for all items, indicating the majority of respondents categorised all items to the corresponding definition of the constructs. In terms of C_{SV}, 38 items showed scores equal to or above .5, indicating participants categorised them to the intended construct considerably more than any other constructs. C_{SV} scores for the remaining two items (REC2 and PIF2) were .14, suggesting they did not clearly tap the intended construct. The binominal test confirmed this interpretation. The results of the test for the two items (REC2 and PIF2) were non-significant ($p > .1$), while other items were all significant ($p < .05$). Overall, the results indicated that 38 items out of 40 items reasonably tap the content domain of the intended construct.

4-2. Stage 2: factor structure

I next examined the factor structure of SEOs and further refined the list of items through explanatory factor analysis. Two items that failed to show content validity in Study 1 were removed, and the remaining 38 items were examined.

4-2-1. Participants and procedure

Participants were recruited from the Amazon Mechanical Turk (Mturk) platform. Mturk is an online marketplace for those who want people to perform small tasks (requestors) and those who want to earn money by conducting tasks (workers). Recently, a number of studies (Buhrmester et al., 2011; Mason & Suri, 2012; Rand, 2012) have pointed out that Mturk is a reliable source for data collection. An advantage of using Mturk in scale validation is that it allows for the collecting of responses from individuals of diverse backgrounds, unlike collecting data from a particular organisation. This enables researchers to assess the validity of the new measures towards a wider population. Prior research suggests Mturk's participants in the US are relatively representative of US Internet users: They are younger and include more females and people belonging to lower income groups as well as racial and geographical compositions that are similar to the population of Internet users (Ipeirotis, 2010a). These users' motivation to participate in Mturk is also diverse: some use it as primary source of income, while some use it to supplement their primary income and others use it as a fruitful way to spend free time instead of watching TV (Ipeirotis, 2010a). The platform provides some quality assurance mechanisms through which requestors incentivise workers to conduct tasks decently. First, the workers can only receive the fee after the requestors accept the quality of their work. Second, requestors can select workers based on their evaluations from prior requestors. Each requestor can decide whether the work of the Mturk worker is acceptable, and the system records the total number of tasks that each worker has completed and his/her acceptance rate.

The survey was administered on Qualtrics, an online survey platform, and the task to answer the survey was published on the Mturk platform. I implemented several measures in the survey to ensure the quality of data. First, the task was set to be available for only workers with 1,000 or more completed tasks and a 99% or above acceptance rate. Second, I only recruited workers who are currently living in the US and are full-time employees of an organisation with 30 or more employees. Third, each worker was allowed to take the survey only once. Fourth, at the beginning of the survey, I communicated with participants that the data would be used only for research purposes, and their response would be kept confidential. Additionally, I told them that there were no right or wrong answers, reducing the influence of social desirability of responses. Finally, I included some attention filters (e.g. questions that ask participants to choose one particular response, such as "strongly disagree") into the survey so that workers who did not pay attention to every question could be excluded. The task was kept available until 200 workers completed the survey. Of the 214 Mturk workers who participated, 14 failed to pass the attention filters (completion rate = 93.5%). Each worker received USD $1.15 upon completion, which matches with their estimated average hourly wage (USD $5.00, according to Ipeirotis (2010b)) on the platform. The resulting sample was predominantly Caucasian (81%) and male (63%) and, on average, in their mid-30s (mean = 33.9, S.D. = 10.2) with 6.6 years of work experience (mean = 6.6, S.D. = 5.3 years).

4-2-2. Results

I conducted a series of EFAs with the maximum likelihood extraction method and Promax rotation. The number of factors was determined by the threshold of eigenvalue larger than 1.0. Initial analysis with 38 items yielded six factors that accounted for 66.2% of the total variance, with three cross-loaded items. The two items were loaded to the sixth factor, which accounted for 2.0% of total variance, and they were also cross-loaded to another factor. I removed the three cross-loaded items and conducted another EFA with the remaining 35 items. It yielded five factors which accounted for 65.1% of the total variance. All items showed factor loadings greater than .50 with no cross-loading. The extracted five-factor solution was consistent with the expected five-factor structure (NEO, REO, UGI, PIF, RWR). One exception was REO1, which was loaded to a factor that appears to represent NEO. I removed the item and conducted another EFA, which resulted in a five-factor structure that accounted for 65.7% of the total variance.

The result is presented in Table 4-2. Factors 1, 2, 3, 4 and 5 correspond to UGI, NEG, PIF, RWR and REC, respectively. As expected, the items that correspond to UGI, PIF and RWR formed three distinct factors. The correlation between the five factors appeared to be consistent with expected relationships. First, Factors 1 (UGI), 3 (PIF) and 4 (RWR) show strong correlations with one another (ranging from .53 to .58), and the correlation coefficients were larger than their correlations with other factors (NEO and REO). This is consistent with ***proposition 2***, which is that a higher-order construct that represents GEO is manifested by three lower-order constructs. Second, Factor 5 (REC) is positively associated with all other factors, while factor 1 (UGI), 3 (PIF) and 4 (RWR) are negatively correlated with factor 2 (NEG). These are consistent with the characteristics of the three forms of social exchange. As discussed in Chapter 2, reciprocal exchange shares some characteristics with both negotiated exchange (both have dyadic structure) and generalised exchange (both have implicit processes); on the other hand, negotiated and generalised exchanges have opposite characteristics in terms of their structure and process. Overall, the result of EFA appears to be consistent with the proposed structure of SEOs and provides further support for the content validity of the developed items.

Table 4-2. Results of EFA

Item	Factor Loading 1	2	3	4	5
UGI5	**.92**	-.03	.01	-.07	-.01
UGI3	**.87**	-.07	.00	-.03	.03
UGI2	**.86**	.07	-.07	.09	.03
UGI6	**.82**	.09	.03	-.10	.00
UGI7	**.79**	.04	.07	.02	-.02
UGI8	**.78**	.10	-.07	.09	-.01
UGI4	**.78**	-.12	.05	-.03	.00
UGI1	**.55**	-.11	.03	.19	.02
NEO4	.00	**.87**	.08	-.08	-.11
NEO2	.10	**.85**	.01	-.01	-.05
NEO6	.07	**.83**	-.07	.02	.11
NEO5	-.02	**.80**	.07	.02	-.14
NEO1	.05	**.79**	.06	-.11	-.12
NEO7	.03	**.76**	-.14	.04	.14
NEO3	-.04	**.74**	.01	.05	.02
NEO8	-.17	**.60**	-.07	.16	.11
PIF8	.03	.06	**.87**	-.08	.06
PIF7	-.02	-.02	**.82**	.00	.02
PIF4	.02	-.07	**.82**	.07	-.06
PIF3	.00	-.08	**.79**	.08	-.04
PIF5	.06	.07	**.79**	-.07	.06
PIF1	.04	-.12	**.78**	.09	-.11
PIF6	-.08	.11	**.76**	.00	.19
RWR2	-.04	.06	-.02	**.95**	-.03
RWR4	.05	-.05	-.04	**.85**	.01
RWR8	.01	.03	.05	**.83**	-.01
RWR3	-.01	-.06	.10	**.76**	-.03
RWR1	.01	-.03	-.05	**.68**	.03
RWR5	.06	.14	.08	**.52**	.07
REO6	-.03	-.14	-.01	-.09	**.97**
REO5	.01	.00	-.02	.02	**.88**
REO7	.00	.02	.07	.04	**.69**
REO4	.10	-.06	.01	.09	**.65**
REO8	-.03	.29	.13	.00	**.52**
Correlations between factors					
2	-.24				
3	.53	-.13			
4	.54	-.36	.58		
5	.16	.15	.44	.44	

n = 200. Bold numbers are factor loadings larger than .50

4-3. Stage 3: psychometric analysis

Based on the evidence in the previous stage, I conducted a psychometric analysis of the new scales. With another dataset collected through Mturk, I further examined the scales' factor structure, reliability, nomological validity and the influence of social desirability on responses. I used confirmatory factor analysis to assess the higher-order structure of GEO. Nomological validity is also known as criterion-related validity and refers to the extent to which a construct is related to theoretically relevant variables (Cronbach & Meehl, 1955; Hinkin, 1998). I will use existing constructs of individual orientations on social exchange, agreeableness, Machiavellianism, neuroticism, trust towards close colleagues and trust towards organisation members as criteria, drawing on my discussion in Chapter 2. Reliability is examined by Cronbach's alpha. Regarding social desirability, I suspect GEO might be prone to social desirability because generalised exchange has been associated with the development of moral systems in human societies (Alexander, 1987), and proverbs that imply the rule of collective reciprocity are found in many parts of the world (Takahashi, 2000). Next, I will present hypotheses regarding the relationships between SEOs and the criterion variables.

4-3-1. Hypothesis

As reviewed in Chapter 2, creditor ideology and reciprocity wariness are the key existing measures of an individual orientation towards a social exchange that have been applied in co-worker relationships. Creditor ideology refers to the beliefs in favour of giving more than one receives in reciprocal exchange, expecting it will lead to a more significant return in the future, and reciprocity wariness refers to the beliefs in avoiding committing resources in reciprocal exchange because of the concern of being taken advantage of (Eisenberger et al., 1987). The review of empirical research in Chapter 2 suggests the former makes individuals generous, even when the prospect for reciprocation is low, and the latter discourages them from committing resources because of concern for reciprocation (e.g. Cotterell et al., 1992; Eisenberger et al., 1987). I expected reciprocity wariness to have a positive and significant correlation with NEO, because wary individuals are likely to believe explicit negotiation is an ideal approach to avoid being exploited by their exchange partners. On the other hand, I expected creditor ideology to be positively and significantly associated with GEO, as individuals with strong creditor ideology are likely to be less concerned with a lack of direct reciprocation. I also expected creditor ideology to be positively and significantly associated with REO because individuals with creditor ideology are likely to believe engagement in reciprocal exchange is a good investment for them.

H4-1: Reciprocity wariness is positively associated with NEO.

H4-2: Creditor ideology is positively associated with REO and GEO.

I use three personality traits – agreeableness, Machiavellianism and neuroticism – as indicators of positive intent, negative intent and risk-sensitivity in interpersonal relationships, respectively. As discussed in Chapter 2, agreeableness is considered to represent prosocial personality, and individuals with high agreeableness are sensitive to and concerned with the welfare of others (Chiaburu et al., 2011). They are sympathetic, cooperative and trusting (Costa & McCrae, 1992). Agreeableness is associated with individuals' interest in getting along with others (Hogan & Holland, 2003) and their values towards emphasising solidarity and communion with others (Saucier & Goldberg, 2003). The norm of reciprocity and the rule of collective reciprocity are considered the basis of collaboration in human societies (Gouldner, 1960; Takahashi, 2000), and rules require individuals to pay attention to others' interests (Flynn, 2005). Hence, individuals with strong agreeableness are likely to develop beliefs in favour of them. On the other hand, individuals with strong agreeableness are not likely to develop beliefs towards negotiated rules, which put one into transactional relationships with others and let him/her focus on his/her own interests.

H4-3: Agreeableness is negatively associated with NEO and positively with REO and GEO.

Machiavellianism is one of the dark-triad personality traits (Jones & Paulhus, 2014), which are characterised as having a lack of interest in and concern about the welfare of others (Jones & Paulhus, 2011). Individuals with Machiavellianism tend to manipulate others for personal benefits (Jones & Paulhus, 2014). Unlike the other two facets of the dark triad, psychopathy and narcissism, Machiavellianism is associated with long-term orientation. Individuals with Machiavellianism pay attention to the long-term consequences of their behaviours (Nathanson, Paulhus & Williams, 2006) and invest efforts in manipulating others to achieve future gain (Jones & Paulhus, 2011). These characteristics suggest individuals with Machiavellian traits are likely to develop beliefs in favour of negotiated rules which put self-interest first. In addition, they might favour the norm of reciprocity as a means to manipulate others. For example, ingratiation benefits the flatterer through reciprocation. The persons flattered tend to consider the flatterer credible (Vonk, 2002) and to provide material benefits to the flatterer (Westphal & Stern, 2007). Hence, Machiavellian individuals might favourably consider the norm of reciprocity. However, they are likely to disfavour the rule of collective reciprocity, as it leaves reciprocation beyond one's control.

H4-4: Machiavellianism is positively associated with NEO and REO, and negatively with GEO.

As I discussed in Chapter 2, the development of GEO requires a positive expectation of future return from social exchange, and neuroticism is likely to hinder such an expectation. Neuroticism is associated with wariness, concern, anxiety and lack of social adjustment (Costa & McCrae., 1992; Goldberg, 1990). Individuals with strong neuroticism tend to have limited social skills (Judge, Locke & Durham, 1997) and avoid risk-taking in social relationships (Nicholson et al., 2005). Raja, Johns and Ntalianis (2004) found that neurotic individuals are more likely to perceive transactional psychological contracts which do not require long-term commitment and allow them to focus on the prescribed job performance. This evidence suggests individuals with high levels of neuroticism are risk-sensitive in social relationships and therefore more likely to develop beliefs in favour of negotiated rules in social exchange. This is because explicit negotiation reduces uncertainty in the outcomes of social exchange and the need to take initiative to satisfy the exchange partner's interests. Strong neuroticism is likely to become an obstacle to the development of beliefs in favour of the norm of reciprocity and the rule of collective reciprocity, which inherently involve risks in reciprocation and require individuals to interact with others without clear guidance of explicitly negotiated rules.

H4-5: Neuroticism is positively associated with NEO and negatively with REO and GEO.

In terms of trust, individuals who consider that they are surrounded by trustworthy colleagues are likely to engage in reciprocal and generalised exchange because trust reduces the perceived risk in colleagues' behaviours (Lewis & Weigert, 1985). I investigated two types of trust: trust towards close colleagues and trust towards organisation members in general. The former is target-specific trust based on perception and feeling about particular individuals (cf. McAllister, 1995), whereas the latter is depersonalised trust, which has its basis in organisational practices and the social structure of the organisation (Kramer, 1999). I expect the former to be more strongly associated with REO and the latter with GEO. This is because target-specific trust reduces uncertainty in social exchange relationships with particular individuals, whereas depersonalised trust reduces uncertainty in social exchange relationships that involve unspecified individuals. I also expect both to be negatively associated with NEO, because having explicit negotiation is not efficient when one can trust exchange partners.

H4-6: Trust to close colleagues is negatively associated with NEO and positively with REO.

H4-7: Trust to members of the organisation is negatively associated with NEO and positively with GEO.

4-3-2. Participants and procedure

Participants were recruited on the Mturk platform, targeting 300 responses. The survey instruments were administered on the Qualtrics platform. I implemented the same quality assurance measures as in Stage 2. I offered a $1.95 reward for workers on the task, reflecting the length of the survey. The conditions for participation were (1) currently residing in the US, (2) having 1,000 or more completed tasks with acceptance rate at 99% or above and (3) working full time in an organisation with 100 or more employees. Only those who did not participate in Stage 2 were allowed to participate in the task. Of the 339 Mturk workers who participated, 39 failed to pass through one of the attention filters, resulting in a total of 300 participants (88.5% completion rate). Participants were predominantly Caucasian (85%), male (61%) and, on average, in their mid-30s (mean = 33.0, S.D. = 9.6) with 6.2 years of work experience (mean = 6.2, S.D. = 10.3).

4-3-3. Measures

GEO, NEO and REO. Four items were selected for each of the five constructs from 38 items resulting from Study 2. In choosing items, I considered (1) factor loading in Study 2 and (2) conceptual coverage of the construct domain. I aimed to include a diverse set of items for each construct, avoiding the inclusion of multiple items that would be relatively similar to each other.

Creditor ideology and reciprocity wariness. Four and five items, respectively, were taken from be creditor ideology and reciprocity wariness scales by Eisenberger et al. (1987). Following Lynch et al. (1999), I selected items with high factor loading in the original study. Both show a sufficient level of reliability (Cronbach's alpha = .96 and .94, respectively).

Agreeableness and neuroticism. Four items for each personality trait were taken from the International English Big Five Mini Markers, developed by Thompson (2008). Sample items for agreeableness were "sympathetic" and "unkind" (reverse coded); those for neuroticism were "envious" and "unworried" (reverse coded). Respondents were asked to evaluate to what extent each trait accurately described them by a 5-point Likert scale ranging from 1 (very inaccurate) to 5 (very accurate). Cronbach's alpha was .84 and .76, respectively.

Machiavellianism. I adopted the Machiavellianism section of Short Dark Triad scale by Jones and Paulhus (2014), which consists of nine items, an example being "Most people can be manipulated". Participants were asked to indicate how much they agree or disagree with statements by a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha was .90.

Trust. Three items were taken from the trust scale by Molm et al. (2007) and modified for the two trust scales. Sample items for trust towards close colleagues are "My close colleagues are trustworthy" and "My close colleagues are dependable". For the measurement of trust towards members of the organisation, I replaced "close colleagues" with "people in the organization".

The CFA was conducted to examine whether the two variables were distinct from each other, using Mplus 7.31 software (Muthén & Muthén, 1998–2012). As the analysis of response distribution suggested diversion from normal distribution, I used the MLM estimator, which estimates standard errors and chi-square statistics that are robust to non-normality of observations based on Satorra-Bentler corrections (1986; 1988). (I also use this estimator in the following analyses.) Following widely accepted practices in the literature (Hu & Bentler, 1998; Little, 2013; Vandenberg & Lance, 2000), I report chi-square ($\chi 2$), degree of freedom (df), p-value of chi-square test (p), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean squared error of approximation (RMSEA) and standardised root mean residual (SRMR) throughout this thesis. Although the $\chi 2$ test provides a test of the exact fit between observed variances/covariances and estimated ones, I do not use $\chi 2$ as a primary indicator of model fit for two reasons. First, it tends to be sensitive to its sample size and rejects most of the typical applications of SEM (Little, 2013). Second, given that any model is merely an approximation of the real world (MacCallum & Austin, 2000), it is not feasible to test an "exact" fit. Instead, I use CFI, TLI, RMSEA and SRMR as criteria for the model fit.

The result shows that the two-factor model fits significantly better ($\chi 2$ = 22.4, df = 8, p < .001, CFI = .99, TLI = .97, RMSE = .08, SRMR = .02) than the one-factor model ($\chi 2$ =

233.3, df = 9, p < .001, CFI = .77, TLI = .62, RMSEA = .29, SRMR = .11; $\Delta\chi2$ = 172.7[4], Δdf = 1, p < .001). Cronbach's alpha was .95 for both.

Social desirability. A 13-item short version of the Marlowe-Crowne Social Desirability scale (Reynolds, 1982) was adopted in the survey. The purpose was to examine the susceptibility of exchange orientation scales to social desirability. Cronbach's alpha was .80.

4-3-4. Results

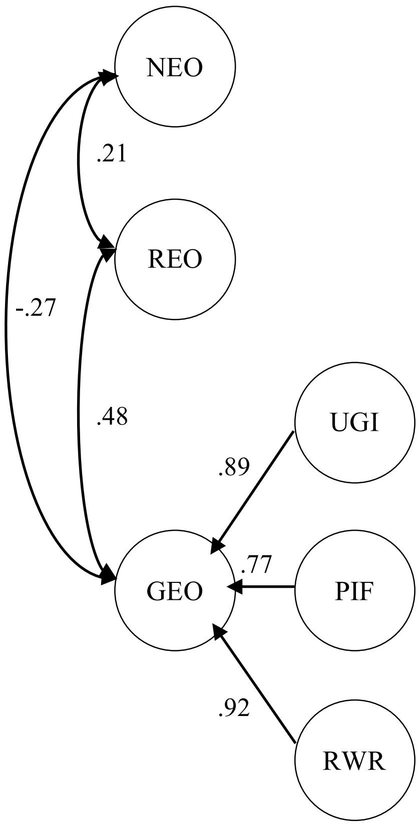
Confirmatory factor analysis. I examined the factorial validity of the SEOs with a series of CFAs. First, I examined if the five first-order factors (NEG, REC, UGI, PIF and RWR), creditor ideology and reciprocity wariness were distinct from one another. The seven-factor model showed a good fit ($\chi2$ = 476.3, df = 356, p < .001, CFI = .98, TLI = .97, RMSEA = .03, SRMR = .04), satisfying the threshold proposed by Hu and Bentler (1998). The alternative six-factor models, which collapsed two of the seven variables into one factor, showed a significantly worse fit ($\Delta\chi2$ = 83.7 - 1372.7, Δdf = 6, p < .001), suggesting the seven variables were distinct from one another.

Second, I tested the hypothesised second-order structure, introducing the second-order latent factor of GEO in addition to five first-order factors, and the model showed a very good fit ($\chi2$ = 205.0, df = 164, p = .02, CFI = .99, TLI = .98, RMSEA = .03, SRMR = .05). Signs of correlations between NEG, REC and GEN were consistent with stage 2, and factor loadings were all significant (p < .001) and larger than .70. The five first-order factors showed sufficient reliability (Cronbach's alpha > .70). Table 4-3 shows the hypothesised model, full list of items, factor loading, correlation among latent factors and Cronbach's alpha of first-order variables.

[4] $\Delta\chi2$ is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor that MLM estimator reports. It is not equal to numerical difference of the two chi-square scores.

Third, drawing on the recommendations by Credé and Harms (2015), I tested three alternative models: a five-factor first-order model (Figure 4-1a), which only includes five first-order latent factors; a three-factor first-order model, in which items for UGI, PIT and RWR directly load onto the GEN factor (Figure 4-1b); and a single-factor first-order model, in which all items directly load onto a single factor (Figure 4-1c). The hypothesised model was nested within the five-factor model (4-1a), and the three-factor (4-1b) and the single-factor models (4-1c) were nested within the hypothesised model (see Credé & Harms, 2015 for a discussion on alternative models for higher-order CFA models). An analysis of the chi-square difference (see Table 4-4) suggested the three-factor (4-1b) and single-factor (4-1c) models fit significantly worse than the hypothesised model, while the five-factor first-order model (4-1a) fit significantly better than the hypothesised model. Although the result for the five-factor first-order model raises some concerns about the validity of the hypothesised model, the good fit of the hypothesised model and strong correlation between UGI, PIF and RWR in the five-factor model (UGI < = > PIF .62, UGI < = > RWR .69 and PIF < = > RWR .56) provide support to the theoretical prediction that GEO is manifested by the three lower-order factors.

Table 4-3. CFA results for the hypothesised model



Factor loading	Item	Cronbach's alpha
.72	At work, it generally pays to clarify rewards before making extra efforts for others.	
.76	If I do not ask for something in return before doing something for others at work, I will be taken advantage of.	.84
.80	When I ask someone to help me with work, I should ask him/her what he/she wants in return.	
.74	I hesitate to ask colleagues to do something extra for me unless I can offer concrete benefits in exchange.	
.78	When I receive support from a colleague, I should remember to give something back to him/her.	
.88	If someone in the workplace does me a favor, I feel obliged to repay him/her in some way.	.90
.89	If someone does something for me, I feel the need to do something for him/her.	
.77	At work, I always repay someone who has done me a favor.	
.82	I think kindness to others in the workplace will eventually come back to me in some way.	
.89	It is right to help others at work, as I will receive help from someone in the future.	.88
.83	My efforts for colleagues will be rewarded by someone at some point, if not immediately.	
.91	I am happy to do favors for others at work, as I will someday need a favor from someone.	
.81	When I receive support from a colleague, I should provide support to others in the workplace.	
.86	When someone in the workplace makes extra efforts for me, I often start thinking what I can do for others	.92
.77	Receiving kindness from someone in the workplace makes me feel I should do something for others.	
.79	When I receive someone's favor at work, I want to repay the debt by doing a favor for others	
.80	At work, I should be kind to those who are kind to others.	
.81	I believe those who often go the extra mile for others at work deserves my effort to help them.	.91
.87	When a colleague who often gives support to others is in trouble, I should do something for him/her.	
.90	When I find someone in the workplace helping others, I feel I should offer help when he/she needs.	

Standardised coefficients are reported. All correlations and coefficients are significant at the 1% level.

Hypothesised model 4-1a) Five-factor model 4-1b) Three-factor model 4-1c) Single-factor model

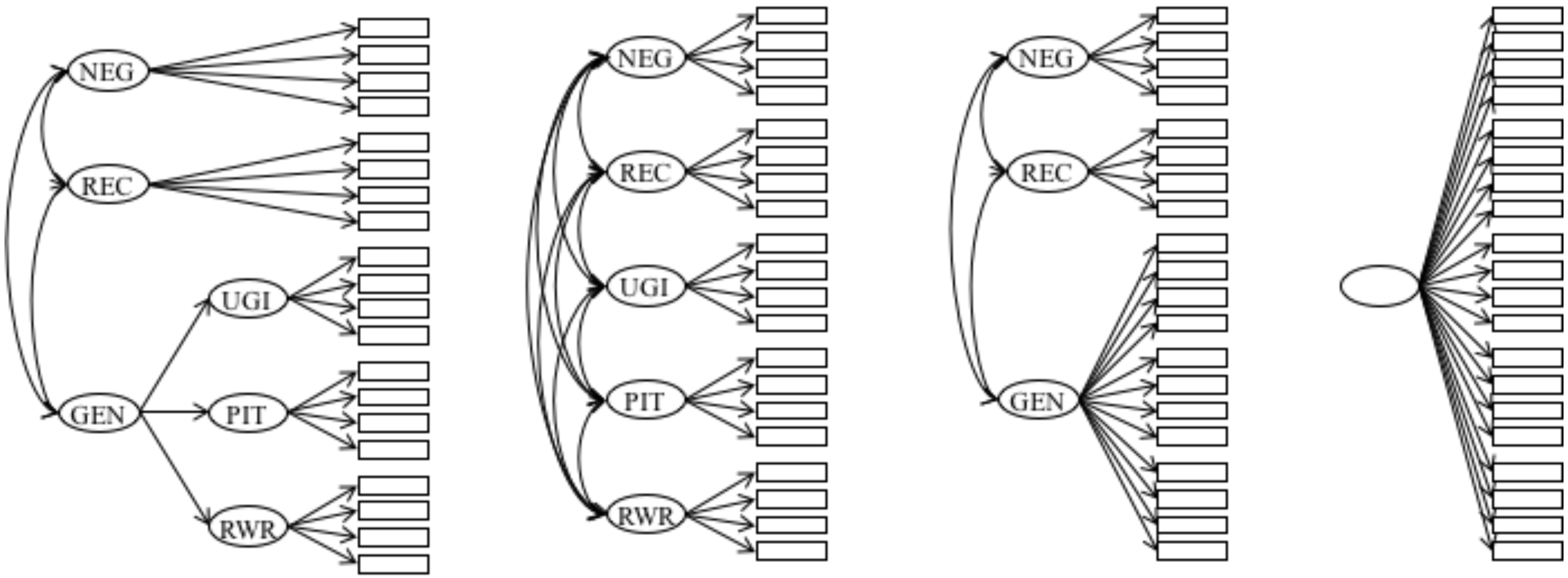


Figure 4-1. Alternative models for CFA

Table 4-4. Model fit of hypothesised and alternative models

	Model fit							Model comparison					
	$\chi 2$	df	p	CFI	TLI	RM SEA	SRMR	Model	$\Delta\chi 2$	Δdf	p	Sig.	ΔCFI
1) Hypothesised model	204.97	164	.02	.99	.98	.03	.05						
Alternative models													
(4-1a) Five-factor model	190.61	160	.05	.99	.99	.03	.04	1	13.79	4.00	.01	**	.00
(4-1b) Three-factor model	586.56	167	< .01	.86	.84	.09	.07	1	16.89	3.00	< .01	**	.13
(4-1c) Single-factor model	1317.42	170	< .01	.61	.56	.15	.14	1	18.04	6.00	.01	**	.38

$\chi 2$ is Sattora-Bentler mean-adjusted Chi-square score. $\Delta\chi 2$ is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor.
** Significant at .01 level.

Table 4-5. Descriptive statistics of SEO and criterion variables

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1 NEO	3.01	1.27		.13*	-.24**	.15**	.54**	-.36**	.52**	.24**	-.32**	-.29**
2 REO	4.95	1.14	.13*		.48**	.33**	-.08	.22**	.14*	-.08	.29**	.22**
3 GEO	5.36	.86	-.26**	.48**		.34**	-.22**	.46**	-.14*	-.09	.54**	.48**
4 Creditor ideology	4.4	1.27	.13*	.33**	.36**		.16**	.09	.16**	-.08	.23**	.26**
5 Reciprocity wariness	2.69	1.42	.55**	-.08	-.23**	.14*		-.36**	.44**	.13*	-.32**	-.16**
6 Agreeableness	4.08	.74	-.38**	.22**	.48**	.13*	-.37**		-.36**	-.25**	.40**	.29**
7 Machiavellianism	2.94	.75	.53**	.13*	-.19**	.09	.45**	-.43**		.11	-.24**	-.18**
8 Neuroticism	4.25	.89	.27**	.08	-.14*	-.13*	.16**	-.32**	.22**		-.17**	-.16**
9 Trust towards close colleagues	5.72	.94	-.34**	.28**	.56**	.26**	-.33**	.45**	-.30**	-.23**		.64**
10 Trust towards organisation members	5.21	1.16	-.32**	.22**	.50**	.29**	-.18**	.34**	-.26**	-.22**	.66**	
11 Social desirability	6.1	3.04	-.14*	.01	.18**	.15**	-.11	.30**	-.38**	-.31**	.24**	.25**

n = 300. Scores below diagonal are correlations and scores above diagonal are partial correlations controlling social desirability.
** Significant at the .01 level. * Significant at the 0.05 level (2-tailed).

Finally, I further examined the distinctness of the SEO measures from the criterion variables that showed a relatively high correlation with one of the SEOs. Table 4-5 shows the mean score, standard deviation, and correlations between variables (scores above the diagonal are of a partial correlation controlling for social desirability; in the following, I report regular correlation coefficients). First, agreeableness, trust towards organisation members and trust towards close colleagues showed a relatively high correlation with GEO (.48, .56 and .50, respectively). I added these variables to the hypothesised model and obtained an acceptable fit ($\chi2$ = 666.3, df = 416, p < .001, CFI = .95, TLI = .94, RMSEA = .05, SRMR = .05). Then, I tested nine alternative models in which I collapsed either of the three criterion variables with UGI, PIF, or RWR, respectively. They all showed a significantly worse fit ($\Delta\chi2$ = 222.2- 53.6, Δdf = 5, p < .001). I also examined three more alternative models in which agreeableness, trust towards close colleagues and trust towards organisation members (respectively) were loaded onto GEO. All models showed a significantly worse fit ($\Delta\chi2$ = 11.3-45.7, Δdf = 4, p < .005). Second, Machiavellianism also showed a relatively high correlation with NEO (.53). The addition of Machiavellianism to the hypothesised model resulted in an acceptable fit ($\chi2$ = 593.3, df = 368, p < .001, CFI = .95, TLI = .94, RMSEA = .05, SRMR = .06), and the alternative model, in which NEO is collapsed with Machiavellianism into one factor showed significantly worse fit ($\Delta\chi2$ = 292.3, Δdf = 3, p < .001). These results showed that SEO measures tapped the distinct domain from those criterion measures despite the relatively strong correlations with them.

Relationship with social desirability. GEO was positively associated with social desirability scale (r = .18, p < .01) and NEO was negatively associated (r = -.14, p < .05). The correlation between REO and the social desirability scale was not significant (r = .01, p > .10). Although GEO and NEO showed significant correlations, the square of correlation coefficients (.019 and .030) suggested the impact of respondents' attitudes to show socially desirable responses on the variance of these scales was limited.

Nomological validity. Next, I tested the hypotheses on their relationships between criterion variables and the three exchange scales, NEO, REO and GEO. As expected, the reciprocity wariness was significantly and positively correlated with NEO ($r = .55$, $p <$ HI $.01$). Its correlation with REO was not significant ($r = -.08$, $p > .1$) and that with GEO is negative and significant ($r = -.23$, $p < .01$). Hence, H4-1 is supported. Creditor ideology shows significant and positive correlation with GEO ($r = .36$, $p < .01$) and REO ($r = .33$, $p < .01$), whereas it also shows significant and positive correlation with NEO ($r = .13$, $p < .05$). Williams' test of dependent correlations (Steiger, 1980) showed that the correlation between NEG and creditor ideology was significantly smaller than the correlations between REO/GEO and creditor ideology ($p < .01$). This suggests that REO and GEO are more strongly associated with creditor ideology than NEO is. This is consistent with H4-2.

Agreeableness was significantly and negatively associated with NEO ($r = -.38$, $p < .01$) and positively with REO ($r = .22$, $p < .01$) and GEO ($r = .48$, $p < .01$). Machiavellianism was positively associated with NEO ($r = .53$, $p < .01$) and REO ($r = .13$, $p < .05$), and negatively with GEO ($r = -.19$, $p < .01$). Hence, H4-3 and H4-4 were fully supported. Neuroticism was positively and significantly associated with NEO ($r = .27$, $p < .01$) and negatively with GEO ($r = -.14$, $p < .05$), whereas its correlation with REO is not significant. Therefore, H4-5 is partially supported.

Trust variables (towards close colleagues and towards organisational members) show negative correlations with NEO (-.34 and -.32, respectively; $p < .01$ for both) and positive correlations with REC (.28 and .22, respectively; $p < .01$ for both) and GEO ($r = .56$ and $.50$, respectively; $p < .01$ for both). While I predicted that the two trust variables would have differential relationships with GEO and REO, the pattern was similar between the two. Hence, H4-6 and H4-7 were partially supported.

As criterion variables have been correlated with one another, these zero-order correlations might be superfluous. To further evaluate the relationships between criterion variables and SEO variables, I conducted regression analyses using the former as independent variables and the latter as dependent variables. Table 4-6 shows the results, which highlighted the differential relationships between SEO variables and criterion variables, except for creditor ideology, which shows positive and significant correlations with all three SEO variables. In terms of personality traits, NEO showed to be significantly and positively associated with Machiavellianism ($p < .01$) and neuroticism ($p < .05$), while REO was associated with agreeableness and Machiavellianism ($p < .01$ for both) and GEO were associated with agreeableness ($p < .01$). This suggests that GEO and REO are both associated with a positive, “getting along”, personality, while REO was also associated with malevolent, calculative intention that Machiavellianism represents. NEO has been uniquely associated with neuroticism, which suggests a linkage between risk-sensitivity in interpersonal relationships and a preference towards negotiated rules in a social exchange. Overall, the results were consistent with H4-3, H4-4 and H4-5. Trust variables also showed differential relationships with the SEO variables. REO was significantly associated with only trust towards close colleagues ($p < .05$), while GEO was associated with trust towards both close colleagues and organisation members ($p < .01$ for both). These are consistent with H4-6 and H4-7, suggesting the relationships between trust and orientations towards implicit forms of exchange, and the unique link between depersonalised trust and generalised exchange. In terms of reciprocity wariness, it has significant positive association with NEO ($p < .01$), which suggests wary individuals are likely to prefer negotiated rules, as predicted in H4-1. Lack of differential relationships between creditor ideology and SEOs (all positive and significant, $p < .01$ for all) might mean that the unique element of creditor ideology, after controlling other factors, is the willingness to engage in any type of social exchange.

Table 4-6. Regression analysis results (SEOs and criterion variables)

	NEO			REO			GEO		
	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.
Constant	1.78	.68	**	.40	.67		.92	.44	*
Creditor ideology	.15	.05	**	.23	.05	**	.15	.03	**
Reciprocity wariness	.27	.05	**	-.10	.05	*	-.04	.03	
Agreeableness	-.11	.10		.27	.10	**	.35	.06	**
Machiavellianism	.43	.09	**	.46	.09	**	.07	.06	
Neuroticism	.18	.07	*	.03	.07		.07	.05	
Trust to close colleagues	-.04	.09		.20	.09	*	.25	.06	**
Trust to organisation members	-.20	.07	**	.03	.07		.14	.04	**
R2	.42			.23			.46		
Adjusted R2	.40			.21			.44		

n = 300. Coef. = coefficient, S.E. = standard error, Sig. = significance levels
** Significant at the .01 level. * Significant at the 0.05 level (2-tailed).

4-3-5. Discussion

Overall, the results have provided support for the factor structure, reliability and nomological validity of the SEO measures. The CFA suggest that the hypothesised higher-order structure fits well with the data, and the SEO variables tapped conceptually distinct areas from criterion variables. The five first-order factors all showed sufficient levels of reliability. While NEO and GEO showed a significant correlation with the social desirability scale, the influence of social desirability appears to be marginal. Finally, the correlations between three SEOs measures and criterion variables were consistent with theoretical predictions, providing strong support to the nomological validity of the new scales.

4-4. Stage 4: Cross-national validation

This section examines the validity of SEOs in the Japanese societal context. Prior studies have suggested that a societal context might have influence on the way society members engage in the three forms of social exchange. Compared with the US, Japan is characterised as having a more collectivistic and tight culture (Chan, Gelfand, Triandis & Tzeng, 1996; Hofstede et al., 2010; House et al., 2004; Triandis, 1995a). In collectivistic societies, people tend to consider individuals as interdependent, rather than autonomous, and value duties and obligations to the collective rather than individual self-interest (Markus & Kitayama, 1991; Triandis, 1990). In tight cultures, there exist strong social norms which regulate the behaviours of individuals in the society, and a diversion from those norms can lead to serious social sanctions (Gelfand, Nishii & Raver, 2006). Individuals from collective cultural backgrounds have been argued to be more likely to engage in a generalised exchange than those from individualistic societies (Flynn, 2005), and the existence of strong social norms that emphasise long-term commitment in interpersonal relationships might provide assurance for future benefits from engaging in a generalised exchange (Yamagishi & Yamagishi, 1994). Therefore, Japan is an appropriate societal context to examine the validity of SEO measures in comparison to the US. In this stage, I tested the structures of SEO scales in Japan and the measurement invariance between Japan and the US.

4-4-1. Participants and procedure

Data were collected through an Internet-based marketing survey company that has a large network of potential participants. Participants received reward points for participation (typically equivalent to USD $1-3 dollars), which they could later exchange for gifts of their choice. The survey instrument was translated with the back-translation method (Brislin, 1970) by two bilingual researchers who were fluent in both English and Japanese. Three

Japanese professionals, who did not participate in the remainder of this study, were asked to review the survey in terms of readability and clarity. Any concerns raised were resolved by a discussion with the researchers involved in the translation. The survey was implemented on a survey platform of the marketing survey company. The survey invitation was sent to individuals who had undergraduate or higher educational qualifications and were working full-time in an organisation with 100 or more employees. Of the 486 individuals who participated in the study, 321 completed the survey (completion rate = 66.0%), and 165 participants failed to pass the attention filters. The completion rate was considerably lower than the completion rates in stage 2 (93.5%) and 3 (88.5%). I suspect this might be because the use of attention filters is rare in marketing surveys in Japan. The marketing survey company confirmed that the use of attention filters is uncommon in Japan, whereas the use of such filters is a common practice on Mturk (Mason & Suri, 2012). The resulting sample was 100% Asian and 56.1% male. The average age was 42.5 years old (mean = 42.5, S.D. = 11.2), and the average work experience was 13.0 years (mean = 13.0, S.D = 10.0). To conduct the measurement invariance test, I used the dataset that I collected in the US in stage 3 in addition to this dataset.

4-4-2. Measures

The survey included SEO variables, creditor ideology and reciprocity wariness. The items and the format of the questions were identical with the survey conducted in stage 3.

4-4-3. Results

Factor structure and measurement invariance. Before conducting the analysis of measurement invariance, I examined the factor structure of the Japanese data. First, I conducted CFA with the five first-order factors of SEOs (NEO, REO, UGI, PIF and RWR), creditor ideology and reciprocity wariness. The model shows an acceptable fit ($\chi2$ = 682.5, df = 356, p < .001, CFI = .94, TLI = .93, RMSEA = .05, SRMR = .07). The alternative six-factor models, in which two of the seven variables are collapsed into one factor, showed a significantly worse fit ($\Delta\chi2$ = 158.3 - 1222.4, Δdf = 6, p < .001). Next, I examined the hypothesised model that include five lower-order factors and GEO second-order factor. This model showed an acceptable fit ($\chi2$ = 352.8, df = 164, p < .001, CFI = .94, TLI = .93, RMSEA = .06, SRMR = .07).

I adopted a CFA-based approach to evaluate measurement invariance between multiple groups, following Vandenberg and Lance (2000) and Chen, Sousa and West (2005). The procedure is comprised of multiple stages with different levels of constraints of parameter invariance. Four levels of invariance were examined. First, I examined the configural invariance model, which imposed the same factor structure across groups. Second, I tested the first-order metric invariance model, imposing the equivalence of factor loading to first-order factors across groups. Then, the third model, second-order metric invariance model, was used to impose the equivalence of factor loading to the GEO second-order factor across groups. Finally, the scalar invariance model imposed the same intercept for items across groups. Metric invariance allows researchers to compare scale correlations between groups and is sometimes called “weak” invariance, while scalar invariance allows researchers to compare means between groups and is called “strong” invariance. Indeed, there are further tests of invariance, such as invariance of unique variances, factor variances, factor covariances and factor means. However, because strong invariance is considered a sufficient condition for cross-national comparative studies (e.g. Ariely & Davidov, 2012), I did not examine these further levels of invariance. The models were evaluated by chi-square test (Vandenberg & Lance, 2000) and the difference of the CFI (Cheung & Rensvold, 2002). A significant chi-square difference between models indicated that the introduction of constraint worsened the model fit, and thus the stricter level of invariance was not achieved (Vandenberg & Lance, 2000). However, Cheung and Rensvold (2002) recommend not rejecting a model when the CFI difference is below .01, even when a chi-square test shows significant differences, based on Monte-Carlo simulation. I will use both criteria in the following analyses.

Table 4-7 summarises the results. The configural invariance model (model 1) showed a good fit ($\chi 2 = 555.89$, $df = 328$, $p < .001$, CFI = .96, TLI = .96, RMSEA = .05, SRMR = .06). The first-order metric invariance model (model 2) showed a significantly worse fit than model 1 in terms of chi-square test ($p < .01$), but ΔCFI was smaller than .01. The second-order model (model 3) did not show significantly worse fit than model 2 in both chi-square test and ΔCFI. The scalar invariance model (model 4) showed a significantly worse fit in both the chi-square test ($p < .001$) and ΔCFI test ($> .01$) than model 3. Therefore, while configural and metric invariance were supported, scalar invariance was not supported.

Partial invariance. It is well recognised that achievement of measurement invariance is particularly challenging when the measures are translated from one language to another and used in different societal contexts (Ariely & Davidov, 2012). Reflecting on this challenge, it is common to examine partial invariance, in which the equivalence constraint is relaxed for some indicators, and conduct a mean comparison based on partial scalar invariance in studies that use translated scales (Schmitt & Kuljanin, 2008). Several scholars argue that two items having invariant loading and intercepts are enough for meaningful mean comparison (Byrne, Shavelson & Muthén, 1989; Steenkamp & Baumgartner, 1998). Drawing on these arguments, I examined partial scalar invariance in SEOs between the US and Japan.

It is recommended to have a theoretical ground for the investigation of a partial invariance rather than purely relying on empirical evidence (Little, 2013; Vandenberg & Lance, 2000). There are two theoretically relevant issues that might affect individuals' reactions to SEO items between the two societies. First, the cultural differences between the two societies suggest that individuals from the two societies might react differently to items of SEOs. As I mentioned above, the collectivistic and tight culture in Japan might reinforce individuals' orientation towards the rule of collective reciprocity. The emphasis on duties and obligations to contribute to the collective rather than pursuing individual interests in collectivistic societies and the strength of social norms might lead Japanese participants to consider that "it is the right thing" to apply the rule of collective reciprocity more strongly than US participants. Second, I suspect differences in response styles between the two countries might have caused measurement invariance. It is well known that collectivistic countries are characterised by emphasis on harmony, conformity and avoidance of confrontation (Triandis, 1995b). Individual initiatives and opinions that do not follow group norms are rather discouraged in such societies (Hofstede et al., 2010). Such cultural traditions might encourage Japanese participants to choose more modest responses than those of the US participants. In fact, a comparative analysis of response patterns suggested that Asian respondents tended to show a middle response style, which refers to the tendency to choose a middle point (or a "4" on a 7-point Likert scale) in answering questions (Harzing, 2006). To examine whether a similar pattern is present in the current sample, I conducted a post-hoc analysis of the response pattern among the 26 items that I used in this stage (SEOs, creditor ideology and reciprocity wariness), following Weijters, Schillewaert and Geuens (2008). It showed a middle-response style, which was quantified by calculating the proportion of responses that chose the middle score among the total responses. This was shown to be significantly larger in the Japanese sample than in the US sample (.19 and .12, respectively; an independent sample t-test showed a significant mean difference at $p < .01$). Taken together, there is good reason to suspect cross-cultural differences in peoples' response patterns towards SEO items.

Table 4-7. Results of measurement invariance test

	Model fit							Model comparison					
	χ^2	df	p	CFI	TLI	RMSEA	SRMR	Model	$\Delta\chi^2$	Δdf	p	sig.	ΔCFI
1) Configural invariance	555.89	328	< .01	.96	.96	.05	.06						
2) Metric invariance (first-order)	601.43	343	< .01	.96	.95	.05	.06	1	49.34	15	< .01	**	< .01
3) Metric invariance (second-order)	604.54	345	< .01	.96	.95	.05	.06	2	3.03	2	.22	n.s.	< .01
4) Scalar invariance	743.43	365	< .01	.94	.94	.06	.08	3	219.43	37	< .01	**	.02
5) Partial scalar invariance	665.77	361	< .01	.95	.95	.05	.07	3	123.29	33	< .01	**	< .01

χ^2 is Sattora-Bentler mean-adjusted chi-square score. $\Delta\chi^2$ is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor.
** Significant at .01 level, n.s. non-significant.

The modification indices provided by Mplus software suggested that four items (the second and fourth items of UGI, the second item of PIF and the first item of RWR) contributed significantly to the worse fit in the scalar invariance test. The result of a partial scalar invariance analysis, in which I allowed these items to have different intercepts between the two samples, is shown in the bottom row of Table 4-7. This showed a noticeably better fit than the scalar invariance model, and it satisfied the condition for partial scalar invariance (ΔCF < .01, compared to model 3). The modification leaves all four items for NEO and REO, and at least two items for UGI, PIF and RWR, which suggests we can compare means between the two countries (Byrne et al., 1989; Steenkamp & Baumgartner, 1998).

Based on the establishment of partial invariance, I conducted a post-hoc analysis of the mean scores in Japan and the US. Table 4-8 summarises the mean, standard deviance, standard error of mean and confidence intervals (95%) of the SEO scales, creditor ideology and reciprocity wariness in each country sample. (I separately analysed the measurement invariance of creditor ideology and reciprocity wariness, and they showed a strong measurement invariance between the two countries.) While the pattern of mean scores was similar between the two samples, there were differences. The mean scores of REO, GEO and creditor ideology are higher, and those of NEO and reciprocity wariness were lower in the US sample than in the Japanese sample. The independent t-test suggests that the mean difference was significant in REO ($p < .05$), GEO ($p < .01$) and reciprocity wariness ($p < .01$), while it was not significant in NEO and creditor ideology ($p > .10$). There were considerable differences in respondents' demographic characteristics between the two samples (for example, the Japanese sample was on average older than the US sample), which may have influenced the distribution of responses. To control for such potential influences, I conducted an analysis of covariance, controlling for age, gender and tenure. The results still suggested a significant mean difference between the two countries in GEO and reciprocity wariness ($p < .01$).

These results appear to suggest that the mean differences stem from response styles, rather than cultural differences. As I previously mentioned, the latter suggests people in collectivistic societies are more likely to be oriented towards generalised exchange (Flynn, 2005), and a tight culture encourages society members to follow the social norms (Gelfand et al., 2006) without worrying about the risk of non-reciprocation. Rather, the differences seem to reflect the middle response style (Weijters et al., 2008) among the Japanese, because for responses in both GEO and reciprocity wariness, the mean score of the Japanese sample is closer to the mid-point (4) than the mean score of the US sample.

Table 4-8. Descriptive statistics of SOE variables by country

		Mean	S.D.	S.E. of mean	95% C.I. (upper)	95% C.I. (lower)
NEO	Japan	3.19	1.06	.06	3.31	3.08
	US	3.16	1.32	.08	3.31	3.01
REO	Japan	4.74	1.00	.06	4.85	4.63
	US	4.94	1.13	.07	5.07	4.81
GEO	Japan	5.11	.80	.04	5.20	5.02
	US	5.38	.87	.05	5.48	5.29
Creditor ideology (CRW)	Japan	4.33	1.01	.06	4.44	4.22
	US	4.39	1.27	.07	4.53	4.25
Reciprocity wariness (RCW)	Japan	3.14	.95	.05	3.24	3.04
	US	2.69	1.42	.08	2.85	2.53

n = 321 (Japan), 300 (US)

4-4-4. Discussion

The analysis provided support to configural, metric and partial scalar invariance between Japan and the US. Although scalar invariance was not achieved, the results are encouraging because they support the utility of SOE measures beyond the US. Configural invariance means a factor structure is consistent between the two contexts, and metric invariance means the relationships between indicators and latent variables are also consistent between the two contexts. Therefore, researchers can use multivariate analysis in the two contexts and can compare the results. In addition, partial invariance could signal that researchers can compare the mean scores between the contexts. However, the comparison of mean scores implied the influence of differences in response styles between Japan and the US, and thus researchers need to be cautious in interpreting the mean scores.

4-5. Stage 5: incremental validity

In this stage, I examined whether SEO variables provide additional explanations to individual behaviours (task performance, OCB-I and OCB-O) beyond existing measures of individual orientations to social exchange, namely creditor ideology and reciprocity wariness. Task performance, OCB-I and OCB-O are ideal for this purpose, as they are widely used outcome measures in social exchange research and cover different aspects of individual behaviours. Regarding creditor ideology and reciprocity wariness, prior studies have applied these constructs to the peer-to-peer interaction context and shown that individuals with strong creditor ideology tend to be more generous in social exchange relationships, even when there is limited prospect for reciprocation, and reciprocity wariness makes individuals stingier, as they are reluctant to commit resources in social exchange relationships in fear of exploitation by others (Cotterell et al., 1992; Eisenberger et al., 1987). If SEOs do not provide an additional explanation for individual behaviours, the new constructs bring limited value to the development of the literature (Brackett & Mayer, 2003).

4-5-1. Hypothesis

As proposed in Chapter 2, I expected GEO to promote positive discretionary behaviours, even when one cannot expect direct reciprocation (***proposition 3***). This is because individuals with strong GEO tend to apply the rule of collective reciprocity in exchange situations and anticipate that benefiting others will eventually benefit them through indirect reciprocation. Therefore, lack of prospect for rewards or direct reciprocation would not prevent them from demonstrating discretionary behaviours that benefit co-workers.

Although GEO concerns individual beliefs about social exchange relationships between individuals, I expect GEO to have a positive impact not only on OCB-I but also on OCB-O. OCB-I refers to discretionary behaviours that directly benefit particular individuals and indirectly benefit an organisation, while OCB-O refers to discretionary behaviours that directly benefit an organisation, but they also indirectly benefit individuals in the organisation (Williams & Anderson, 1991). Individuals with strong GEO are likely to expect that OCB-I will benefit the target individuals (e.g. co-workers or supervisors) and eventually come back to them and that OCB-O will indirectly benefit someone in the organisation and thus, the goodwill will also eventually come back to them. They do not distinguish the interests of each individual in the collective; therefore, even though OCB-O is not targeted towards a specific individual, an individual will consider the behaviour a contribution to the benefit of others as a collective.

Hypothesis 4-8:

GEO is positively associated with OCB-I.

Hypothesis 4-9:

GEO is positively associated with OCB-O.

The expected impact of GEO on individual behaviours is clearly distinct from that of NEO and REO. In terms of NEO, I expect it to have a negative effect on both OCB-I and OCB-O.

In negotiated exchange, individuals pursue self-interest and focus on obtaining tangible and direct rewards from exchange relationships (Flynn, 2005; Molm, 2003). Therefore, individuals with strong NEO are likely to engage in discretionary behaviours only when people around them (e.g. supervisor, co-workers) agree to reward their behaviours by providing some resources as a result of negotiation. Such negotiation takes time to go through, and potential exchange partners cannot always offer attractive resources in exchange (Levine & Prietula, 2012). Therefore, individuals with strong NEO are less likely to demonstrate OCBs. On the other hand, NEO might lead individuals to perform better in task performance, because individuals with strong NEO are likely to focus on fulfilling explicitly agreed terms. Task performance reflects explicitly defined expectations and requirements in their job, and furthermore, they are typically associated with explicit rewards through incentive mechanism. Therefore, they are more interested in fulfilling such requirements and expectations, and low levels of OCBs are likely to allow them to allocate more time to do well in task performance (Bergeron, 2007; Bergeron, Shipp, Rosen & Furst, 2013).

Hypothesis 4-10:

NEO is positively associated with task performance.

Hypothesis 4-11:

NEO is negatively associated with OCB-I.

Hypothesis 4-12:

NEO is negatively associated with OCB-O.

Regarding REO, the review of prior work on similar constructs suggested that individual orientations following the norm of reciprocity moderate the reciprocation of resources one receives, but studies do not suggest it to have a direct effect on individual behaviours. Particularly, prior studies that investigated the impact of individual orientation to follow the norm of reciprocity in co-worker relationships in field settings have shown no significant impact of the orientation on individual behaviours, such as co-worker-targeted OCBs (Ladd & Henry, 2000). Although Wasko and Faraj (2005) showed a negative direct effect on knowledge-sharing behaviours on an in-house online platform where most participants were not familiar with one another. Hence, I did not set hypotheses for REO.

4-5-2. Participants and procedure

The data were collected in a large HRM professional service in Japan. This organisation provides services in recruitment and selection and has approximately 1000 employees in multiple offices located in major cities of Japan. The managing director of the business unit granted access after a discussion on the purpose of the study. Front-line employees who had direct contact with job seekers and recruiting companies participated in the survey. They were predominantly Japanese but included a few foreign nationals. The HR manager of the unit assured me that all participants were fluent in Japanese and had no problem in understanding the survey instruments. I excluded employees who had worked with the current supervisor for less than three months, including those who had recently joined the organisation, to make sure the supervisors knew their subordinates well enough that they could provide a reliable assessment of their job performance. I adopted a multi-source design, collecting data from employee self-reports (independent and control variables) and supervisor ratings (dependent variables). All instruments were translated to Japanese by two bilingual researchers fluent in both Japanese and English and then reviewed by an HR manager of the organisation. Both surveys were administered on Qualtrics, an online survey platform, and the HR manager distributed links to the survey website to participants via email.

I considered several approaches to matching individual responses from the two surveys. After a discussion with the HR manager of the organisation, I decided to use employee IDs as the key for data matching. Employees were asked to provide their own ID at the end of the survey, and supervisors were asked to provide the ID of the subordinate about whom they were going to answer at the beginning of the survey. As this procedure is prone to human error (respondents might make a mistake in answering the IDs), I asked a staff member from HR to check whether the IDs and other demographic information in the responses matched with their personnel records and to eliminate responses that did not match with personnel records. Both employees and supervisors were informed that the IDs were used only to match responses from two surveys and that individual responses were kept confidential. Among the 793 employees who received the invitation to the survey, 479 responded (response rate = 60.4%). The 439 usable samples were collected from 76 supervisors (on average, one supervisor rated 5.8 subordinates), resulting in a 55.4% final response rate.

4-4-3. Measures

Task performance, OCB-I and OCB-O. Five items for task performance and OCB-I, respectively, were taken from Williams and Anderson (1991). Five items for OCB-O were taken from Lee and Allen (2002). Sample items are “Fulfils responsibility specified in job description” (task performance), “Helps others who have a heavy work load” (OCB-I) and “Offers ideas to improve the functioning of the organization” (OCB-O). Supervisors were asked to rate how often the employee had demonstrated the behaviours during the past three months on 6-point Likert scale, ranging from 1 (never) to 6 (always).

NEO, REO and GEO. I used the same 20 items of SEO variables. All items were administered with a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Creditor ideology and reciprocity wariness. Three items for creditor ideology and reciprocity wariness were taken from Eisenberger et al. (1987). Items were chosen based on factor loadings in the analysis of the Japanese sample in Stage 4. All items were administered with a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Control variables. I included ***gender*** (1 = female, 0 = male), ***tenure*** (number of years in the organisation), ***employment contract types*** (indefinite contract, three-year fixed-term contract, and one-year fixed-term contract; the former two were coded as binary variables and the last was considered as the baseline) and ***job rank*** (professionals = 1, associates = 0), which were all self-reported.

4-5-4. Results

Measurement model. A series of CFAs was conducted to evaluate the measurement model, using MLM estimator on Mplus software version 7.31 (Muthén & Muthén, 1998-2012). The hypothesised model – which included SEOs (five first-order factors and 2nd-order GEN factor), reciprocity wariness and creditor ideology – obtained an acceptable fit ($\chi 2$ = 701.1, df = 286, p < .001, CFI = .93, TLI = .91, RMSEA = .06, SRMR = .07). Alternative models that combine two of the first-order factors resulted in a significantly worse fit ($\Delta\chi 2$ = 73.0 - 1148.4, df = 1-4, p < .01). This suggested that the measures tap distinct conceptual domains. Mean, standard deviation, correlations and Cronbach's alpha for variables are summarised in Table 4-9.

Hypothesis tests. As supervisors provided performance ratings (task performance, OCB-I and OCB-O) on multiple individuals, the cases are not mutually independent. To account for the non-independence, I analysed the data using a mixed-model linear regression (random intercept), clustering by managers. The analysis was conducted by STATA software version 14.2. I adopted the hierarchical regression approach; I first estimated a baseline model that included only creditor ideology, reciprocal wariness and demographic variables, and then I added NEO, REO and GEO, respectively, to the baseline model. Table 4-10, 4-11 and 4-12 summarise the results. Model 1, 5 and 9 were the baseline models for task performance, OCB-I and OCB-O, and model 2-4, 6-8 and 10-12 tested the impact of NEO, REO and GEO on these dependent variables, respectively. In addition to regression coefficients, standard errors and p-value, I reported -2 x log likelihood, difference in -2 x log-likelihood, estimates of covariate parameters and Pseudo R^2, calculated by a formula proposed by Raudenbush and Bryk (2002).

First, Table 4-10 reported the regression results for task performance. H4-10 predicted that NEO had positive effect on task performance. NEO, REO and GEO showed no significant effect on task performance (model 2, 3 and 4, respectively). Hence, H4-10 is not supported. In terms of control variables, the job rank had a positive significant effect ($p < .01$), and tenure and employment type 1 had a negative effect ($p < .10$ and $p < .05$, respectively) on task performance throughout the models.

Second, Table 4-11 shows the results for OCB-I. Model 6 showed NEO had negative significant effect on OCB-I ($p < .05$), and the inclusion of NEO to the baseline model resulted in a significant improvement in the model fit ($p < .10$). Hence, H4-11, which predicted NEO would have a negative effect on OCB-I, was supported. REO did not show significant effect. Although H4-8 predicted GEO has positive effect on OCB-I, model 8 did not provide support for this hypothesis. Job rank had a positive effect ($p < .01$), and employment type 2 had a significant negative effect ($p < .05$ - $.10$) throughout the models.

Finally, Table 4-12 shows the results for OCB-O. I predicted NEO would have a negative effect on OCB-O (H4-12) and GEO would have a positive effect (H4-9). Model 10 shows that NEO has a significant negative effect on OCB-O ($p < .01$), and the addition of NEO significantly improves the model fit ($p < .01$). Hence, H4-12 is supported. REO does not show a significant effect on OCB-O (model 11). GEO has a significant effect on OCB-O ($p < .05$) and inclusion of GEO significantly improved the model fit ($p < .05$) (model 12). Hence, H4-9 is supported. In terms of control variables, job rank has a positive effect ($p < .05$), and employment type 2 had a negative effect ($p < .01$-$.05$).

Creditor ideology and reciprocity wariness did not have significant effects on task performance and OCB-I, while the former showed a positive significant effect on OCB-O in model 9 and 10 ($p<.10$). The overall results show NEO and GEO have unique impacts on individual work performance beyond the existing constructs of individual orientation towards social exchange.

Table 4-9. Descriptive statistics and correlations of variables for incremental validity test

		Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Age	32.42	6.91														
2	Sex (Male = 1)	.46	.50	.01													
3	Tenure	4.74	4.45	**.64**	.03												
4	Employment type 1 (indefinite)	.58	.49	**-.18**	**.26**	.09											
5	Employment type 2 (3-year fixed term)	.14	.35	**-.27**	.04	**-.24**	**-.48**										
6	Job rank	.21	.41	**.14**	**.18**	**.36**	**.44**	**-.21**									
7	Creditor ideology	4.87	1.19	**-.10**	.09	-.09	.04	.05	-.02	(.94)							
8	Reciprocity wariness	2.75	1.37	**-.21**	**.11**	-.12	-.04	**.13**	-.04	**.18**	(.88)						
9	Negotiated exchange orientations	2.87	1.19	**-.11**	.03	-.13	-.06	.03	-.07	**.10**	**.54**	(.82)					
10	Reciprocal exchange orientation	5.30	.94	-.04	**.14**	-.04	.04	.00	.00	**.52**	-.09	-.01	(.82)				
11	Generalised exchange orientation	5.56	.72	.02	.09	-.04	.05	-.02	.03	**.44**	**-.24**	**-.22**	**.54**				
12	Task performance	4.74	.89	.01	-.06	-.06	-.06	.05	.05	-.01	-.02	.03	-.01	.01	(.93)		
13	OCB-I	3.88	1.11	**.14**	.07	**.18**	**.13**	**-.17**	**.23**	.00	-.08	**-.12**	.02	.05	**.37**	(.92)	
14	OCB-O	3.61	1.08	**.17**	.04	**.18**	**.15**	**-.22**	**.25**	.06	**-.10**	**-.12**	**.11**	**.13**	**.35**	**.73**	(.89)

n = 439. Correlation coefficients printed in bold are significant ($p < .05$). Scores in parenthesis are Cronbach's alpha.
Cronbach's alpha of generalised exchange orientation's first-order factors (UGI, PIF, RWR) are .78, .71 and .87, respectively.

Table 4-10. Results of mixed-model linear regression results (task performance)

	Model 1			Model 2			Model 3			Model 4		
	Coef.	S.E.	p-value	Coef.	S.E.	p-value	Coef.	S.E.	p-value	Coef.	S.E.	p-value
Intercept	5.17	.37	< .01**	5.16	.38	< .01**	5.19	.42	< .01**	5.12	.46	< .01**
Age	.00	.01	.66	.00	.01	.66	.00	.01	.65	.00	.01	.65
Sex	-.07	.08	.39	-.07	.08	.39	-.07	.08	.40	-.07	.08	.38
Tenure	-.02	.01	.07+	-.02	.01	.07+	-.02	.01	.07+	-.02	.01	.07+
Employment type 1	-.27	.13	.04*	-.26	.13	.05*	-.27	.13	.04*	-.27	.13	.04*
Employment type 2	.05	.19	.81	.05	.19	.79	.04	.19	.82	.05	.19	.81
Job rank	.39	.12	< .01**	.39	.12	< .01**	.39	.12	< .01**	.39	.12	< .01**
Creditor ideology	-.01	.03	.82	-.01	.03	.82	-.01	.04	.89	-.01	.04	.78
Reciprocity wariness	-.02	.03	.60	-.02	.03	.58	-.02	.03	.60	-.01	.03	.67
Negotiated exchange orientation				.01	.04	.84						
Reciprocal exchange orientation							-.01	.05	.92			
Generalised exchange orientation										.01	.06	.86
-2 x log likelihood	1069.75			1069.71			1069.74			1069.72		
Δ -2 x log likelihood				0.04		0.84*n.s.*	.01		.92*n.s.*	.03		.86*n.s.*
Estimates of covariance parameters												
Residuals	.75	.03		.75	.03	< .01**	.75	.03	< .01**	.75	.03	< .01**
Level 2 (manager)	.43	.05		.43	.05	< .01**	.43	.05	< .01**	.43	.05	< .01**
Pseudo R^2												
Level 1 (individual)	.04			.04			.04			.04		
Level 2 (manager)	.04			.04			.04			.04		

n = 439. ** significant at .01 level, * significant at .05 level, + significant at .10 level, *n.s.* non-significant.

Table 4-11. Results of mixed-model linear regression (OCB-I)

	Model 5			Model 6			Model 7			Model 8		
	Coef.	S.E.	p-value	Coef.	S.E.	p-value	Coef.	S.E.	p-value	Coef.	S.E.	p-value
Intercept	3.84	.47	< .01**	4.03	.48	< .01**	3.86	.54	< .01**	3.59	.59	< .01**
Age	.00	.01	.98	.00	.01	.98	.00	.01	.98	.00	.01	.95
Sex	.13	.11	.23	.13	.11	.23	.13	.11	.23	.13	.11	.25
Tenure	.01	.02	.37	.01	.02	.47	.01	.02	.37	.01	.02	.35
Employment type 1	-.09	.17	.58	-.12	.17	.47	-.09	.17	.58	-.09	.17	.57
Employment type 2	-.43	.23	.06+	-.46	.23	.04*	-.43	.23	.06+	-.43	.23	.06+
Job rank	.54	.15	< .01**	.55	.15	< .01**	.54	.15	< .01**	.54	.15	< .01**
Creditor ideology	.00	.04	.95	.00	.04	.96	.00	.05	.92	-.01	.05	.76
Reciprocity wariness	-.04	.04	.27	.00	.04	.92	-.04	.04	.28	-.03	.04	.43
Negotiated exchange orientation				-.10	.05	.05*						
Reciprocal exchange orientation							.00	.06	.94			
Generalised exchange orientation										.06	.08	.48
-2 log likelihood	1287.50			1283.77			1287.49			1287.01		
Δ -2 x log likelihood				3.73		.05*	.00		.95*n.s.*	.49		.49*n.s.*
Estimates of covariance parameters												
Residuals	1.00	.04	< .01**	.99	.04	< .01**	1.00	.04	< .01**	1.00	.04	< .01**
Level 2 (manager)	.38	.08	< .01**	.40	.08	< .01**	.38	.08	< .01**	.39	.08	< .01**
Pseudo R2												
Level 1 (individual)	.08			.09			.08			.09		
Level 2 (manager)	.05			.01			.04			.02		

n = 439. ** significant at .01 level, * significant at .05 level, + significant at .10 level, *n.s.* non-significant.

Table 4-12. Results of mixed-model linear regression (OCB-O)

	Model 9			Model 10			Model 11			Model 12		
	Coef.	S.E.	p-value	Coef.	S.E.	p-value	Coef.	S.E.	p-value	Coef.	S.E.	p-value
Intercept	3.06	.45	.00**	3.30	.45	.00**	2.81	.51	.00**	2.39	.56	.00**
Age	.00	.01	.68	.00	.01	.69	.01	.01	.62	.00	.01	.76
Sex	.06	.10	.57	.06	.10	.58	.04	.10	.68	.04	.10	.70
Tenure	.01	.02	.42	.01	.01	.55	.01	.01	.43	.01	.01	.34
Employment type 1	.02	.16	.91	-.02	.16	.90	.03	.16	.85	.01	.16	.94
Employment type 2	-.56	.22	.01*	-.61	.22	.01**	-.54	.22	.01*	-.57	.22	.01*
Job rank	.53	.14	< .01**	.54	.14	< .01**	.53	.14	.00**	.52	.14	< .01**
Creditor ideology	.08	.04	.06+	.07	.04	.06+	.05	.05	.31	.03	.05	.52
Reciprocity wariness	-.05	.04	.16	.01	.04	.87	-.04	.04	.27	-.02	.04	.55
Negotiated exchange orientation				-.12	.05	.01**						
Reciprocal exchange orientation							.06	.06	.29			
Generalised exchange orientation										.16	.08	.04*
-2 log likelihood	1236.27			1230.21			1235.16			1232.24		
Δ -2 x log likelihood				6.06		.01**	1.11		.29*n.s.*	4.03		.05*
Estimates of covariance parameters												
Residuals	.92	.03	< .01**	.91	.03	< .01**	.92	.03	< .01**	.92	.03	< .01**
Level 2 (manager)	.44	.07	< .01**	.46	.07	< .01**	.44	.07	< .01**	.45	.07	< .01**
Pseudo R2 (Bryk & Raudenbush)												
Level 1 (individual)	.11			.14			.12			.13		
Level 2 (manager)	.09			.01			.10			.04		

n = 439. ** significant at .01 level, * significant at .05 level, + significant at .10 level, *n.s.* non-significant.

4-5-5. Discussion

The analysis provided additional support for the discriminant validity of SEOs, showing that three facets of SEOs have differential relationships with individual performance measures. By employing multiple sources (i.e. self-report and supervisor rating), the findings are not prone to the common method bias (Podsakoff et al., 2003). Hence, this test provided strong evidence for the validity of SEOs.

In addition, the results demonstrated incremental validity of SEO measures in that NEO and GEO provide additional explanations of OCB-I and OCB-O beyond reciprocity wariness and creditor ideology. These results confirmed the benefits of introducing individual orientations to different regulatory mechanisms of social exchange by showing their impact on individual behaviours.

4-6. General discussion and conclusion

The five stages of analysis provided robust support to the proposed structure, in that (1) experts supported the content validity of the five first-order constructs (i.e., NEO, REO, UGI, PIF and RWR); (2) exploratory and confirmatory factor analyses showed that the five first-order factors are empirically distinct from each other and from existing measures (i.e., creditor ideology, reciprocity wariness, agreeableness, Machiavellianism and trust); (3) the 2nd-order factor that represented GEO explained the common variance of the three first-order sub-constructs; and (4) NEG, REC and GEN exhibited differential relationships with personality (agreeableness, Machiavellianism and neuroticism), trust (towards close colleagues and towards organisation members) and behaviours (OCB-I and OCB-O). In addition, the evidence showed that the proposed structure and factor loadings were invariant and intercepts were partially invariant across two distinct societal contexts, the US and Japan.

These findings support the two propositions I proposed in Chapter 2. First, individuals have distinct orientations towards the three forms of exchange ***(proposition 1)***. The results clearly show that the three orientations are distinct from one another, and individuals have different patterns of orientations towards the three forms of exchange. In addition, the new constructs are distinct from two key existing measures of individual orientations to social exchange, creditor ideology and reciprocity wariness (Eisenberger et al., 1987). Analysis of the nomological network showed that GEO, NEO and REO had distinct relationships with agreeableness, Machiavellianism, neuroticism and trust that are consistent with theoretical predictions. The results suggest a strong association between GEO and agreeableness, trust towards close colleagues and trust towards organisation members, providing some support to the prediction about the role of depersonalised trust ***(proposition 6)*** and prosocial personality ***(proposition 9)*** in the development of GEO. However, the analysis is based on cross-sectional data, and thus it does not warrant causal relationships between the variables. The analysis of incremental validity has shown that GEO and NEO provided an additional explanation to individual behaviours beyond creditor ideology and reciprocity wariness. To be specific, GEO was positively associated with OCB-O, whereas NEO was negatively associated with OCB-I and OCB-O. This provides initial support to the impact of GEO on discretionary behaviours (***proposition 3***) and further highlights the distinctness of the three orientations. This supports my argument that the different regulatory mechanisms are associated with different behaviours.

Second, GEO was manifested in the three lower-order orientations towards unilateral giving with expectations for indirect rewards, paying-it-forward and rewarding reputation ***(proposition 2)***. The fact that the structure was supported in multiple samples from different countries provides robust evidence that the three mechanisms of generalised exchange have a common underlying mechanism, namely the rule of collective reciprocity, whereas these mechanisms are proposed separately by different groups of scholars (Deckop et al., 2003; Nowak & Roch, 2007; Takahashi, 2000; Yamagishi et al., 1999) and have been treated as such (Baker & Bulkley, 2014; Westphal et al., 2012). Hence, this evidence marks an important step towards an integrated model of the regulating mechanism of generalised exchange. In addition, the proposition was supported by two datasets collected in distinct societies, and these results indicate initial evidence for the universality of the rule of collective reciprocity.

The test of measurement invariance suggests the new scales have configural, metric and partial scalar invariance between Japan and the US. Therefore, researchers can compare the results of multivariate analysis and mean across the two societies, while the post-hoc analysis of mean scores indicated that SEO measures might be prone to differences in response styles. This suggests that researchers should be cautious in interpreting the comparison of mean scores between the two countries. Differences in mean scores might not reflect the true differences in orientations between the two countries. While this topic is beyond the scope of this thesis, future research might benefit from incorporating a method to control for response patterns (e.g. Weijters et al., 2008).

Overall, the results of this chapter suggest that the new SEO scales are valid and reliable measures of individuals' orientations. This allows me to move towards empirical studies to analyse the antecedents and consequences of GEO. In the next chapter, I will investigate the former by longitudinal analysis, focusing on the impact of organisational context on the development of GEO.

Chapter 5. Antecedents of Generalised Exchange Orientation

In this chapter, I analyse the impact of contextual factors, such as job characteristics and social environment, on GEO. As discussed in Chapter 2, GEO and the other two facets of SEOs develop through direct experience and observation regarding benefits and risks of different forms of social exchange relationships and therefore prolonged exposure to a certain environment might result in changes in SEOs. I have proposed that contextual factors that blur self-interest and others' interests and increase the expectation for future return will promote GEO. Among the contextual factors that I proposed in Chapter 2, I will examine the impact of task interdependence (***proposition 5***), shared goals (***proposition 6***) and depersonalised trust (***proposition 7***) in this chapter.

I adopt the two-wave longitudinal panel model in this analysis. I expect that the initial levels of GEO vary among individuals due to individual dispositions and past experiences. The longitudinal panel model allows me to control for the initial levels of GEO and thus to analyse the impact of contextual factors of interest on GEO during the observation period. In addition, I analyse the impact of proposed contextual factors, not only on GEO but also on NEO and REO, in order to clarify whether these contextual factors have a unique effect on GEO.

To my knowledge, no empirical investigation has been conducted to examine potential changes in individual orientations to social exchange, although the impact of contextual factors on individual orientation towards generalised exchange has been predicted by various researchers for at least a decade (Adler & Kwon, 2002; Baker & Dutton, 2007; Evans & Davis, 2005; Flynn, 2005). The aim of this chapter is to provide a preliminary test of the propositions using a longitudinal panel dataset that consists of two repeated measurements over a year. As I mentioned in Chapter 3, it is recommended to conduct measurement at least three times in order to appropriately investigate change in organisational behaviours (Ployhart & Vandenberg, 2010), and therefore, a full investigation of the changes in GEO and the impact of organisational context cannot be provided in this chapter. However, the use of a longitudinal dataset provides some important advantages to this analysis, as it allows the researcher to control for the initial state of the dependent variable, to reduce the impact of factors unspecified in the model and to rule out the reverse causal explanation (Cole & Maxwell, 2003; Parker et al., 2014).

The chapter is structured as follows. First, I discuss the theoretical framework of the influence of contextual factors to GEO and then present the hypothesis. Second, I discuss how long it might take for GEO to change, referring to prior studies that investigated changes in individual beliefs and relevant constructs. Third, I introduce the methods, followed by a report of the results. Finally, I briefly discuss the implications of the findings and state concluding remarks.

5-1. Changes in GEO and its antecedents

GEO is defined as individuals' beliefs in favour of the rule of collective reciprocity at the workplace. Such beliefs develop through direct experiences and observation of interactions with other people in the workplace (cf. Eisenberger et al., 2001). This suggests GEO is a stable individual characteristic that results in a consistent pattern in individuals' reactions to social exchange situations in the workplace, but it is also malleable over time. As I discussed in Chapter 2, there are three psychological processes that might lead to change in such deeply held beliefs. First, exposure to a certain environment leads individuals to develop new goals, strategies and routines in order to deal with opportunities and challenges in the environment, and continued exposure to an environment leads such reactions to be generalised and habituated (Caspi et al., 2005). Second, repeated activations of certain knowledge constructs, such as beliefs, promote the accessibility levels of the constructs (Higgins, 1989; Higgins et al., 1982) and make individuals be more prone to social cues that activate the constructs (Higgins & Brendl, 1995). Third, exposure to an environment that contradicts with one's beliefs results in cognitive dissonance (Festinger, 1957). Although one might leave such an environment to resolve the dissonance, the prolonged exposure could result in changes in one's beliefs (Desai et al., 2014). These influences accumulate over time, leading to considerable change in individual beliefs and behavioural patterns in interactions with others in the workplace.

In this chapter, I will examine three contextual factors: task interdependence, shared goals and depersonalised trust. Task interdependence and shared goals are likely to blur the boundary between self-interest and others' interests and thus lead individuals to adopt the rule of collective reciprocity, by which individuals balance debt and credit in exchange relationships at the collective level, instead of balancing debt and credit with each individual. Depersonalised trust – the sense of trust towards organisation members in general – is likely to increase the expectation for return from indirect reciprocation and thus mitigate the risks of non-reciprocation, which is inherent in generalised exchange (Inaba & Takahashi, 2012; Molm et al., 2007).

5-1-1. Task interdependence

Under high levels of task interdependence, one requires interaction with other individuals to perform his/her job, and others also require interactions with him/her to perform their jobs (Kiggundu, 1981; Thompson, 1967; Van der Vegt, Emans & Van de Vliert, 2001). In other words, their tasks are mutually interconnected (Morgeson & Humphrey, 2006) and they need cooperation for successful delivery of their tasks. Hence, it is not surprising that high levels of task interdependence are found to promote the feeling of obligation to one another among co-workers (Pearce & Gregersen, 1991). In such a situation, individuals are likely to consider that successful delivery of their tasks is intertwined with the successful delivery of their colleagues' tasks; thus, their self-interest is no longer independent from others' interests. Frequent and repeated interactions promote familiarity and overlapped information among them (Gruenfeld et al., 1996; Rockett & Okhuysen, 2002), which will lead to a sense of shared fate (Adler & Kwon, 2002). Furthermore, frequent and repeated interactions ensure that individuals have a plenty of opportunities to receive resources from co-workers (Flynn, 2005). This reduces the perceived risks of non-reciprocation. Hence, exposure to high levels of task interdependence will lead one to apply the rule of collective reciprocity and eventually result in the promotion of GEO over time. On the other hand, low levels of task interdependence mean that individuals can carry out their tasks without interacting with co-workers and that the successful delivery of their tasks depends on individual efforts. Such a situation is likely to lead individuals to focus on their own tasks, with little need to pay attention to others. Hence, it is not likely that they apply the rule of collective reciprocity in interactions with others, and this will weaken GEO in the long run.

H5-1: Perceived task interdependence promotes GEO over time.

There are criticisms towards the subjective measurement of job characteristics. First, the subjective measurement of job characteristics is not free from the influence of individual dispositions (Judge & Kammeyer-Mueller, 2012). For example, Judge, Bono and Locke (2000) found that individuals' core self-evaluation has a significant impact on the perceived job characteristics after controlling for objective evaluation of job complexity. Second, studies that analyse the association between subjective job characteristics and individual attitudes (e.g. satisfaction) were criticised for potential influence of common method variance in their findings (Glick, Jenkins & Gupta, 1986). Although I recognise these criticisms, I judge that the subjective measure of task interdependence is appropriate in this study for two reasons. First, the three explanations to changes in individual characteristics (generalisation, knowledge activation and cognitive dissonance) all point to the fact that the cognitive process is involved in the process of change. Therefore, even if individuals are exposed to high levels of objective task interdependence, the exposure might not have impact on their GEO unless they subjectively recognise the task interdependence. Second, as multiple waves of surveys were used in this study to collect data, I can reduce the influence of common method variance (Podsakoff et al., 2003).

5-1-2. Perceived shared goals

I have proposed that shared goals promote GEO by blurring the line between self-interest and others' interests. Shared goals serve as a common framework to interpret the surrounding situations (Fussell & Krauss, 1989) and lead individuals to transcend individual interests (Bass, 1999; Shamir et al., 1993) and to adopt a broad view of the collective (Carton et al., 2014). This triggers a shift of cognitive focus from "local" to "global" (Senge & Sterman, 1992) by which an individual recognises that his/her work is interconnected with others as an integral part of a larger mechanism. Such cognition of shared interests and interdependence encourages individuals to engage in taking the perspective of others (Weick and Roberts, 1993), which blurs the boundaries between self-interest and others' interests, by allowing them to see that others have "merged" with themselves (Davis et al., 1996). Prolonged exposure to an environment where one shares goals with co-workers will repeatedly stimulate application of the rule of collective reciprocity, leading to promotion of GEO. On the other hand, the lack of shared goals highlights the individual's own goals and thus hinders the application of the rule of collective reciprocity.

H5-2: Perceived shared goals promote GEO over time.

5-1-3. Depersonalised trust

Depersonalised trust refers to the positive expectation towards surrounding people in general (Kramer, 1999), in contrast to target-specific trust, which refers to the positive expectation towards a specific individual. When one trusts other people, one feels and considers that others will treat him/her positively even without monitoring or enforcement and that he/she can be vulnerable to them (Mayer et al., 1995). Hence, trust reduces concerns for non-reciprocation (Yamagishi & Cook, 1993), while generalised exchange is inherently prone to free-riding (Inaba & Takahashi, 2012; Takahashi, 2000). Depersonalised trust typically develops based on organisational mechanisms, such as established rules and norms in an organisation (Fine & Holyfield, 1996). Exposure to such an environment increases the potential benefit of applying the rule of collective reciprocity in interactions with others, thus leading to repeated application of the rule, which will eventually result in the promotion of GEO. On the other hand, a lack of depersonalised trust makes it risky to apply the rule of collective reciprocity and will thus deteriorate GEO over time.

H5-3: Depersonalised trust promotes GEO over time.

5-2. Speed of change

An important question in any research about change is how fast change might occur (Mitchell & James, 2001; Ployhart & Vandenberg, 2010). The speed of change varies significantly by the nature of the construct that researchers look at. A key consideration is whether the construct of interest is a state or trait. State is an ephemeral characteristic of an individual that changes frequently, even within a day in accordance with events and situations that one encounters (Judge, Thoresen, Bono & Patton, 2001; Weiss & Cropanzano, 1996). Studies in which researchers investigated such fluid individual attitudes and their consequences typically observed day-to-day changes or even hour-to-hour changes in the constructs of interest (e.g. Ilies, Scott & Judge, 2006). On the other hand, traits are defined as stable individual characteristics, and researchers have traditionally assumed traits (e.g. personality traits) to be fixed in adulthood: it becomes "set like plaster" as one becomes adult, while it might change in an earlier period of life through maturation (Costa Jr & McCrae, 1994; Srivastava, John, Gosling & Potter, 2003). Although researchers in recent studies have revealed that trait-like constructs can change much more quickly than previously thought, they typically observed the subject over multiple years (e.g. Boyce et al., 2015; Frese et al., 1996; Li et al., 2014).

There is no direct reference that I can rely on in deciding the time frame to analyse changes in GEO, as prior studies have assumed individual orientations to social exchange to be trait-like stable characteristics and have not investigated changes. Hence, I refer to several studies where researchers investigated changes in belief-related constructs. First, Desai et al. (2014) examined changes in one's beliefs about gender roles in the workplace and the impact of marriage pattern (traditional marriage vs. dual-earner marriage). It was assumed in this study that experiences in marriage life influence the male participants' beliefs about women's roles in the workplace, and significant changes were found over two years. Second, Burkhardt (1994) analysed how social influence from co-workers shapes individuals' beliefs about their ability to competently use computers. One year was assumed in this study to be an observation period, and evidence for significant changes in individual beliefs over the period was found. Third, Rousseau (1989) defined psychological contract as individuals' beliefs about reciprocal exchange relationships between the focal individual and others and analysed changes in psychological contract over a two-year period (Robinson et al., 1994). The following scholars who study psychological contract have generally assumed that changes in psychological contract take place in a range from six months to a couple years (e.g. Bankins, 2015; Conway & Coyle-Shapiro, 2012). Based on these findings, I assume that changes in SEOs require exposure to an environment for a considerable period of time (e.g. a year) to materialise. Although there is a theoretical proposal that dramatic events might cause a rapid change in individual attitudes towards social exchange relationships (Ballinger & Rockmann, 2010), I assume such experience might not happen so often in organisational life, and that is probably why such experiences are dramatic and thus have significant impact on individuals.

5-3. Methods

5-3-1. Participants and procedure

The dataset was collected in a large HRM professional firm in Japan, an organisation in which I collected data for stage 5 of Chapter 4. While I used responses from front-line employees and their supervisors in Chapter 3, I only used responses from front-line employees in this study. I included only employees who have at least three months of experience in the organisation and who have gone through the initial training period in the organisation. Although socialisation studies typically consider the initial one-year period as the key socialisation period (Allen, 2006; Feldman, 1994), a rapid adjustment process typically occurs in the first several months after the entry (Cooper-Thomas & Anderson, 2005), and the impact of socialisation practices is gradually replaced by other stimuli from the work experiences (Ashforth & Saks, 1996). Hence, excluding the newcomers with less than three months of experience allows me to limit the impact of the socialisation process on participants' orientations.

As I mentioned in Chapter 3, I collected data through two waves of self-report surveys. Two bilingual researchers who are fluent in both English and Japanese translated the instruments, adopting the back-translation procedure (Brislin, 1970). I consulted with the HR manager of the unit to ensure the instruments make sense in the organisations' context. The first wave took place in November 2015 (T1) and the second in November 2016 (T2). Interviews with senior managers of the organisation confirmed there were no major organisational interventions (e.g. work redesign) that might significantly affect contextual factors of interest during the period. In the first wave, 793 employees received the invitation to the survey, and 479 responded to the initial wave (response rate = 60.4%). Among them, 243 responded to the second wave, resulting in a final response rate = 30.6%. As this relatively low retention rate of participants raises concern about response bias in the resulting sample, I will conduct detailed examination of response bias later.

5-3-2. Measures

The two waves of surveys included the same set of independent and dependent variables. All scale items were administered with a 7-point Likert scale ranging 1 from (strongly disagree) to 7 (strongly agree).

Perceived task interdependence. Task interdependence was measured by two items from Van der Vegt et al. (2001) and one item from (Morgeson & Humphrey, 2006). The sample item is "In order to complete my work, I had to exchange information and advice with colleagues".

Perceived shared goals. Three items are adopted from a scale that concerns one's perception about the extent that members of the organisation share common goals (Jehn, 1995). Sample item is "As [name of the organisation], we have similar goals".

Depersonalised Trust. Depersonalised trust is measured by three items taken from Molm et al. (2007). The sample item is "People in [name of the organisation] are trustworthy".

NEO, REO and GEO. SEOs are measured by the 20 items developed in Chapter 4.

Control variables. I included ***age***, ***gender*** (1=female, 0=male), ***employment contract types*** (indefinite contract, three-year fixed-term contract and one-year fixed term contract; the former two were coded as binary variables and the last were considered as baseline) and ***job rank*** (professionals = 1, associates = 0), which are all self-reported at T1. Individuals with different ages and genders might experience the work environment differently (e.g. Boyce et al., 2015). In addition, individuals in different contract types, job ranks and tenure might be exposed to different types of organisational practices, which might influence social cues they receive from the surrounding context (cf. Millward & Brewerton, 1999; Van Dyne & Ang, 1998).

5-4. Results

5-4-1. Response check

I checked response bias by several means. First, I consulted with the HR manager of the organisation to review if there are recognisable differences between the distribution of demographic characteristics (age, gender, employment contract type and job rank) in the respondents of the first wave and the population distribution. The manager confirmed there were no major differences. Second, I compared the distribution of these demographic characteristics between those who responded to both waves and those who only responded to the first wave by a chi-square test (for binary variables) and independent sample t-test (for continuous variables). Again, there was no significant difference (p>.10). Finally, I compared the mean scale scores of dependent and independent variables in the first wave between the two groups. Although there was no significant difference in GEO, NEO, REO, task interdependence and shared goals (p>.10), significant difference was found in depersonalised trust (p<.05). Those who responded to both waves showed a higher mean score (5.25) than those who responded only to the first wave (5.02). I suspect this gap might have stemmed from higher turnover among those who had low depersonalised trust at the time of the first wave, because co-worker trust is found to be positively associated with affective commitment and negatively associated with turnover intention (Ladebo, 2006). The HR manager confirmed this explanation, pointing out that there was more turnover among those with low levels of depersonalised trust than those with high levels of trust. According to the HR manager of the organisation, the organisation experienced a significantly higher turnover rate than previous years due to the tight labour market in Japan. Japan has experienced increasingly high levels of skill shortage in recent years, and ManpowerGroup (2016) reported that it is one of the severest in the world.

Taken together, it is suggested through this evidence that the resulting sample is largely representative of the population, while voluntary turnover appears to have caused the sample to be concentrated to those who had relatively high levels of depersonalised trust at the time of the first wave.

5-4-2. Measurement model

A series of CFA was conducted to check the measurement model and longitudinal measurement invariance of scales across observations. The analysis is conducted on Mplus 7.31 software (Muthén & Muthén, 1998-2012), using the MLM estimator.

First, I analysed a model with eight first-order factors (NEO, REO, UGI, PIF, RWR, task interdependence, perceived shared goals and depersonalised trust) separately for the first and second waves. Both analyses showed acceptable fit (first wave: $\chi 2 = 573.5$, df = 349, p <.01, CFI = .93, TLI = .92, RMSEA = .05, SRMR = .06; second wave: $\chi 2 = 530.9$, df = 349, p <.01, CFI = .95, TLI = .94, RMSEA = .05, SRMR = .06). Alternative seven-factor models, in which two of the eight first-order latent variables are collapsed into one variable, show significantly worse fit in both waves (first wave: $\Delta\chi 2$ = 75.2-731.0, Δdf = 7, p<.001; second wave, $\Delta\chi 2$ = 54.0-536.3, Δdf = 7, p<.001), suggesting that the first-order factors are distinct from one another.

Second, in order to examine the second-order structure, I introduced a second-order factor of GEO to the analysis of two datasets. Again, the models show acceptable fit (first wave: $\chi 2 = 599.8$, df = 359, p <.01, CFI = .93, TLI = .92, RMSEA = .05, SRMR = .07; second wave: $\chi 2 = 576.0$, df = 359, p <.01, CFI = .94, TLI = .93, RMSEA = .05, SRMR = .07). Alternative models, in which task interdependence, depersonalised trust or perceived shared goals was loaded onto GEO, showed significantly worse fit (first wave: $\Delta\chi 2$ = 23.3-68.1, Δdf = 4, p<.001; second wave, $\Delta\chi 2$ =10.2-66.7, Δdf = 4, p<.05). Hence, the three variables are distinct from GEO.

Finally, I examined the longitudinal invariance of measurement by a series of CFA. Following the recommendations by Little (2013), I parcelled items for GEO in order to improve the reliability of analysis in the following analyses. Parcelling is appropriate when the dimensionality of variables is confirmed (Little, Cunningham, Shahar & Widaman, 2002). I created three parcels, each of which corresponds to UGI, PIT and RWR, adopting the internal-consistency approach (Kishton & Widaman, 1994) that uses first-order factors as parcelling criteria. This approach has advantage in maintaining the multidimensional nature of higher-order factors (in this case, GEO) (Little et al., 2002). The procedure is similar to the test of measurement invariance across groups, which I conducted in Chapter 4. This procedure tests three models: (1) a configural invariance model, which only imposes the same factor structure; (2) a metric invariance model, which imposes equality of factor loadings; and (3) a scalar invariance model, which introduces the equality of intercepts of scale items. In order to account for multiple measurements of indicators, residual variances of corresponding indicators were allowed to correlate in all models (Little, 2013). Measurement invariance is achieved when a more restrictive model does not show statistically worse fit than a less restrictive one, in terms of ΔCFI (<.01) and chi-square difference ($p<.05$) (Vandenberg & Lance, 2000).

The results are shown in Table 5-1. Although the configural invariance model shows acceptable fit, the following models show slightly better fit in TLI. Throughout the three stages, both $\Delta\chi 2$ and ΔCFI did not indicate significant differences. Hence, strong longitudinal measurement invariance is supported.

Descriptive statistics, correlation and reliability of variables are summarised in Table 5-2. The mean scores of dependent and independent variables do not show substantial differences between T1 and T2. Paired t-tests support this observation, showing no significant mean differences between T1 and T2 across all variables ($p>.10$). The test-retest correlation of GEO, NEO and REO is .54, .39 and .49. Given that the test-retest correlations of Big Five personality traits are around .55 in the middle-age population (Roberts & DelVecchio, 2000), this appears to support my assumption that SOEs are relatively stable individual characteristics. In addition, hypothesised antecedents also have a relatively strong correlation between T1 and T2 (from .44 to .49), suggesting certain levels of stability in contextual factors over the observation period.

Table 5-1: Results of longitudinal measurement invariance test

	Model fit							Model comparison					
	$\chi 2$	df	p	CFI	TLI	RM SEA	SRMR	Model	$\Delta\chi 2$	Δdf	p	sig.	ΔCFI
1) Configural invariance	1022.5	654	<.001	.93	.91	.05	.06						
2) Metric invariance	1036.0	668	<.001	.93	.92	.05	.06	1	13.55	14.00	.48	*n.s.*	<.01
3) Scalar invariance	1056.0	682	<.001	.93	.92	.05	.06	2	19.78	14.00	.14	*n.s.*	<.01

$\chi 2$ is Sattora-Bentler mean-adjusted Chi-square score. $\Delta\chi 2$ is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor.
n.s. not significant.

Table 5-2: Descriptive statistics, correlation and reliability

			Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Age		32.61	6.89																
2	Sex		.49	.50	-.04															
3	Employment type 1		.58	.49	**-.18**	**.31**														
4	Employment type 2		.09	.29	**-.23**	.11	**-.38**													
5	Job rank		.21	.41	**.20**	**.14**	**.43**	**-.16**												
6	Task interdependence	(T1)	5.24	1.14	**.16**	.06	.09	-.08	**.15**											
7		(T2)	5.24	1.15	**.14**	**.22**	**.17**	-.08	**.14**	**.44**										
8	Shared goals	(T1)	4.43	1.18	.05	.02	.01	.02	-.04	**.27**	**.16**									
9		(T2)	4.37	1.29	-.03	.05	.01	.02	.03	.11	**.16**	**.44**								
10	Depersonalised trust	(T1)	5.24	1.08	.02	.04	.10	.00	.00	**.28**	**.14**	**.54**	**.27**							
11		(T2)	5.28	1.10	.01	-.01	.12	-.03	.00	**.14**	.10	**.32**	**.48**	**.49**						
12	GEO	(T1)	5.57	.72	-.03	-.01	.06	.00	.08	**.22**	.08	**.17**	.06	.28	**.12**					
13		(T2)	5.62	.66	**-.15**	.03	.09	.04	.02	**.19**	**.17**	**.13**	.12	**.29**	**.29**	**.54**				
14	NEO	(T1)	2.83	1.19	-.09	.06	-.05	-.05	-.01	.00	-.02	-.11	-.01	**-.24**	**-.13**	**-.21**	-.11			
15		(T2)	2.77	1.17	**-.20**	.06	-.06	.06	-.06	-.10	-.09	-.10	-.04	**-.19**	**-.17**	**-.15**	-.09	**.39**		
16	REO	(T1)	5.30	.95	**-.15**	.09	.00	.10	-.03	.04	.01	-.03	-.05	.04	-.05	**.53**	**.36**	.04	.02	
17		(T2)	5.32	.90	**-.21**	.05	.03	.10	.00	.03	.06	.07	.08	**.18**	**.13**	**.34**	**.56**	.00	.09	**.49**

n = 243. Correlation coefficients printed in bold are significant (p<.05). Scores in parenthesis are Cronbach's alpha.
Scores on diagonal are Cronbach's alpha. Cronbach's alpha for GEO's sub-dimensions are PIT .88, UGI ,81, RWR .85 (T1), PIT .88 UGI .78, RWR .88 (T2)

5-4-3. Hypothesis test: antecedents and changes in GEO

In order to test the hypotheses, I estimated two-wave longitudinal panel models with GEO and one of the hypothesised antecedents at T1 and T2. Following the previous section, I used MLM estimator on Mplus software version 7.31.

In each hypothesis, I examine four models. Each model includes a hypothesised antecedent and GEO at T1 and T2 and control variables that are measured at T1. The first model includes autoregressive paths that connect latent variables (hypothesised antecedent and GEO) at T1 and T2 and paths from control variables to latent variables at T2. Latent variables at T1 and T2, respectively, are correlated in order to account for zero-order correlation (T1) and residual correlation (T2). This is the baseline model, as it does not include cross-lagged paths that represent relationships between different variables. Second, I introduce a cross-lagged path from the antecedent at T1 to GEO at T2 in order to test the hypothesis. As the model control for the effect of GEO at T1 on GEO at T2 by the autoregressive path, the cross-lagged effect represents the relationship between the antecedent and the temporal change in GEO from T1 to T2 (Finkel, 1995). I call this model the hypothesised model. Figure 5-1 shows the hypothesised model for H5-1. For ease of presentation, measurement models and control variables are omitted. Third, the reverse causation model includes a cross-lagged path from GEO at T1 to the antecedent at T2 in addition to the baseline model. This cross-lagged path represents the relationship between GEO at T1 and temporal change in the antecedent, and, hence, the model allows us to examine reverse causality. Finally, I examine the saturated model, which includes both cross-lagged paths. This model is used to examine if the hypothesised model provides a parsimonious explanation of the relationships among variables (Little, 2013). I conducted a chi-square test in order to compare the relative fit of these alternative models.

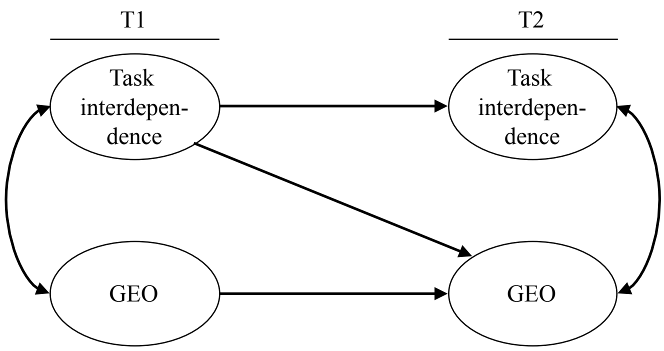


Figure 5-1. Analytical model with autoregressive paths and hypothesised path for task interdependence (H5-1)

The results are shown in Table 5-3. This includes information about model fit, results of model comparison, path coefficients of autoregressive and cross-ragged paths and their significance. Model 1-4, 5-8 and 9-12 analyse the relationships between GEO and task interdependence, depersonalised trust and shared goals, respectively. All models show acceptable fit. In all cases, autoregressive models (1, 5, 9) show significant autoregressive relationships between latent variables at T1 and T2. Regarding task interdependence, the cross-lagged path from task interdependence to GEO is positive and significant ($p<.05$) in both model 2 and 4. Hence, H5-1 is supported. Model 3 and 4 show the cross-lagged path from GEO to task interdependence is not significant ($p>.10$), ruling out the reverse causal explanation. Model 2 fits significantly better than Model 1 ($p<.10$), and Model 4 does not fit better than Model 2; hence, the hypothesised model offers the most parsimonious explanation of the relationships among the variables.

The impact of perceived shared goals (H5-2) is not supported. Model 6 and 8 indicate the cross-lagged path from perceived shared goals to GEO is not significant ($p>.10$). Model 7 and 8 also show the reverse causal path is not significant ($p>.10$). Hence, the data do not provide evidence for the longitudinal relationships between shared goals and GEO.

The results for depersonalised trust (model 9-12) support the prediction (H5-3). Model 10 and 12 show that the path from depersonalised trust to GEO has a positive and significant coefficient ($p<.05$). Hence, H5-3 is supported. Model 11 and 12 show the cross-lagged path from GEO to depersonalised trust is not significant ($p>.10$). Hence, reverse causation was ruled out. Model comparison results suggest the hypothesised model provides a parsimonious explanation of the relationships between the variables.

In terms of control variables, no variable shows a significant effect on GEO at T2 throughout the models. This suggests the development of GEO is not affected by these demographic characteristics and is rather dependent on the organisational context to which each individual is exposed.

Table 5-3. Results of longitudinal panel model analysis (GEO)

		Model Fit							Model Comparison					Path coefficient and significance							
	Task interdependence (TI)	χ2	df	p	CFA	TLI	RMSEA	SRMR	Model	Δχ2	Δdf	p	sig.	GEO =>GEO		TI =>TI		TI =>GEO		GEO =>TI	
1	Autoregression	151.41	112	.01	.97	.96	.04	.06						.57	**	.43	**				
2	Hypothesised	147.20	111	.01	.97	.96	.04	.06	1	3.54	1.00	.06	+	.52	**	.45	**	.09	*		
3	Reverse causation	151.54	111	.01	.96	.96	.04	.06	1	.07	1.00	.78	n.s.	.56	**	.44	**			-.03	n.s.
4	Saturated	147.28	110	.01	.97	.96	.04	.06	2	.12	1.00	.72	n.s.	.52	**	.46	**	.09	*	-.04	n.s.
	Shared goals (SG)	χ2	df	p	CFA	TLI	RMSEA	SRMR	Model	Δχ2	Δdf	p	sig.	GEO =>GEO		SG =>SG		SG =>GEO		GEO =>SG	
5	Autoregression	145.54	112	.02	.98	.97	.04	.04						.56	**	.53	**				
6	Hypothesised	145.04	111	.02	.98	.97	.04	.04	9	.47	1	.49	n.s.	.55	**	.53	**	.02	n.s.		
7	Reverse causation	144.81	111	.02	.98	.97	.04	.04	9	.72	1	.40	n.s.	.55	**	.54	**			-.10	n.s.
8	Saturated	144.31	110	.02	.98	.97	.04	.04	10	.72	1	.40	n.s.	.54	**	.54	**	.02	n.s.	-.10	n.s.
	Depersonalised trust (TR)	χ2	df	p	CFA	TLI	RMSEA	SRMR	Model	Δχ2	Δdf	p	sig.	GEO =>GEO		TR =>TR		TR =>GEO		GEO =>TR	
9	Autoregression	147.53	112	.01	.98	.98	.04	.05						.56	**	.45	**				
10	Hypothesised	143.62	111	.02	.98	.98	.04	.04	5	3.88	1	.05	*	.51	**	.48	**	.06	*		
11	Reverse causation	147.51	111	.01	.98	.98	.04	.05	5	.04	1	.85	n.s.	.56	**	.45	**			-.02	n.s.
12	Saturated	143.50	110	.02	.98	.98	.04	.04	6	.13	1	.72	n.s.	.51	**	.49	**	.07	*	-.04	n.s.

n= 243. ** significant at .01 level, * significant at .05 level, + significant at .10 level, n.s. non-significant.

χ2 is Sattora-Bentler mean-adjusted Chi-square score. Δχ2 is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor.

5-4-4. Supplemental analysis: antecedents and changes in NEO and REO

As mentioned above, I also test the influence of antecedents on changes in NEO and REO in order to examine if contextual factors have unique influence on GEO. I followed the same procedure as I described above in analysing the relationships between contextual factors and NEO and REO. Table 5-4 and 5-5 show the results of analyses for NEO and REO, respectively. Table 5-4 shows that hypothesised antecedents of GEO do not have a significant impact on changes in NEO from T1 to T2. Model 6 and 8 in Table 5-5 show that depersonalised trust has a positive significant effect on REO ($p<.05$). Task interdependence and perceived shared goals, which I proposed to promote GEO through blurring the boundary between self-interest and others' interests, did not show a significant impact on REO. This is also consistent with the discussion in Chapter 2 because the blurred line between self-interest and others' interests is uniquely associated with the rule of collective reciprocity. Taken together, these results indicate that the proposed contextual factors have a differential impact on NEO, REO and GEO.

In terms of control variables, age has a negative significant effect on NEO and REO throughout the models ($p<.05$-$.10$), whereas it did not have an effect on GEO. Other control variables did not show significant effect on any of the SEO variables.

Table 5-4. Results of longitudinal panel model analysis (NEO)

	Model fit							Model comparison					Path coefficient and significance							
Task interdependence (TI)						RM							NEO		TI		TI			
	χ2	df	p	CFI	TLI	SEA	SRMR	Model	Δχ2	Δdf	p	sig.	=>NEO		=>TI		=>NEO		=>TI	
1 Autoregression	167.87	138	.04	.98	.97	.03	.05						.35	**	.45	**				
2 Hypothesised	166.38	137	.04	.98	.97	.03	.05	1.00	1.53	1	.22	n.s.	.35	**	.45	**	-.09	n.s.		
3 Reverse causation	167.61	137	.04	.98	.97	.03	.05	1.00	.25	1	.62	n.s.	.35	**	.45	**			.02	n.s.
4 Saturated	166.10	136	.04	.98	.97	.03	.05	2.00	.26	1	.61	n.s.	.35	**	.45	**	-.09	n.s.	.03	n.s.
Shared goals (SG)						RM							NEO		SG		SG		NEO	
	χ2	df	p	CFI	TLI	SEA	SRMR	Model	Δχ2	Δdf	p	sig.	=>NEO		=>SG		=>NEO		=>SG	
5 Autoregression	15.55	114	.01	.98	.97	.04	.05						.35	**	.55	**				
6 Hypothesised	149.88	113	.01	.98	.97	.04	.05	9.00	.57	1	.45	n.s.	.34	**	.55	**	-.05	n.s.		
7 Reverse causation	15.99	113	.01	.98	.97	.04	.05	9.00	.01	1	.93	n.s.	.35	**	.55	**			.00	n.s.
8 Saturated	15.32	112	.01	.98	.97	.04	.05	1.00	.00	1	>.99	n.s.	.34	**	.55	**	-.05	n.s.	.00	n.s.
Depersonalised trust (TR)						RM							NEO		TR		TR		NEO	
	χ2	df	p	CFI	TLI	SEA	SRMR	Model	Δχ2	Δdf	p	sig.	=>NEO		=>TR		=>NEO		=>TR	
9 Autoregression	205.73	138	<.01	.97	.96	.05	.05						.35	**	.49	**				
10 Hypothesised	204.55	137	<.01	.97	.96	.05	.04	5.00	1.24	1	.27	n.s.	.32	**	.50	**	-.09	n.s.		
11 Reverse causation	205.82	137	<.01	.97	.96	.05	.05	5.00	.19	1	.66	n.s.	.35	**	.48	**			-.03	n.s.
12 Saturated	204.68	136	<.01	.97	.96	.05	.04	6.00	.16	1	.69	n.s.	.32	**	.49	**	-.09	n.s.	-.03	n.s.

n= 243. ** significant at .01 level, * significant at .05 level, + significant at .10 level, n.s. non-significant.
χ2 is Sattora-Bentler mean-adjusted Chi-square score. Δχ2 is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor.

Table 5-5. Results of longitudinal panel model analysis (REO)

	Model fit							Model comparison					Path coefficient and significance							
Task interdependence (TI)	χ2	df	p	CFI	TLI	RMSEA	SRMR	Model	Δχ2	Δdf	p	sig.	REO =>REO		TI =>TI		TI =>REO		REO =>TI	
1 Autoregression	167.87	143	.08	.99	.98	.03	.06						.41	**	.42	**				
2 Hypothesised	166.06	142	.08	.99	.98	.03	.06	1	1.71	1	.19	n.s.	.41	**	.42	**	.08	n.s.		
3 Reverse causation	167.93	142	.07	.98	.98	.03	.06	1	.01	1	.91	n.s.	.41	**	.42	**			.01	n.s.
4 Saturated	166.11	141	.07	.99	.98	.03	.06	2	.01	1	.90	n.s.	.41	**	.42	**	.08	n.s.	.01	n.s.
Shared goals (SG)	χ2	df	p	CFI	TLI	RMSEA	SRMR	Model	Δχ2	Δdf	p	sig.	REO =>REO		SG =>SG		SG =>REO		REO =>SG	
5 Autoregression	170.65	143	.06	.99	.98	.03	.05						.41	**	.54	**				
6 Hypothesised	169.43	142	.06	.99	.98	.03	.05	9	1.21	1	.27	n.s.	.41	**	.54	**	.07	n.s.		
7 Reverse causation	170.32	142	.05	.99	.98	.03	.05	9	.15	1	.70	n.s.	.41	**	.54	**			-.03	n.s.
8 Saturated	169.11	141	.05	.99	.98	.03	.05	10	.14	1	.71	n.s.	.41	**	.54	**	.07	n.s.	-.03	n.s.
Depersonalised trust (TR)	χ2	df	p	CFI	TLI	RMSEA	SRMR	Model	Δχ2	Δdf	p	sig.	REO =>REO		TR =>TR		TR =>REO		REO =>TR	
9 Autoregression	195.70	143	<.01	.98	.97	.04	.06						.42	**	.48	**				
10 Hypothesised	188.54	142	.01	.98	.98	.04	.05	5	5.77	1	.02	*	.40	**	.50	**	.15	*		
11 Reverse causation	194.81	142	<.01	.98	.97	.04	.06	5	.87	1	.35	n.s.	.41	**	.49	**			-.06	n.s.
12 Saturated	187.61	141	.01	.98	.98	.04	.05	6	.92	1	.34	n.s.	.40	**	.51	**	.15	*	-.06	n.s.

n= 243. ** significant at .01 level, * significant at .05 level, + significant at .10 level, n.s. non-significant.
χ2 is Sattora-Bentler mean-adjusted Chi-square score. Δχ2 is calculated by a formula proposed by Satorra and Bentler (2001), considering scaling correction factor.

5-5. Discussion

Preliminary evidence has been presented from this analysis for the impact of contextual factors on GEO. A panel longitudinal model on SEM framework was utilised, which incorporated independent and dependent variables at T1 (the first wave of the surveys) and T2 (the second wave) and autoregressive paths. This model has allowed me to analyse the impact of independent variables (contextual antecedents) on the dependent variables (GEO and the other two facets of SEOs) controlling the initial levels of the dependent variables. This is important because it is likely that individuals develop general, baseline orientations to different forms of social exchange through interactions with close people, such as family and friends, in their early stages of life and bring such orientations to the workplace. Although we can investigate how the organisational context could shape individuals' SEOs by examining changes in SEOs before and after their entry into organisations as newcomers, such a design cannot help investigate the impact of organisational context on existing employees' SEOs, which should be more informative for organisations in designing organisational intervention to shape employees' orientations and resulting behaviours. As such, I applied a panel longitudinal design to employees with various tenures in the organisation and controlled for their SEOs at T1 when examining the effects of contextual antecedents (i.e. task interdependence, shared goals and depersonalised trust) on employees' SEOs at T2. This design helped me to focus solely on the changes of SEOs at the workplace in a specific employment period and the role of the organisational context in leading such change. In addition, this design also helped rule out reverse causality. Although I only have two time measures, which is not sufficient to fully examine the phenomena of change (Ployhart & Vandenberg, 2010), the current finding at least indicates the possibility that the organisational context might cause changes in the pattern of SEOs in a one-year time frame.

The results suggest that individuals who perceived that their co-workers were generally trustworthy and considered that their jobs were highly interdependent with others at T1 tended to show higher levels of GEO at T2. The opposite influence from GEO to hypothesised antecedents is not supported. In addition, the differential effects of contextual factors on SEOs indicate that exposure to high levels of depersonalised trust and high task interdependence results in individuals changing the profile of orientations to the three forms of social exchange and, thus, increasingly coming to prefer generalised exchange to other forms. To my knowledge, this is the first study to show empirical evidence of longitudinal change in individual orientations to social exchange. Scholars have treated individual orientations to social exchange, such as exchange ideology and reciprocity wariness, as stable, dispositional characteristics and have not considered potential changes in the orientations, even in longitudinal studies that span multiple years (e.g. Coyle-Shapiro, 2002; Coyle-Shapiro & Neuman, 2004). This has implications for future longitudinal studies in the social exchange literature because individuals might change their orientations to social exchange during a study.

The differences between the results for GEO and those for REO are consistent with prior conceptual discussions by Flynn (2005). He proposed that individuals are more likely to increase preference towards reciprocal and generalised social exchange by experiencing positive exchange episodes, and they are more likely to develop preference towards generalised exchange when they interact with a wide range of co-workers rather than a limited number of co-workers. Positive experiences in social exchange relationships are likely to increase trust towards exchange partners (Lawler, 2001; Molm et al., 2007), and having such experiences with various colleagues might lead to the trust being generalised. High levels of task interdependence suggest that individuals have frequent interactions with colleagues, yet I did not consider the scope of such interactions in this study. Although

Flynn's discussion was not very clear about the speed of such changes, evidence that such changes in individual orientations can occur within a one-year time frame was provided in this study.

It is implied through these results that there might be reciprocal relationships between participation in generalised exchange, depersonalised trust and GEO. Prior researchers have found that participation in generalised exchange leads to development of the sense of trust to the collective (Inaba & Takahashi, 2012; Molm et al., 2007). It is suggested from the findings in this chapter that such trust will further promote GEO. Prior researchers found reciprocal relationships between individuals' perception about exchange partners and their behaviours in reciprocal exchange relationships between the employee and organisation (Conway & Coyle-Shapiro, 2012) and co-workers (Halbesleben & Wheeler, 2015). This suggests that reciprocal relationships could result in a virtuous cycle, through which the flow of resources increases over time. The results of this chapter suggest that similar co-evolution of individual orientation (i.e. GEO) and generalised exchange as a collective phenomenon might also take place in organisations.

The findings also provide support to prior conceptual discussions about the impact of organisational practices on the formation of organisational social capital, of which generalised exchange is considered an essential ingredient (Adler & Kwon, 2002; Baker & Dutton, 2007). For example, Adler and Kwon (2002) argued that the social structure of an organisation needs to create an expectation among its members that benefiting others will eventually benefit themselves in order to promote generalised social exchange among participants. Similarly, Baker and Dutton (2007) and Evans and Davis (2005) pointed out that organisational practices that promote positive social relationships among organisation members are likely to promote generalised exchange. Although the impact of organisational practices was not directly investigated in this study, the positive impact of depersonalised trust on GEO implies the importance of organisational practices that promote trust among employees in supporting generalised exchange among members. On the other hand, the role of task interdependence in promoting generalised exchange among organisation members has not been discussed in the literature, whereas Adler and Kwon (2002) pointed out that it is vital to promote the sense of shared fate among organisation members in promoting organisational social capital. The findings of this study suggest that a wide application of interdependent job design might work as a mechanism to promote organisational social capital.

The analysis did not support the impact of perceived shared goals on GEO, while the sign of coefficient was consistent with my prediction. One potential explanation is that although shared goals align co-workers' interests, this does not necessarily encourage individuals to interact with each other in order to achieve such goals (Courtright et al., 2015). Indeed, even when individuals share common goals, their tasks might be allocated to individuals in a way that they do not need much interaction to successfully carry out the tasks (Courtright et al., 2015). The lack of need for cooperation enables individuals to operate independently, thus resulting in little opportunities to benefit from social exchange with co-workers. As discussed in Chapter 2, changes in beliefs are likely to occur through generalisation of reactions to the surrounding environment (Caspi et al., 2005), repeated activation of beliefs (Higgins, 1989; Higgins et al., 1982) and cognitive dissonance between one's beliefs and the environment (Desai et al., 2014). This suggests it is important for the development of GEO that individuals actually experience interactions with co-workers and perceive the benefits of applying the rule of collective reciprocity. Hence, perceived shared goals by themselves might not be a sufficient condition for the development of GEO.

I found that age had a negative effect on NEO and REO in longitudinal analyses. There are some factors that might explain the relationships, but none of them fully fit with what I found. First, generational change in personality might have an impact. In longitudinal studies of personality change in adulthood, researchers generally find increases in agreeableness and declines in neuroticism in early adulthood (Caspi et al., 2005). In Chapter 3, I found that agreeableness was positively correlated with GEO and REO and that neuroticism was positively associated with NEO. While the decline in neuroticism appears to fit with the negative effect of age on NEO, the increase in agreeableness does fit with its negative effect on REO and the lack of impact on GEO. Second, the other potential factor is the Japanese employment system, which is characterised by the long-term employment of core employees and the rotation of those employees across different units in an organisation. As a result of these characteristics, individuals tend to develop interpersonal relationships with a wide range of individuals within an organisation (In this sample, the correlation between tenure and age was .69). Such high levels of connectedness with others in an organisation might reduce individuals' propensity to negotiated and reciprocal exchange (Flynn, 2005), while this suggests the positive impact of age on GEO, which I did not find. This certainly requires further conceptual and empirical investigation.

Before moving to the next chapter, I would like to acknowledge the limitations in this study. As I mentioned in the introduction, a key limitation of this study is the small number of observations. As discussed in previous reviews on analysis of change (Ployhart & Vandenberg, 2010; Singer & Willet, 2003), two measurements are not sufficient to analyse change for two reasons. First, any analysis based on two measurements assumes linear trajectory of change by default, and therefore it is not possible to detect non-linear changes in trajectory. For example, the impact of contextual factors on individual characteristics might diminish over time (e.g. Boyce et al., 2015). Second, analysis of change based on two measurements is prone to the potential impact of measurement errors: the observed increase in scores might solely stem from suppressed scores at T1 and inflated scores at T2 by measurement errors, and we cannot know the extent of the impact of such errors (Rogosa, Brandt & Zimowski, 1982). Hence, although the findings in the current study are encouraging, we certainly require further studies with more observations in order to fully investigate the impact of contextual factors for changes in GEO.

5-7. Conclusion

The changes in GEO and the influence of contextual factors on the changes, utilising longitudinal data with two waves of measurements, were investigated in this chapter. The results show depersonalised trust and task interdependence have a positive impact on GEO. Supplemental analysis of NEO and REO shows depersonalised trust also has a positive impact on REO, but task interdependence is not significantly related with either of them. These results suggest prolonged exposure to particular contextual factors results in significant changes in individual orientation to different forms of social exchange. This suggests organisational intervention has an impact on organisation members' orientations and subsequent behaviours. In the following chapter, I will investigate how individuals' orientations shape their behaviours, focusing on knowledge-sharing behaviours on an in-house online platform.

Chapter 6. Consequences of Generalised Exchange Orientations

This is the final chapter of empirical analysis in this thesis. In this chapter, I will investigate the impact of GEO on knowledge-sharing behaviours on an in-house online knowledge-exchange platform and examine its boundary condition by including a moderator, organisational identification, in the analysis. In order to highlight the unique characteristics of GEO, I will also examine the impact of NEO and REO on knowledge-sharing behaviours and the role of interpersonal ties as a moderator of the impact of REO.

Knowledge is considered one of the key intangible resources that organisations utilise to develop sustainable competitiveness (Grant, 1996), and knowledge-sharing behaviours are associated with a number of positive outcomes, such as team creativity (Gong, Kim, Lee & Zhu, 2013; Huang, Hsieh & He, 2014), organisational learning (Bunderson & Reagans, 2011) and organisational performance (Hansen, 2002). In order to facilitate knowledge-sharing behaviours beyond geographical and organisational boundaries and achieve cost reduction and faster access to relevant expertise, organisations increasingly utilise in-house online platforms (McAfee, 2006). These platforms offer text-based, interactive communication functions that allow participants to share their knowledge by natural language, and they typically operate via voluntary participation by employees (Hwang et al., 2015; Shah, 2014).

Knowledge-sharing behaviours on an in-house online platform are an ideal means to investigate the impact of GEO and the other two facets of SEOs on individual behaviours and their boundary conditions. First, recent studies have found evidence that generalised exchange, along with reciprocal exchange, plays a significant role in sustaining interactions on online platforms both on the Internet (Faraj & Johnson, 2011; Wu & Korfiatis, 2013) and within an organisation (Baker & Bulkley, 2014). Second, online platforms allow researchers to observe the flow of resources (i.e., knowledge) among individuals in a more detailed way than survey-based research, as the log of such platforms provides detailed information about who provides what kind of knowledge to whom and when. This is crucial to disentangle the messy nature of generalised exchange, in which resources flow between multiple individuals without a predetermined pathway. Third, in-house online platforms allow researchers to analyse the interplay of individual characteristics and the organisational context in shaping individual behaviours. Unlike Internet-based online platforms, such as Yahoo! Answers and Wikipedia, where participants are largely complete strangers, in-house online platforms typically give access only to the organisation's employees, who are embedded in the social fabric of an organisation, which includes social boundaries and social networks. Despite the claim that web-based technology connects individuals beyond boundaries and existing interpersonal ties, recent evidence suggests that the social structure of an organisation significantly affects interactions on in-house online platforms (Hwang et al., 2015). The boundary conditions that I investigate in this study are both organisation-related constructs, and therefore, the in-house platforms are an ideal stage to examine their effects.

The remainder of this chapter is structured as follows. In the following section, I review relevant literature about knowledge-sharing and online knowledge-exchange platforms and introduce hypotheses. Then, I introduce methods and results, which are followed by a discussion and short concluding remarks.

6-1. Knowledge-sharing behaviours in organisations

Knowledge is a valuable resource for organisations, and the ability to utilise knowledge is crucial for their success (Argote, 2012; Grant, 1996; Zander & Kogut, 1995). However, knowledge is typically distributed unevenly across an organisation and often insulated within organisational units (Hwang et al., 2015), making it critical for organisations to facilitate knowledge-sharing within and across organisational units (Marrone, 2010). Knowledge-sharing, which is defined as provision and receipt of organisational knowledge from one actor to another (Foss et al., 2010; Szulanski, 1996), leads to overlaps in knowledge among employees, leading to absorptive capacity (Cohen & Levinthal, 1990), knowledge integration and creation (Nonaka & Takeuchi, 1995), organisational learning (Argote, 2012; Bunderson & Reagans, 2011) and problem solving (Levine & Prietula, 2012; Nickerson & Zenger, 2004). Ultimately, it is associated with an organisation's ability to adapt to a changing environment (Grant, 1996) and thus its performance (Hansen, 2002).

Despite such collective benefits, studies have shown that individuals are not always willing to share their knowledge, even when organisations encourage and reward them for doing so (Bock, Zmud, Kim & Lee, 2005; Swap, Leonard, Shields & Abrams 2001). Moreover, they often intentionally hide their knowledge from colleagues (Connelly, Zweig, Webster & Trougakos, 2012; Evans, Hendron & Oldroyd, 2014). Although knowledge is considered a key source of organisations' competitiveness (Grant, 1996), individual employees play fundamental roles in creating and acquiring knowledge, and organisations cannot really force them to share their knowledge; in other words, employees "own" knowledge as their "intellectual assets" (Kelloway & Barling, 2000). Sharing knowledge can be disadvantageous to an individual, as one might lose comparative advantage in competition with other employees and dilute his/her value to the employer due to his/her unique asset (i.e., knowledge) becoming a commodity (Thibaut & Kelley, 1959). In addition, knowledge-sharing does not happen without effort. Transferring knowledge from one person to another requires them to share common ground, which is established upon mutual knowledge (Cramton, 2001) — knowledge that both of them commonly have and know they share (Krauss & Fussell, 1990). The weaker the common ground, the more likely misunderstandings and problems take place (Hwang et al., 2015). It is typically more challenging to transfer knowledge beyond the boundaries of organisational units, in which individuals have frequent interactions and develop shared tacit knowledge (Brown & Duguid, 2001). Therefore, when one provides knowledge to other employees beyond organisational boundaries, one typically needs to pay attention to what is already shared between the provider and the recipient and what is not and articulate messages accordingly to make sure the intended recipients effectively receive the knowledge. Such effort takes time, and spending time to help others might have negative consequences on performing one's own tasks (Rapp, Bachrach & Rapp, 2013) and on subsequent career outcomes (Bergeron, 2007). Hence, in summary, knowledge-sharing behaviours incur considerable cost on those who share knowledge.

Therefore, it is not surprising that researchers have found that reciprocal social exchange, based on interpersonal relationships, facilitates knowledge-sharing behaviours. An individual tends to share knowledge to those whom he/she knows and trusts, expecting them to reciprocate (Bouty, 2000). Trust allows individuals to expect that the partner will behave similarly even without monitoring and control (Mayer et al., 1995) and thus assures them that they will not lose out by sharing knowledge. Even when individuals rarely have face-to-face communication, trust and interpersonal bonds facilitate knowledge-sharing behaviours (Golden & Raghuram, 2010), whereas lack of trust can lead to intentional knowledge-hiding from colleagues (Connelly et al., 2012). As a result, having rich interpersonal ties beyond organisational boundaries benefits individuals through access to a variety of knowledge (Mors, 2010; Reagans & McEvily, 2003), particularly when they have the motivation and ability to actively share their own knowledge with those connected (Reinholt, Pedersen & Foss, 2011). All in all, these findings support the role of reciprocal exchange and interpersonal relationships in facilitating knowledge-sharing behaviours.

6-2. Prior approaches to co-worker social exchange relationships

Prior application of SET to co-worker relationships has mainly focused on relationships within teams, which organisations have utilised to facilitate rapid information exchange, task coordination, problem solving and knowledge creation (Cohen & Bailey, 1997; Marks, Mathieu & Zaccaro, 2001). As I noted before, this literature conceptualised interactions between a person and his/her co-workers as dyadic, reciprocal exchange, treating co-workers as a collective rather than separate individuals. For example, Bishop et al. (2000) introduced the concept of social support to the team context and showed that support from team members predicts commitment to the team and thus fosters job performance and OCBs. The following studies support the validity of treating a group of team members as an entity with which individuals engage in social exchange relationships (e.g., Bishop et al., 2005; Chenevert, Vandenberghe & Tremblay, 2015; Halbesleben & Wheeler, 2015; Pearce & Herbik, 2004). Another major approach in this category is team-member exchange (TMX), which refers to the quality of relationships with co-workers in the team (Seers, 1989; Seers et al., 1995). A recent meta-analysis confirmed that TMX has incremental validity above and beyond LMX for variables such as organisational commitment and job satisfaction (Banks et al., 2014), and thus, this concept has unique utility in understanding organisational behaviour. The key premise of these approaches is that members of a team jointly perform task-relevant functions through mutual interaction; they possess one or more shared goals and typically exhibit task interdependence; in other words, their shared role as team members is the basis for the treatment of team members as a collective rather than individuals (Banks et al., 2014).

However, as I mentioned in Chapter 1, these assumptions do not fit with virtual interactions on online platforms. Hence, in the next section, I will discuss the nature of online platforms and interactions on them in more detail.

6-3. Knowledge-sharing behaviours on online platforms

The Internet has led to the emergence of a new form of organising knowledge-sharing interactions among individuals that does not depend on established interpersonal relationships (Faraj et al., 2011). The Internet allows users to interact freely beyond spatial distances (Friedman, 2006). In addition, as individuals do not interact face to face, Internet-based communication involves less social information, shrinks the social distance between individuals from different social backgrounds and creates an opportunity for interactions between them (Kiesler, Siegel & McGuire, 1984; Sproull & Kiesler, 1986, 1991). These characteristics enable online communities to facilitate exchange of knowledge among participants who do not know each other and do not necessarily share common interests (Faraj et al., 2011). Examples of such communities include Yahoo! Answers, on which users ask questions and other users give responses to them (Wu & Korfiatis, 2013); Wikipedia, on which users collaboratively create an encyclopaedia (Kane, 2009); and open software development projects, in which users voluntarily contribute to the development and maintenance of complex software applications and provide services to their users (Bagozzi & Dholakia, 2006; Lakhani & Von Hippel, 2003).

Organisations try to take advantage of this new way of organising knowledge-sharing behaviours and implement in-house platforms utilising technologies that have been developed on the Internet. Traditional communication technologies before the introduction of these Internet-born platforms have focused on either closed interactions between a limited number of people, such as emails and person-to-person instant messaging, or broadcasting centrally controlled, common information to a large audience, such as corporate intranet and information portals (McAfee, 2006). In contrast, in-house online platforms, such as bulletin boards and Q&A forums, are open to a large number of individuals and can facilitate spontaneous interactions among them. They have the potential to fundamentally alter the way individuals interact with each other because they free individuals from a bureaucratic, hierarchical structure that tends to bound interactions within intra-organisational boundaries (Zammuto et al., 2007). Indeed, bureaucratic structure contributes to the development of organisational routines and accumulation of specialised knowledge and helps organisations to achieve efficiency (Weber, 1921). However, at the same time, it restricts dynamic interactions of individuals between different parts of the organisation that are imperative for innovation and constant adaptation to a changing environment (Burns & Stalker, 1961). Corporate executives see the introduction of new communication technologies as an attractive opportunity, considering the potential benefits, such as improving access to experts within the organisation, finding new ideas and facilitating cost reduction, outweigh potential risks, such as leakage of confidential information (McKinsey & Company, 2013).

In-house online platforms have unique characteristics as a means of knowledge-sharing. First, they are asynchronous media (Dennis, Fuller & Valacich, 2008), on which participants do not work together at the same time, as compared to synchronous media, such as phone calls and video chats, which allow and require participants to work together at the same time. The asynchronous nature of in-house online platforms enables each participant to write questions and responses whenever convenient for him/her at his/her own speed. This is advantageous in facilitating communication beyond organisational and geographical boundaries because participants do not need to coordinate their schedules to communicate. On the other hand, synchronous media have advantages in facilitating interactive discussions of diverse views because they allow multiple participants to simultaneously express their ideas and can convey more natural cues, such as facial expressions, gestures and voice tones, than text (Tenzer & Pudelko, 2016). Second, in-house online platforms facilitate open communication: they typically allow access to an unspecified, large number of individuals in an organisation, and once one shares his/her knowledge, it is accessible for all other participants. Traditional means of knowledge-sharing, such as emails and face-to-face conversation, facilitate closed communication, in which participants know with whom they are sharing their knowledge. Advocates of in-house online platforms argue that this openness contributes to the promotion of flexible flow of knowledge across an organisation (McAfee, 2006).

However, introduction of a piece of technology does not necessarily promise the delivery of expected results (Alavi & Leidner, 1999; Hislop, 2002; Orlikowski, 1996). Technologies provide functions that employees can utilise, but their effect depends on how employees use the technologies (Zammuto et al., 2007). Ironically, the openness of in-house online platforms, the exact feature that gives them unique advantages, seems to create obstacles for individuals to share their knowledge. In closed, one-on-one interactions (or interactions between a small number of selected individuals), one can know with whom he/she shares knowledge and decide what, if any, to share. By sharing knowledge to limited individuals who they trust, individuals can make sure sharing knowledge does not harm them but eventually benefits them. In-house online platforms break the basis of such reciprocal exchange in two ways. First, these platforms facilitate individuals interacting with those with whom they have no or little prior interaction (Hwang et al., 2015), and thus, individuals often do not have information to judge the trustworthiness of those with whom they are going to share their knowledge. Second, in-house online platforms typically allow their users to observe interactions by other users; this makes any knowledge shared on the platform available to anyone on the platform and creates asymmetry between those who share knowledge and those who acquire it (Wasko & Faraj, 2005). In fact, the prevalence of free-riders, who only read others' posts and acquire knowledge and hardly provide their own, is widely observed across various online knowledge-exchange platforms (Nonnecke & Preece, 2000; Shachaf, 2009). These features make it difficult for participants to expect direct return for their knowledge-sharing behaviours and, thus, might discourage individuals from participation.

This suggests that reciprocal exchange can play a limited role in facilitating knowledge-sharing behaviours on online knowledge-exchange platforms. Instead, there is emerging evidence that generalised exchange facilitates knowledge-sharing behaviours on online platforms. For example, on Yahoo! Answers, individuals who make a large number of contributions (i.e., responses to questions) tend to attract more responses when they ask questions (Wu & Korfiatis, 2013), indicating the participants follow the rewarding reputation mechanism (Takahashi, 2000). Analysing interactions on five online bulletin boards that host exchange of software-related technical knowledge, Faraj and Johnson (2011) found that receiving responses from other participants increases the probability that the recipient responds to questions by the responders as well as other participants, indicating the participants follow both the norm of reciprocity and paying-it-forward mechanism (Deckop et al., 2003; Nowak & Roch, 2007). In terms of in-house online platforms, Wasko and Faraj (2005) found interest in building professional reputation is one of the antecedents for knowledge-sharing behaviours on an online platform and pointed out that reputation helps individuals indirectly benefit from the contribution. Baker and Bulkley (2014) found that MBA students follow paying-it-forward, rewarding reputation and the norm of reciprocity in interacting with other students on an online knowledge-exchange platform. All in all, this evidence suggests generalised exchange plays a significant role in sustaining knowledge-sharing behaviours on online platforms.

6-4. Hypotheses

6-4-1. GEO and organisational identification

GEO is likely to foster knowledge-sharing behaviours on online platforms. Those with strong GEO tend to apply the rule of collective reciprocity in interactions with others; they have a blurred distinction between their self-interest and others' interests and do not expect direct reciprocation for their behaviours that benefit others. Therefore, the characteristics of online platforms would not discourage them from sharing their knowledge. In addition, online platforms provide access to other organisation members beyond one's own interpersonal networks, who are likely to have non-redundant knowledge (cf. Granovetter, 1973). This increases the potential benefit from indirect reciprocation and, therefore, makes online platforms an attractive channel for interactions for those with strong GEO.

H6-1: GEO has a positive relationship with knowledge-sharing behaviours on an in-house online platform.

However, as discussed in Chapter 2, individuals with strong GEO do not always apply GEO to interactions with individuals. Rather, evidence suggests that individuals are more likely to adopt the rule of collective reciprocity when they interact with individuals who they consider themselves to share an identity with as members of a collective. Social identity as a member of a collective leads individuals to consider the self as interchangeable with other members of the collective and to distinguish those outside the collective as distinct from the in-group members (Turner, 1982). Individuals tend to feel positively about the in-group members and treat them more favourably than out-group members (Brewer, 1996), and this favourable perception occurs even when they do not have knowledge about individual members of the collective (Hogg & Turner, 1985; Prentice et al., 1994). Therefore, one is more likely to apply the rule of collective reciprocity, by which one ignores individual accounting of debt and credit in social exchange relationships when he/she interacts with members of the collective to which he/she identifies rather than when he/she interacts with those outside of the collective. In the former situation, one would perceive him/herself and others as interchangeable parts of the collective, while in the latter, he/she would consider the exchange partners to have distinct characteristics and interests from him/her. Hence, the levels of GEO would have a stronger effect on individuals' knowledge-sharing behaviours in the former situation than the latter situation.

Online knowledge-exchange platforms are typically designed to facilitate knowledge exchange across the entire organisation beyond intra-organisational and geographical boundaries. Therefore, identification with the entire organisation would facilitate the impact of GEO on knowledge-sharing behaviours on such platforms. For individuals with strong organisational identification, membership to the organisation is an important part of their self-concept (Ashforth et al., 2008). Interactions with members of the organisation on a platform would make their social identity as a member of the organisation salient. This would lead them to apply GEO in interactions on the platform.

H6-2: Organisational identification moderates the relationships between GEO and knowledge-sharing behaviour on an in-house online platform in a way that the relationship is stronger when one has strong identification with the organisation.

6-4-2. REO and boundary-spanning interpersonal ties

As discussed in Chapter 2, individuals with strong REO tend to apply the norm of reciprocity in interactions with others at the workplace. This suggests individuals with strong

REO have problems in sharing knowledge on in-house online knowledge-exchange platforms because of the platforms' openness. Once knowledge is shared, it is open to all participants of the platform, who individuals do not necessarily know well. The openness of online platforms inevitably invites free-riding, a prospect which is likely to discourage individuals with strong REC from sharing their knowledge on online platforms. Those individuals are likely to prefer one-on-one communication with those who they know well and trust, and online platforms are not a preferable place to share their knowledge. As reviewed in Chapter 2, Wasko and Faraj (2005) found that individuals' orientation to follow the norm of reciprocity had a negative effect on the number of responses that one provides on an in-house online platform. I expect REO to have a similar effect.

> *H6-3: REO has a negative relationship with knowledge-sharing behaviours on an in-house online platform.*

However, such a negative effect might not apply uniformly across all interactions on such platforms. Individuals with strong REO are likely to behave contingently upon their interpersonal relationships with other participants, as high-quality, trusting relationships mitigate the potential risks of non-reciprocation and allow one to transfer resources of significant value in reciprocal exchange (Cropanzano & Mitchell, 2005). As online knowledge-exchange platforms connect individuals across an organisation, one interacts not only with those people who he/she does not know but also those he/she knows. Hence, one typically has a different degree of familiarity and closeness with other participants of such platforms. When one interacts with those who he/she knows well and finds familiar, the interaction is likely to evoke a relational self, which is an aspect of one's self-concept that is linked to the knowledge of significant others (Chen, Boucher & Tapias, 2006). The activated relational self might be specific to the particular person (e.g., "me, when I am with John, a close colleague") or might be more generally defined by a relational category (e.g., "me, when I am with colleagues of my group"). In either case, activation of the relational self leads individuals to be concerned not only with their own benefits but also the benefits of their significant others because the significant others' interests are no longer independent from the individual's own interests (Brewer & Gardner, 1996). Such cognition of interdependent interests encourages one to share his/her knowledge, taking some risks (Flynn, 2005). Hence, although individuals with strong REO would prefer not to share knowledge online, interpersonal relationships are likely to mitigate such hesitation.

It is important to note that although online platforms allow participants to ask questions to other participants online, the resulting knowledge-sharing behaviour does not always take place online. Imagine a person, A, with strong REO finds two questions posted on a platform: one by a colleague, B, who is currently working together in the same office, and another by a colleague, C, who A also knows well but who is working in a distant office. The interpersonal ties with B and C would activate REO and encourage A to respond to them by sharing his/her knowledge. However, in order to do so, A can just directly talk to B instead of posting a response online. As discussed above, online platforms are asynchronous media and do not allow users to use natural communication cues, such as gestures, facial expressions and voice tones (Dennis et al., 2008). Therefore, A needs to carefully articulate his/her knowledge in a way the recipient can understand based on written messages when responding online (Hwang et al., 2015). By using direct conversation, A can avoid such efforts. In addition, A can also avoid potential free-riding by other participants of the platform. However, the asynchronous nature of online platforms turns out to be an advantage when responding to C because A cannot easily know if C is available for a chat over the phone.

Hence, I expect interpersonal ties that span beyond geographical boundaries to be particularly relevant to online knowledge-sharing behaviours.

H6-4: Boundary-spanning interpersonal ties moderate the relationship between REO and knowledge-sharing behaviours in a way that the negative impact of REO is weaker when one has interpersonal ties beyond geographical boundaries with the target person.

6-4-3. NEO

NEO is likely to hinder individuals' engagement in online platforms because of the open nature of interactions and the lack of negotiations on online platforms. Individuals who have strong NEO prefer to negotiate the terms of exchange before they engage in exchange, while the open and asynchronous nature of communication on online platforms does not facilitate such negotiation between individuals. In addition, there is no formal promise that if one provides knowledge, someone on the platform will reciprocate. Hence, for individuals with strong NEO, an online platform is not an attractive place to share their knowledge. They are more likely to share their knowledge in face-to-face settings, where they can negotiate return for their knowledge with potential exchange partners.

H6-5: NEO has a negative impact on online knowledge-sharing behaviours.

6-5. Methods

6-5-1. Participants and procedure

The research was conducted in a Japanese professional service firm that provides knowledge-intensive services, such as consulting, training and personnel assessment. It employs approximately 400 employees and has eight offices in major cities in Japan, such as Tokyo, Osaka and Nagoya. This company runs an online knowledge-exchange platform in order to facilitate exchange of knowledge across the organisation and thus foster the company's capability to provide solutions to clients. A senior manager of the company granted me access after discussion of the purpose of the study.

The platform is similar to public online Q&A forums (e.g., Yahoo! Answers). The platform is integrated with the company's information platform, which almost all employees use every day in order to access their mail accounts and various databases. Hence, it does not require any additional technical skills or effort to access the platform. An employee can post a request for advice, and others can respond to the request on the platform. Anyone in the company can read the records of past requests and responses. The target users of the knowledge-exchange platform are those who are directly involved in service provisions to clients (such as consultants) and staff members who support them (such as R&D staff). Requestors typically seek advice for their own client cases, asking colleagues to provide their experiences (e.g., what they provided and what worked well), ideas for proposals (what kind of solution would fit with the clients' situations) and relevant materials (e.g., presentation slides). The operation of the platform is based on voluntary participation; the organisation does not assign quotas for posting or answering questions and does not provide rewards for participation. The company's corporate values emphasise collaboration and trust among employees, and it offers a number of human resource practices that fit with my discussion about contextual factors in Chapter 2, including collective socialisation, rewards for collective goals and collaborative behaviours, and secure employment. Hence, the organisational context is likely to promote the development of GEO among employees.

I collected data from three sources. First, I used a survey to collect data for psychological measures (i.e., SEOs and organisational identification) and some of the control variables (i.e., age and gender). The items were translated to Japanese, following the back-translation procedure (Brislin, 1970). Two researchers who are fluent in both English and Japanese and have expertise in relevant fields were involved in the process. Two managers in the organisation, who did not participate in the study, were asked to review the survey instrument in order to make sure the contents made sense in the company's context. The survey was administered on an online platform that the organisation uses as a standard survey platform, and 193 employees, who are the target users of the knowledge-exchange platform, received emails that invited them to participate in the study. I obtained 111 responses (response rate = 56.9%). Second, the company provided log data of individuals' interactions on the platform, which included the details of access (when and who accessed the platform), requests (when and who asked what) and responses (when and who responded what to which request). The log data covered interactions for 12 months, including six months before and after the survey. I set six months after the survey as the observation period for behaviours and used the log data before the period to calculate some control variables and to conduct a response bias check. Third, the HR department of the company provided a personnel record that included each employee's job type, hierarchy and organisational unit affiliation over the observation period and one year before it. I used this to operationalise boundary-spanning interpersonal ties and some control variables (i.e., job type, hierarchy). I used employees' ID numbers as a key to connect data from the three sources.

6-5-2. Measures

Knowledge-sharing behaviours. I consider the opportunity to respond to a request as the unit of analysis. As the platform does not have a limitation on the number of responses, each user, except for the one who posted the request, has the chance to respond to a request. I operationalised each participant's reaction (response or non-response) to each request as a binary variable, where 1 means response and 0 means non-response, based on the log data of the platform.

GEO, REO and NEO. I used the SEOs scale that I developed and validated in Chapter 4. The scale has five first-order factors, NEG, REC, UGI, PIF and RWR, each of which has four items. Participants were asked to choose one response from a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree", for each question.

Organisational identification. Three items were taken from Ashforth and Mael (1989). A sample item is "When someone criticises the organisation, it feels like a personal insult". Participants were asked to choose one response from a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree", for each question.

Boundary-spanning interpersonal ties. This variable was operationalised based on the personnel record. The company has a practice to regularly rotate employees across units and locations, and a major rotation usually takes place every half year. I expect working in the same office to nurture interpersonal relationships because the size of each office is relatively limited and the organisation has a practice to periodically hold formal and informal gatherings to which all office members are invited. Therefore, when a person is transferred to the other office, he/she is likely to maintain his/her interpersonal ties with prior co-workers in the old office. Based on the personnel record, I created a binary variable and assigned 1 when the respondent and requestor were in the same location during the last 12 months before the observation period but were in different locations during the observation period.

Control variables. A number of control variables were used in this study in order to control for alternative explanations and other factors that might influence the (non-) responses. First, I controlled for the history of recent interactions on the platform in three ways, drawing on Baker and Bulkley (2014). First, ***received responses*** represents the number of responses that each respondent has received in the past 1-7, 8-14, 15-21 and 22-28 days.

Second, ***provided responses*** represents the number of responses that the requestor provided in the same periods. Baker and Bulkley (2014) found received responses and provided responses have a positive effect on the probability of responses (except for provided responses in the past 22-28 days having a negative effect), and the effect generally fades away over time. I tried different time periods to aggregate the number of responses (weekly, biweekly and monthly), and the current approach worked best. Third, I controlled for ***indebted***, which represents if the responder owes a response to the requestor. It is a binary variable, and the score is 1 when a user *i* owes a requestor *j* when *j* makes a request and is 0 when *i* does not owe *j*. User *i* owes requestor *j* when the total number of responses from *j* to *i* is greater than the total number from *i* to *j*.

Interviews with a manager who is in charge of the platform suggested that the content of the request might influence the likeliness of responses. In order to control for this effect, I included two binary variables, ***major service*** (the request concerns one of the firm's major services that the majority of users are likely to have relevant knowledge of) and ***specific industry*** (the request concerns a specific industry). I expect that requests about major services would increase the probability of responses because many of the participants of the platform are likely to have certain knowledge about such products. Requests about a specific industry might have an adversarial effect, as all users do not necessarily have knowledge about the specific industry. The coding was conducted by myself and the manager who is in charge of managing the platform, and any disagreement was resolved through discussion.

Other control variables included a series of binary variables that represent time (during which ***week*** of the observation period a request is made). Out of 26 weeks of the observation period, weeks 1, 2, 8, 14 and 22 were lacking, as no request took place during these weeks, and I used week 26 as the reference category. I examined other methods to control for time, such as day of the week and hour of the day, but inclusion of these variables did not make material changes to the results. I also controlled for whether a responder is an active user of the platform (***active***) and demographic characteristics of the respondent (***age, gender, job type and hierarchy***). I coded users who accessed the platform at least once a month over the period as active users, based on the log data for six months before the observation period (active user = 1, other = 0). I expect active users to be more likely to respond to requests because they have more chances to look at requests. I expect age, hierarchy (manager = 1) and gender (female = 1) to have a positive effect on knowledge-sharing, as older employees and managers tend to have more experience in the company, and prior research has found females are more likely to engage in knowledge-sharing behaviours in similar settings (Baker & Bulkley, 2014). Job type (back-office staff = 1, front-line employees = 0) might have a negative impact on the probability of responses, as back-office staff are less likely to have first-hand knowledge about clients' problems and various uses of the firm's services. Finally, I controlled for the proximity of the requestor and the respondent by two binary variables, ***same group*** and ***same location***, where the score is 1 if the requestor and responder currently belong to the same group and location, respectively.

6-5-3. Analytical approach

The analysis focused on the influence of factors on the likelihood of an employee making a response to a request. Suppose there exist N users on the platform; for each request, there are N-1 potential respondents, as everyone except for the requestor has the opportunity to respond. During the six-month period after the survey, 108 requests were posted on the platform. This translates that the 111 survey respondents made 11,932 decisions during the period of six months (as some of the requests were posted by those who did not respond to the survey or who joined the organisation after the survey, the number is slightly more than the product of 108 and 110 (= 111-1)). Of these, 2.26% led to responses, resulting in 270 responses posted by these 111 employees.

The structure of the data creates two problems for analysis. First, because the data includes multiple (non-)responses by each participant, the cases are not independent. Non-independence between cases may cause systematic underestimation of standard errors, leading to inflated significance of estimated coefficients (Baker & Bulkley, 2014). Second, logistic regression is known to have problems in dealing with "rare" events—when the number of the occurrence of the outcome (dependent variable = 1) is significantly smaller than that of non-occurrence (= 0), it produces biased coefficient estimates (King & Zeng, 2001).

In order to deal with these potential problems, I adopted the strategies which were adopted by researchers in prior organisational studies with similarly structured data (Baker & Bulkley, 2014; Jensen, 2003; Sorenson & Stuart, 2001). First, I used a variation of logistic regression, which is designed for "rare" events (King & Zeng, 2001). It corrects the underestimation problem in rare-event data and produces correct coefficient and standard-error estimates. Following Baker and Bulkley (2014), I used the Relogit procedure (Tomz, King & Zeng, 2003) in Stata. Unlike standard logistics regression analysis, this does not produce fit indices, because log likelihood or a pseudo-R^2 are not valid for rare-events analysis (King & Zeng, 2001). Second, I calculated Huber-White robust standard errors, clustering the data by responders in order to deal with the problem of non-interdependence. I chose to cluster by responders because this study concerns the impact of respondents' characteristics on knowledge-sharing behaviours. I also conducted the analysis with other clustering approaches (no clustering, clustering by requestor, clustering by requestor-responder dyad), which resulted in considerably lower standard errors for the hypothesised relationships. Therefore, the presented results are the most conservative estimations.

6-6. Results

6-6-1. Response check

Although the response rate for the survey was relatively high, I conducted multiple tests of non-response bias. First, I divided the respondents by half into early and late responders and compared them in terms of gender, age, job type, hierarchy and department affiliation. An independent t-test and chi-square test indicated no significant differences between the two groups. Second, I consulted with the manager of the platform to review the distribution of gender and age among the survey respondents. He confirmed there was no substantial difference between the respondents and the target users. Third, I compared the distribution of department affiliation, job category and hierarchy (managers and non-managers) between survey respondents and non-respondents based on the personnel record. A chi-square test showed no significant differences in the hierarchy and job categories; however, I found significant differences ($p < .05$) in department affiliation. Analysis of the response pattern revealed significant difference in survey response pattern between active users and non-active users. There were 159 active users in the target group, and 62.8% of them responded to the survey, while among the 34 non-active users, only 32.3% responded. A chi-square test of department affiliation between respondents and non-respondents within active and non-active user groups showed no significant diversion in both groups ($p = .13$ and $.19$, respectively). This indicates the significant difference in department affiliation largely stems from under-representation of non-active users. The analysis of the log file revealed that there was only one response from 65 non-active users over the six months before the survey, indicating very low variation in the response probability among non-active users. In contrast, there was a significant variation in the number of responses (0 to 34 during the period) among active users, who contributed 99.7% of total responses during the period. This suggests higher representation of active users than non-active users is not a significant threat, but rather beneficial, to the purpose of the study to identify individual-level factors that affect the choice between response and non-response when one sees a request for knowledge-sharing.

6-6-2. Measurement model

In order to check the measurements of the psychological scales, I conducted a series of CFA. First, I tested a model with SEO (five first-order factors and one second-order factor) and organisational identification, which resulted in an acceptable fit (χ^2 = 299.29, df = 221, $p < .001$, CFI = .93, TLI = .91, RMSE = .06, SRMR = .07). Alternative models that put organisational identification under the 2nd-order GEN factor and those that combined organisational identification with one of five 1st-order factors showed significantly worse fit ($\Delta\chi^2$ = 9.04 - 81.28, Δdf = 2, p < .01-.05). In order to evaluate the potential issue of common method variance, I introduced a common method factor, following Podsakoff et al. (2003). The model showed significantly better fit than the original five-factor model ($p < .05$), but the common method factor accounted for only 9% of the total variance, which indicates the impact of common method variance is relatively minor (cf. Carlson & Kacmar, 2000), while I cannot completely rule out the impact of common method variance.

Table 6-1 summarizes the descriptive statistics, correlations and Cronbach's alpha. The correlations presented below the diagonal are at the observation level (n = 11,932). For variables that are measured at the respondent level, I also present the individual-level correlations above the diagonal (n = 111). There are some moderate correlations between the independent variables (e.g., REC, GEN and organisational identification), but multicollinearity analysis indicated maximum VIF was 1.85, indicating multicollinearity is not a serious concern.

Table 6-1. Descriptive statistics, correlations and reliability

			Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Dependent variable	Response	.02	.15																					
2	Received responses	(past 1-7 days)	.11	.44	**.14**																				
3		(past 8-14 days)	.09	.38	**.08**	**.30**																			
4		(past 15-21 days)	.09	.38	**.08**	**.14**	**.23**																		
5		(past 22-28 days)	.10	.40	**.07**	**.16**	**.11**	**.28**																	
6	Provided responses	(past 1-7 days)	.54	1.76	.00	**.02**	**.05**	.01	-.01																
7		(past 8-14 days)	.15	.82	-.01	.00	.01	.02	.00	**-.05**															
8		(past 15-21 days)	.30	1.06	-.01	-.02	.00	**.06**	.02	.01	**-.02**														
9		(past 22-28 days)	.38	1.24	-.02	-.01	.00	**.02**	**.05**	**-.09**	-.01	**.24**													
10	Indebted		.00	.04	.01	**.06**	**.03**	-.01	.00	.01	-.01	.01	-.01												
11	Question type	Major service	.15	.36	.01	**.03**	.01	.01	.02	**.02**	**-.07**	**.10**	**-.02**	.01											
12		Specific industry	.24	.43	-.01	**-.02**	**-.02**	**-.02**	-.01	**.05**	**.11**	**.09**	**.14**	.00	**-.17**										
13	Time	Week 3	.01	.10	-.01	**-.02**	**-.02**	-.02	.01	**-.03**	-.02	**-.03**	**-.03**	.00	**-.04**	**-.05**									
14		Week 4	.06	.23	.01	**-.04**	**-.05**	**-.05**	**-.05**	-.01	**-.04**	**-.07**	**-.07**	-.01	**.13**	**.05**	**-.02**								
15		Week 5	.04	.19	-.01	-.01	.00	**-.04**	**-.05**	**-.06**	**-.04**	**-.05**	**-.06**	.00	**-.08**	**.12**	**-.02**	**-.05**							
16		Week 6	.02	.13	.00	**-.02**	.01	-.01	**-.03**	**-.04**	**-.02**	**-.04**	**-.04**	-.01	**-.06**	**.24**	-.01	**-.03**	**-.03**						
17		Week 7	.06	.23	.01	**-.03**	**-.02**	.01	-.01	**-.07**	**.30**	.01	**.06**	-.01	**-.10**	**.15**	**-.02**	**-.06**	**-.05**	**-.03**					
18		Week 9	.05	.21	-.01	**.05**	**.07**	-.01	**-.02**	**-.07**	**-.04**	**-.06**	**-.07**	.00	**.16**	**-.02**	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**				
19		Week 10	.05	.21	.00	-.02	**.07**	**.06**	-.02	**.21**	**.17**	**-.06**	**-.07**	-.01	**.03**	**-.12**	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.05**			
20		Week 11	.08	.28	-.01	.01	-.01	**.13**	**.05**	.00	-.01	**.33**	**.07**	.00	**.06**	**-.09**	**-.03**	**-.07**	**-.06**	**-.04**	**-.07**	**-.07**	**-.07**		
21		Week 12	.06	.23	.00	**.04**	.02	-.01	**.09**	**.04**	**-.04**	**-.07**	**.15**	**.03**	**.13**	**-.04**	**-.02**	**-.06**	**-.05**	**-.03**	**-.06**	**-.05**	**-.05**	**-.07**	
22		Week 13	.04	.19	.00	.02	**.05**	.01	-.01	**.16**	**-.04**	**.18**	**.06**	.01	**.06**	.00	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.04**	**-.04**	**-.06**	**-.05**
23		Week 15	.06	.23	-.01	**-.06**	**-.04**	**.04**	**.07**	**-.07**	**-.04**	**.05**	**.09**	-.01	.01	**.05**	**-.02**	**-.06**	**-.05**	**-.03**	**-.06**	**-.05**	**-.05**	**-.07**	**-.06**
24		Week 16	.04	.19	**.02**	.00	**-.03**	**-.03**	.02	**-.06**	**-.04**	**-.05**	**-.06**	-.01	**-.08**	**-.11**	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.04**	**-.04**	**-.06**	**-.05**
25		Week 17	.02	.13	.00	.01	.00	**-.03**	-.02	**-.04**	**-.02**	**-.04**	**-.04**	-.01	**-.06**	**-.08**	-.01	**-.03**	**-.03**	**-.02**	**-.03**	**-.03**	**-.03**	**-.04**	**-.03**
26		Week 18	.04	.19	-.01	**-.02**	**.02**	.01	**-.03**	**-.06**	**-.04**	**-.06**	**-.06**	.00	**-.08**	**-.11**	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.04**	**-.04**	**-.06**	**-.05**
27		Week 19	.03	.16	.00	**-.02**	-.01	**.02**	.00	**-.05**	**-.03**	**.17**	**-.05**	-.01	**.09**	**.04**	-.02	**-.04**	**-.03**	**-.02**	**-.04**	**-.04**	**-.04**	**-.05**	**-.04**
28		Week 20	.05	.21	-.01	-.01	-.01	-.01	**.02**	**-.07**	**.12**	**-.06**	**.36**	-.01	**-.09**	**-.12**	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.05**	**-.05**	**-.07**	**-.05**
29		Week 21	.04	.19	-.02	**-.03**	-.01	-.01	-.01	**-.06**	**-.04**	**.18**	**-.02**	**.02**	**-.08**	**-.11**	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.04**	**-.04**	**-.06**	**-.05**
30		Week 23	.08	.28	.01	**-.04**	**-.04**	**-.02**	-.01	**-.09**	**-.05**	**-.08**	**-.07**	-.01	**-.13**	**.14**	**-.03**	**-.07**	**-.06**	**-.04**	**-.07**	**-.07**	**-.07**	**-.09**	**-.07**
31		Week 24	.07	.26	.01	**.07**	-.02	**-.04**	**-.03**	**.15**	**-.05**	**-.08**	**-.08**	**.02**	**-.12**	.01	**-.03**	**-.07**	**-.06**	**-.04**	**-.07**	**-.06**	**-.06**	**-.09**	**-.07**
32		Week 25	.04	.19	.01	**.03**	**.07**	**-.03**	**-.03**	**.28**	**.02**	**-.06**	**-.06**	-.01	**-.08**	.00	**-.02**	**-.05**	**-.04**	**-.03**	**-.05**	**-.04**	**-.04**	**-.06**	**-.05**
33	Responder-requestor	Same group	.03	.16	.01	**.02**	.01	**.02**	.01	.00	-.01	-.01	.02	-.01	.00	-.01	.00	.01	-.01	.01	.00	.01	.00	.00	.01
34		Same location	.43	.50	-.01	**-.03**	**-.05**	**-.02**	-.01	**-.11**	**-.08**	**-.10**	**.06**	**-.02**	**-.15**	**-.02**	**-.08**	**.04**	-.01	**.09**	**-.08**	**-.11**	**-.12**	**.05**	**.04**

Table 6-1. Descriptive statistics, correlations and reliability (cont.)

			Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
35	Responder	Active user	.90	.30	**.04**	**.08**	**.07**	**.07**	**.08**	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
36		Age	37.60	9.51	.01	**.02**	**.03**	**.03**	**.02**	.00	.00	.00	.00	**-.03**	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
37		Gender	.35	.48	-.01	-.01	.00	-.01	-.01	.00	.00	.00	.00	**.02**	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
38		Job type	.18	.38	**-.05**	**-.08**	**-.07**	**-.06**	**-.07**	.00	.00	.00	.00	**-.02**	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
39		Hierarchy	.17	.38	.01	.01	.00	.01	.02	.00	.00	.00	.00	**-.02**	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
40	NEO		2.47	.91	-.01	**-.02**	**-.02**	**-.04**	**-.02**	.00	.00	.00	.00	-.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
41	REO		5.09	.87	.00	-.01	.00	-.02	-.01	.00	.00	.00	.00	-.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
42	GEO		5.67	.70	**.02**	**.02**	**.03**	**.02**	**.03**	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
43	Org. identification		5.06	.88	**.04**	**.06**	**.05**	**.05**	**.05**	.00	.00	.00	.00	-.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
44	Boundary-spanning tie		.28	.45	**.03**	**.04**	**.06**	**.03**	**.03**	**.14**	**.02**	**.14**	.00	**.02**	**.19**	**.03**	**.11**	**-.03**	**-.09**	**-.06**	**.08**	**.05**	**.18**	-.02	**.02**

Table 6-1. Descriptive statistics, correlations and reliability (cont.)

			22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
22	Time	Week 13																						
23		Week 15	**-.05**																					
24		Week 16	**-.04**	**-.05**																				
25		Week 17	**-.03**	**-.03**	**-.03**																			
26		Week 18	**-.04**	**-.05**	**-.04**	**-.03**																		
27		Week 19	**-.03**	**-.04**	**-.03**	**-.02**	**-.03**																	
28		Week 20	**-.04**	**-.05**	**-.04**	**-.03**	**-.04**	**-.04**																
29		Week 21	**-.04**	**-.05**	**-.04**	**-.03**	**-.04**	**-.03**	**-.04**															
30		Week 23	**-.06**	**-.07**	**-.06**	**-.04**	**-.06**	**-.05**	**-.07**	**-.06**														
31		Week 24	**-.06**	**-.07**	**-.06**	**-.04**	**-.06**	**-.05**	**-.06**	**-.06**	**-.09**													
32		Week 25	**-.04**	**-.05**	**-.04**	**-.03**	**-.04**	**-.03**	**-.04**	**-.04**	**-.06**	**-.06**												
33	Responder-requestor	Same group	-.01	.01	.00	-.01	.01	.00	.00	-.01	.00	.00	.00											
34		Same location	**-.02**	**.05**	**.05**	-.02	**.12**	**-.13**	**.14**	**-.08**	**-.04**	**-.03**	**.05**	**.19**										
35	Responder	Active user	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01		-.18	-.07	.00	.02	**-.24**	.07	-.10	-.02
36		Age	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**-.03**	**-.04**	**-.18**		**-.25**	.18	-.15	.02	.12	-.05	-.08
37		Gender	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**.04**	-.02	**-.07**	**-.25**		**-.25**	.00	.05	.04	.02	-.14
38		Job type	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**-.06**	**.09**	**-.24**	.02	**.05**		-.01	.01	**-.20**	-.11	-.01
39		Hierarchy	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.01	**.07**	**.19**	**-.23**	**-.03**		-.04	-.08	-.09	**.19**
40	NEO		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.01	**.05**	.02	**-.15**	.00	-.01	**.02**	(.79)	.06	-.03	.06
41	REO		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**.03**	**-.10**	**.07**	**.12**	**.04**	**-.20**	**-.08**	**.06**	(.78)	**.45**	-.01
42	GEO		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**.05**	**.02**	**-.11**	**-.05**	.02	**-.11**	**-.11**	**-.03**	**.45**		**.32**
43	Org. identification		.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	**.02**	**.03**	**-.04**	**-.06**	**-.09**	**-.10**	**.16**	-.01	**.13**	**.51**	(.73)
44	Boundary-spanning tie		**.05**	**-.11**	**-.02**	**-.05**	**-.08**	.01	**-.09**	**.04**	**.03**	.00	.00	**-.10**	**-.55**	**-.06**	-.01	**.03**	**.03**	**-.06**	.01	**.04**	**.07**	**.04**

Scores below the diagonal are correlation coefficients at the observation-level (n = 11,932).
Scores above the diagonal are correlation coefficients at the individual level (n = 111). Scores on the diagonal are Cronbach's alphas.
Bold = significant at the .05 level. Cronbach's alpha for sub-dimensions of GEO (UGI, PIF and RWR) are .89, .72 and .87, respectively.

6-6-3. Hypothesis test

Table 6-2 summarizes the results. I adopted a hierarchical regression approach, starting with the control variables and adding direct effects and interaction terms. The results are largely consistent across the models, and I will report the final model (Model 3) below. SEOs did not show a significant effect, while the directions of coefficients are consistent with the hypotheses (negative for NEO and REO, positive for GEO). Hence, H6-1, H6-3 and H6-5 are not supported. However, interactions between organisational identification and GEO and between boundary-spanning interpersonal ties and REO both showed a significant effect ($p < .05$). In addition, boundary-spanning interpersonal tie had a significant direct positive effect on knowledge-sharing behaviour ($p < .10$).

In order to examine the interaction effects, I conducted a simple slope analysis, following Aiken and West (1991). Figure 6-1 (left) shows the results for the interaction between organisational identification and GEO. When organisational identification is high ($+1\sigma$), GEO has a significant positive effect ($p < .10$). On the other hand, when organisational identification is low (-1σ), GEO does not have a significant effect ($p > .10$). This is consistent with H6-1 and H6-2. Figure 7-1 (right) illustrates the interaction between boundary-spanning ties and REO. As predicted, REO has a negative effect on knowledge-sharing behaviours on the platform when one does not have an interpersonal tie with the target ($p < .10$). On the other hand, REO appears to have a positive effect when one has an interpersonal tie with the target, while the slope is not significant ($p > .10$). This is consistent with H6-3 and H6-4.

Table 6-2. Results of rare-event logistic regression

	Model 1				Model 2				Model 3			
	Coef.	S.E.	p	Sig.	Coef.	S.E.	p	Sig.	Coef.	S.E.	p	Sig.
Constant	-5.91	1.13	.00	**	-6.97	1.44	.00	**	-7.19	1.46	.00	**
Received responses												
(past 1-7 days)	.60	.09	.00	**	.59	.09	.00	**	.58	.09	.00	**
(past 8-14 days)	.22	.08	.01	**	.19	.09	.04	*	.20	.09	.03	*
(past 15-21 days)	.37	.10	.00	**	.35	.10	.00	**	.36	.10	.00	**
(past 22-28 days)	.27	.17	.11		.24	.15	.11		.23	.16	.15	
Provided responses												
(past 1-7 days)	-.03	.05	.59		-.03	.05	.57		-.03	.05	.60	
(past 8-14 days)	-.15	.10	.12		-.13	.10	.17		-.14	.10	.16	
(past 15-21 days)	.06	.09	.51		.04	.09	.61		.05	.09	.54	
(past 22-28 days)	-.14	.08	.08	+	-.14	.08	.09	+	-.14	.08	.09	+
Indebted	.72	.82	.38		.61	.78	.43		.79	.84	.35	
Question type												
Major service	.12	.20	.56		.06	.20	.76		.08	.20	.68	
Specific industry	-.06	.19	.75		-.08	.19	.66		-.08	.19	.68	
Time												
Week 3	-.28	1.08	.79		-.41	1.08	.70		-.38	1.08	.73	
Week 4	.43	.33	.20		.45	.32	.17		.43	.33	.18	
Week 5	-.52	.48	.28		-.45	.50	.37		-.48	.50	.34	
Week 6	.26	.46	.58		.28	.46	.55		.26	.46	.58	
Week 7	.47	.38	.21		.41	.38	.29		.42	.39	.28	
Week 9	-.63	.47	.18		-.61	.46	.19		-.60	.45	.18	
Week 10	.02	.32	.95		-.05	.33	.87		-.01	.32	.97	
Week 11	-.55	.53	.30		-.52	.53	.34		-.54	.54	.31	
Week 12	.08	.36	.82		.09	.35	.79		.10	.35	.78	
Week 13	-.04	.40	.92		-.06	.40	.87		-.07	.40	.86	
Week 15	-.15	.42	.73		-.09	.43	.84		-.10	.43	.82	
Week 16	.64	.26	.02	*	.61	.26	.02	*	.61	.26	.02	*
Week 17	.12	.52	.82		.15	.54	.78		.13	.54	.81	
Week 18	-.22	.38	.57		-.22	.38	.57		-.23	.38	.54	
Week 19	-.07	.45	.88		.00	.47	.99		-.04	.47	.94	
Week 20	.24	.40	.56		.22	.41	.58		.20	.40	.61	
Week 21	-.76	.53	.15		-.77	.53	.14		-.79	.53	.14	
Week 23	.28	.27	.30		.26	.27	.33		.26	.27	.34	
Week 24	.07	.32	.82		.07	.33	.83		.05	.33	.88	
Week 25	.29	.37	.44		.26	.37	.48		.25	.37	.51	
Requestor-responder												
Same group	.08	.36	.83		.11	.38	.77		.20	.40	.61	
Same location	-.03	.19	.89		.11	.24	.63		.07	.23	.76	
Responder												
Active user	1.73	.95	.07	+	1.83	.97	.06	+	1.88	1.01	.06	+
Age	.01	.01	.25		.01	.01	.17		.02	.01	.08	+
Gender	.04	.23	.87		.09	.23	.68		.13	.23	.58	
Job type	-.77	.37	.04	*	-.74	.36	.04	*	-.80	.32	.01	*
Hierarchy	.06	.26	.82		.02	.29	.95		.00	.28	1.00	
Hypothesis test												
NEO					-.09	.12	.46		-.13	.12	.28	
REO					-.10	.14	.47		-.16	.13	.22	
GEO					.13	.16	.40		.14	.16	.37	
Org. identification					.13	.13	.32		.19	.14	.15	
GEO x Org. identification									.31	.15	.03	*
Boundary-spanning tie					.33	.18	.07	+	.28	.16	.08	+
REO x Boundary-spanning tie									.36	.15	.02	*

n = 11,932. ** significant at .01 level, * significant at .05 level and + significant at .10 level.

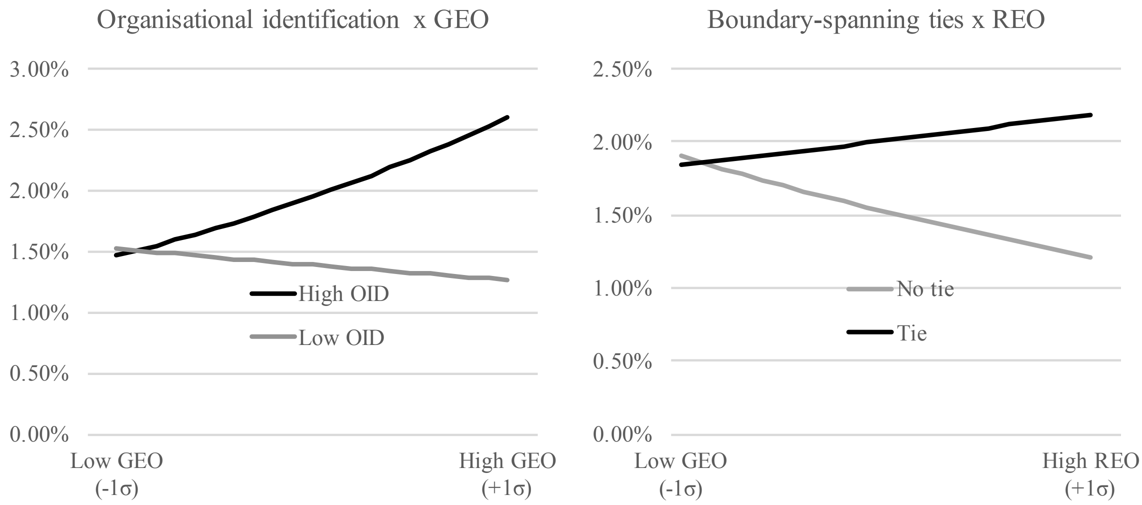


Figure 6-1. Results of simple slope analyses

Some control variables showed significant effects. Received responses (past 1-7 days, 8-14 days and 15-21 days) showed positive significant effects ($p < .01$). This suggests participants follow the paying-it-forward mechanism, and the positive impact of receiving responses lasts for three weeks. Provided responses showed no significant effect, except for provided responses in the past 21-28 days showing a negative significant effect (<.10). Indebtedness also did not show a significant effect, while the direction is consistent with the expectation (I will discuss the lack of effects for provided responses and indebtedness in the discussion section). Two content variables did not show a significant effect, while the directions were consistent with the expectation. One of the time variables (Week 16) had a significant positive effect ($p < .05$). The responder and the requestor being in the same group or location did not have a significant effect. As expected, active users showed a higher probability of response ($p < .10$). Age had a positive significant ($p < .10$) effect in the final model, while gender did not show a significant effect. Job type had a negative significant ($p < .05$) effect, while hierarchy did not show significant influence.

Figure 6-2 shows the impact of receiving responses in the past 1-7 days on individuals with different levels of GEO and organisational identification. The vertical dimension represents the probability of responses, and the horizontal dimension represents the number of responses that one received in the past 1-7 days. As I noted above, the average number of responses to each request was 2.5. The estimated response probability of individuals with high levels of GEO (+1σ) and organisational identification (+1σ) was 2.60% when they did not receive anything in the past 1-7 days, and the probability soared up to 13.17% when they received three responses in the period. On the other hand, the probability of individuals with high GEO (+1σ) and low organisational identification (-1σ) was 1.27% and 6.81% under the respective conditions. This illustrates that individuals with high GEO and organisational identification are more susceptible to the stimulation of receiving responses than those with different profiles are.

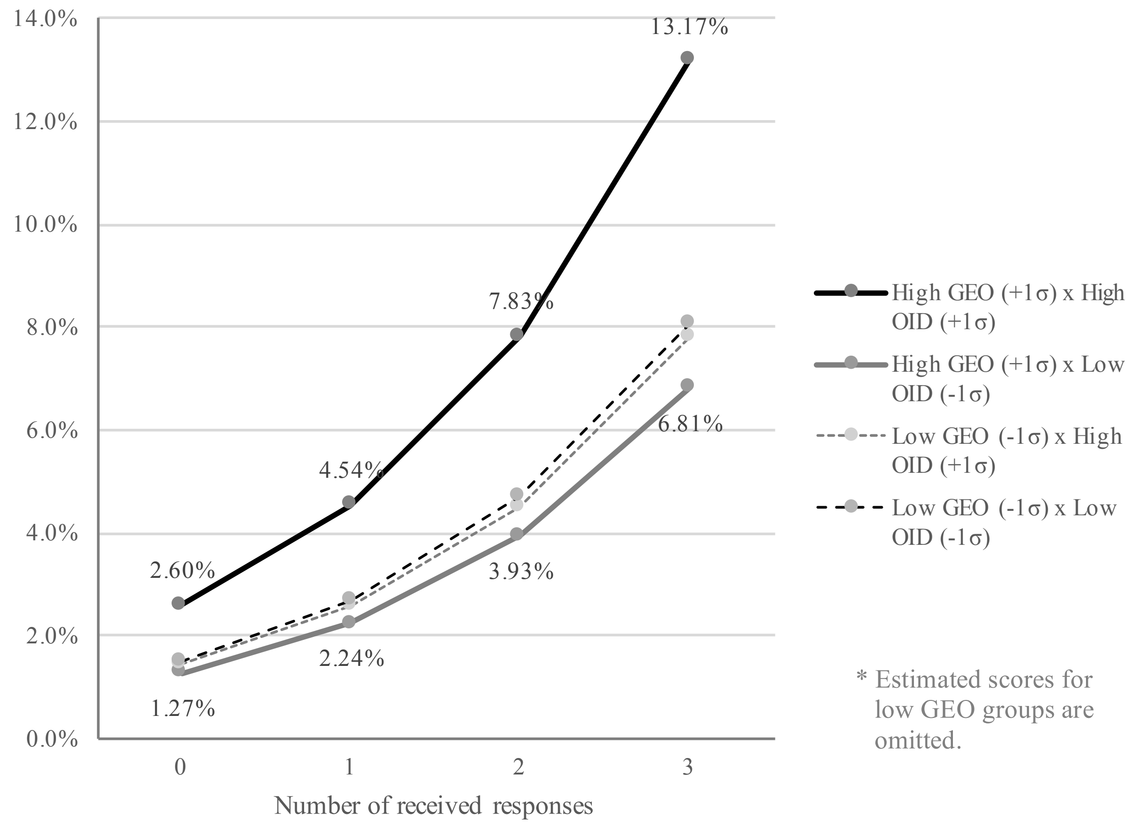


Figure 6-2. Estimated probability of response, with different numbers of received responses at different levels of GEO and organisational identification

6-6-4. Robustness check

In order to evaluate the robustness of the findings, I conducted three tests. First, I used a combined data set, which included all the response cases and a random sample of 20% of the non-responses, instead of the full data set. This approach is known to reduce the impact of non-independence (Baker & Bulkley, 2014) while maintaining a large portion of the information for estimation of the mechanisms that affect the probability of responses (Cosslett, 1981; Imbens, 1992; Imbens & Lancaster, 1996; King & Zeng, 2001). Second, I excluded non-active users ($n = 11$) from the analysis. Third, I removed a participant who responded a significantly larger number of times (34 times during the observation period), from the analysis, suspecting the participant might have distorted the analysis. These three analyses showed consistent results with a few material changes in the results, indicating the robustness of the findings. The only notable difference was that in the third test, NEO showed a significant negative effect ($p < .05$), which is consistent with H6-5. The NEO score of the removed participant (3.50) was well above the mean score (2.47), suggesting the effect of NEO might have been suppressed by the inclusion of the participant.

6-7. Discussion

In this chapter, I investigated the impact of GEO and the other two facets of SEOs on online knowledge-sharing behaviours and their boundary conditions. The results support the proposition that GEO has a significant positive impact on individuals' discretionary behaviour (proposition 3) and the relationship is moderated by individuals' identification pattern (proposition 4). To my knowledge, this is the first empirical study that shows the impact of individual differences on the engagement in generalised exchange. Prior studies have shown that knowledge-sharing behaviours on online platforms follow both the rule of collective reciprocity and the norm of reciprocity (Baker & Bulkley, 2014; Faraj & Johnson, 2011; Wu & Korfiatis, 2013), and identification with a collective promotes participation in an online community that operates upon the principle of generalised exchange (Willer et al., 2012). The findings in this chapter advance our understanding of individual participation in generalised exchange by showing that (1) the interplay between individuals' orientations (GEO and REO) and individuals' relationships with the organisation (identification) and co-workers (interpersonal ties) shapes individuals' engagement in the two different types of social exchange on a platform and (2) the impact of organisational identification is contingent upon individual characteristics (GEO).

The results also show a clear difference between GEO and REO. While the former is positively associated with online knowledge-sharing behaviours when one has strong organisational identification, the latter is negatively associated with the behaviours unless one has a boundary-spanning interpersonal tie with the person with whom who he/she interacts. This supports the view that generalised exchange takes place based on membership to a collective, while reciprocal exchange occurs based on an interpersonal relationship with a particular individual. In addition, this suggests generalised exchange facilitates resource transfer beyond established interpersonal ties (Levine & Prietula, 2012). Along with the findings in Chapter 3, these findings significantly extend the literature about individual differences in social exchange relationships by showing GEO to have distinct performance implications.

The findings about reciprocal exchange are consistent with previous findings about individuals' orientation in favour of the norm of reciprocity, such as exchange ideology and a personal norm of reciprocity in employee-organisation settings (Coyle-Shapiro & Neuman, 2004; Eisenberger et al., 2001; Eisenberger et al., 1986; Ladd & Henry, 2000) and peer-to-peer settings (Gallucci & Perugini, 2003). Studies constantly show that those with high levels of orientation of favouring the norm of reciprocity significantly decrease their positive discretionary behaviour when the exchange partner treats them badly; in contrast, those with low levels of orientation do not change their behaviour much, even when the exchange partner does not treat them well. The results of this study show a similar effect, in that individuals with strong REO are least likely to share knowledge on the platform when they interact with people with whom they do not have boundary-spanning interpersonal relationships. The findings extend a prior study by Wasko and Faraj (2005), who found a direct negative effect of individual orientation to reciprocal exchange on the amount of responses on a similar online platform by showing that boundary-spanning ties moderate the relationship.

These findings have implications for the analysis of co-worker relationships in a team setting. As noted in Chapter 2, in their study, Ladd and Henry (2000) applied individual orientation in favour of the norm of reciprocity in co-worker relationships in a field setting, which failed to show a significant effect, while experimental studies in which the impact of a similar construct in two-actor situations was analysed showed a significant effect (Eisenberger et al., 2004; Gallucci & Perugini, 2003). The key difference between the current study and Ladd and Henry's study is that the current study used direct observation of individual behaviours, which allowed me to separately analyse the impact of SEOs on behaviours towards each individual target. On the other hand, Ladd and Henry captured individual behaviours via a survey measure (team-directed OCB) that aggregated individual behaviours towards multiple targets. The authors of the experimental studies also examined one-on-one situations. Overall, this evidence suggests REO and similar constructs interact with the quality of relationship with *each individual* rather than the quality of relationship with *co-workers as a collective.*

The results of the control variables also deserve some discussion. First, I found a significant effect of received responses, whereas the effects of provided responses were not significant. These results support the asymmetric nature of the paying-it-forward and rewarding-reputation mechanisms that Baker and Bulkley (2014) pointed out. In their analysis of online knowledge-sharing behaviours among MBA students, Baker and Bulkley (2014) found that the effect size of rewarding reputation was considerably smaller than that of paying-it-forward. The authors interpreted the results as showing the limitation of the rewarding-reputation mechanism in large social groups. They pointed out that the rewarding-reputation mechanism requires individuals to keep track of other members' debt and credit in exchange relationships, and the larger the group size, the more cognitively demanding it becomes. As paying-it-forward is free from such a limitation, they proposed paying-it-forward might play a more important role in sustaining generalised exchange relationships than rewarding reputation in large groups. In this study, I found paying-it-forward has a significant positive effect on knowledge-sharing behaviours, and rewarding reputation has a marginal negative effect. Given the platform I analysed has more than 150 active users, which is much larger than the number of participants in the groups that Baker and Bulkley analysed (60 and 65, respectively), the results appear consistent with their predictions. This is important because prior authors argued the opposite. First, Boyd and Richerson (1989) argued that paying-it-forward can only work in fairly small groups. Second, Takahashi (2000) argued that rewarding reputation is the key mechanism of generalised exchange, based on computer simulations that showed rewarding reputation can sustain generalised exchange on its own, whereas the paying-it-forward mechanism needs reciprocal exchange to coexist in order to sustain a generalised exchange (Nowak & Roch, 2007). We certainly need more studies to make a conclusive judgement, but this study provides empirical support for the propositions by Baker and Bulkley (2014).

Second, I did not find a significant effect of indebtedness. This contradicts prior findings that suggest interactions on online communities also follow the norm of reciprocity to a certain extent (Baker & Bulkley, 2014; Faraj & Johnson, 2011). I suspect this lack of support for direct reciprocity might be because of the highly specific nature of questions posted on the platform and relatively scarce interactions on the platform. Participants typically asked very specific questions about unique problems that their clients faced and arrangements of services that they were going to propose to clients. In addition, there were only 108 requests posted on the platform during the six months, which means, on average, each active participant asked less than one question during the period. Therefore, even if a participant (A) has recently received a response from another participant (B) and feels obligation to reciprocate to B, B might not post a request on the platform. In addition, even if B posts a request, A might not have relevant knowledge to answer it. As a result, high specificity of questions and scarcity of interactions prevent direct reciprocation from occurring on the platform. Indeed, online interaction is only a part of organisational life, and participants can reciprocate the favour they receive on the platform by doing something offline. Hence, the lack of evidence does not necessarily indicate that the participants of online platforms do not follow the norm of reciprocity.

Overall, this study sheds new light onto a long-standing question in the study of knowledge-exchange platforms from the micro-foundation perspective. Researchers have long questioned why such platforms are sustained despite the lack of apparent benefit for contributors (Desanctis & Monge, 1998; Wasko & Faraj, 2005). The findings suggest the existence of individuals with high levels of GEO and organisational identification significantly contributes to the sustainability of activities on such platforms. Such individuals are more likely to respond to other participants' requests, and those who receive responses become more likely to respond to requests on the platform for at least three weeks. This implies individual differences might have an impact on the overall level of knowledge-sharing activities on online knowledge-exchange platforms, while it is beyond the scope of this study to confirm such an effect.

6-8. Conclusion

In this chapter, I investigated the impact of SEOs on knowledge-sharing behaviours on an online platform. Overall, the findings suggest that individuals' behaviours on online knowledge-exchange platforms are significantly influenced by interactions between GEO and organisational identification. This confirms the central thesis of this dissertation that individuals' differences in orientation towards the rule of collective reciprocity have significant implications on their exchange behaviours. In the next chapter, I will summarise the overall findings of this thesis, discuss their implications and limitations, and propose directions for future research.

Chapter 7. Discussion

The purpose of this thesis was to investigate individual differences in engagement in generalised social exchange in organisations. In particular, I aimed to answer a question – why do some people engage in generalised exchange while others do not? In order to answer this question, I proposed the concept of GEO and conducted three empirical studies regarding its measurement, antecedents, consequences and boundary conditions. Chapter 4, 5 and 6 reported the findings that individuals indeed have distinct orientations towards generalised and other forms of exchange, prolonged exposure to certain organisational contexts lead to the development of GEO and GEO promotes online knowledge-sharing behaviours, moderated by organisational identification. In this chapter, I will reflect on the findings of the empirical studies and discuss their implications for theory and practice. I will start by briefly revisiting the conceptual discussion in Chapters 1 and 2 and summarising the findings of each of the three empirical studies. Then, I will discuss the overall contribution of this thesis and implications to relevant areas of organisational literature and to management practices. Finally, I will discuss this thesis's limitations and present suggestions for future studies, which will be followed by concluding remarks.

7-1. What is generalised exchange? Why does it matter?

Generalised exchange is a form of social exchange characterised by collective structure and implicit process (Flynn, 2005; Molm, 2003). Drawing on prior discussions about the regulating mechanisms of generalised exchange (Nowak & Roch, 2007; Nowak & Sigmund, 1998; Takahashi, 2000; Yamagishi et al., 1999), I proposed the rule of collective reciprocity as a key regulating mechanism of generalised exchange. Unlike those who engage in reciprocal exchange following the universal norm of reciprocity (Gouldner, 1960), individuals engaging in generalised exchange balance debt and credit at the collective level, ignoring the balance of giving and receiving with individual exchange partners.

Generalised exchange is considered a key ingredient of organisational social capital (Adler & Kwon, 2002; Baker & Dutton, 2007; Evans & Davis, 2005), and evidence suggests that it promotes the flexible flow of resources (e.g. knowledge and expertise) among individuals (Levine and Prietula 2012) and promotes psychological bonds, such as a sense of solidarity and identification, between individuals and the collective (Molm et al., 2007; Willer et al., 2012). These characteristics make generalised exchange relevant to contemporary organisations, which increasingly utilise in-house online platforms to facilitate flexible interactions between employees in the virtual space (McAfee, 2006; McKinsey & Company, 2013; Zammuto et al., 2007). Such platforms enable a large number of individuals who do not necessarily have prior relationships to interact with one another beyond organisational boundaries. As generalised exchange facilitates the flow of resources regardless of established interpersonal relationships and individuals do not need to directly reciprocate resources, generalised exchange fits well with the emerging virtual form of interactions.

7-2. GEO as individual characteristics

Drawing on prior conceptual discussions on individual preferences towards different forms of social exchange (Ballinger & Rockmann, 2010; Flynn, 2005) and empirical evidence on individual differences in reciprocal social exchange (Eisenberger et al., 2001; Eisenberger et al., 1987; Perugini et al., 2003), I introduced the concept of GEO, beliefs in favour of the rule of collective reciprocity in interactions with others in the workplace, and proposed that GEO leads individuals to demonstrate discretionary behaviours that unilaterally benefit others. Individuals develop orientations towards social exchange through direct involvement and observations of interactions in the workplace (Eisenberger et al., 2001), and orientations shape a consistent pattern in individual behaviours in various social exchange situations in the workplace. Hence, GEO is a stable individual characteristic, but it can also change over time. The discussion on the nature of generalised exchange suggests that two contextual factors promote GEO: 1) blurring the distinction between self-interest and others' interests and 2) fostering expectations for future return from engagement in social exchange. The former would lead individuals to shift the focus of debt-credit calculation in social exchange relationships to the collective level, and the latter would mitigate the inherent risks of non-reciprocation in generalised exchange. Studies on development and change in individuals' work-related beliefs (Burkhardt, 1994; Desai et al., 2014; Rousseau, 1989) suggest that changes in beliefs typically take place slowly over a long period of time, such as months and years, while sudden changes may occasionally happen when triggered by emotionally striking events (Ballinger & Rockmann, 2010).

I predicted that GEO would promote discretionary behaviours even when one cannot expect either rewards or direct reciprocation for their behaviours. This is because individuals with strong GEO apply the rule of collective reciprocity, so they expect to receive indirect reciprocation from someone in the group for their contribution. Hence, they do not need the prospects of direct reward and direct reciprocation in order to engage in positive discretionary behaviours. I also predicted that individuals' social identity moderates the impact of GEO on individual behaviours such that GEO has a strong impact on individual behaviours when one interacts with those who are considered to share his/her social identity.

7-3. Summary of findings

In Chapter 4, I developed a set of scales for GEO, NEO and REO, and validated them using responses from 1268 participants. The results support content, factorial and nomological validity of the new scales and show that the scales have partial scalar invariance between two distinct societal contexts, the US and Japan. The factor structure of the scales suggests that (1) GEO, NEO and REO are distinct psychological constructs ***(proposition 1)*** and (2) GEO is manifested by three lower-order factors that represent orientations to unilateral giving with the expectation of indirect reciprocation, paying-it-forward and rewarding reputation ***(proposition 2)***. The analysis also supports configural, metric and partial scalar measurement invariance of the new scales between Japan and the US and show the incremental validity of GEO and NEO in predicting OCBs beyond key existing measures of individual orientations to social exchange, reciprocity wariness and creditor ideology.

Chapter 5 investigated the impact of contextual factors on the development of GEO and two other facets of SEOs. The study utilised a longitudinal data set that I collected in Japan through two waves of surveys with a one-year interval. The results show that task interdependence ***(proposition 5)*** and depersonalised trust ***(proposition 6)*** have significant positive relationships with changes in GEO during the observation period, whereas shared goals ***(proposition 7)*** do not have a significant effect. The analysis of NEO and REO suggests that the proposed antecedents have differential relationships with the three facets of SEOs: none of the three proposed antecedents have significant relationships with changes in the levels of NEO, while only depersonalised trust has a significant positive relationship with changes in the levels of REO. Hence, the results suggest task interdependence and depersonalised trust change individuals' profile of SEOs over time.

The final empirical analysis in Chapter 6 examined the impact of GEO and two other facets of SEOs on knowledge-sharing behaviours on an in-house online knowledge-exchange platform as well as the influence of two key boundary conditions, organisational identification and boundary-spanning interpersonal ties, which I hypothesised would moderate the effect of GEO and REO, respectively. The analysis largely supported the research model, showing significant moderation effects. First, organisational identification moderates the impact of GEO such that GEO has stronger association with knowledge-sharing behaviours when organisational identification is strong. This result highlights the unique nature of GEO: it encourages individuals to demonstrate discretionary behaviours even when one cannot expect rewards or direct rewards ***(proposition 3)***. In addition, the significant interaction effect between GEO and organisational identification supports the proposition that GEO has a positive impact on discretionary behaviours when one perceives the target of the behaviours as sharing common membership in a collective ***(proposition 4)***. Second, the evidence suggests that REO significantly reduces individuals' willingness to share their knowledge on the platform when they do not have interpersonal ties with recipients. This indicates that a lack of expectation of direct reciprocation and the prevalence of free-riding discourage individuals with strong REO from sharing their knowledge on online platforms. In addition, the analysis shows that receiving responses from other participants increases the probability of recipient responses for as long as three weeks; results indicate that this effect considerably amplifies the impact of GEO and organisational identification on individuals' propensity to respond on the platform.

7-4. Contributions of this thesis

This thesis contributes to four areas of research: 1) the literature on generalised exchange, 2) individual differences and social exchange, 3) co-worker relationships and 4) online communities. First, this thesis contributed to unpacking the micro-foundations of generalised exchange in organisations and the difference relative to that of reciprocal exchange. Integrating the prior literature about generalised exchange from wider socialscience disciplines, I conceptualised the rule of collective reciprocity as the underlying mechanism of generalised exchange and found evidence to support said proposition. The findings from

Chapter 4 clearly indicated that UGI, PIF and RWR are manifestations of a single underlying mechanism, namely the rule of collective reciprocity, and the orientation to this rule is distinct from the orientation to the norm of reciprocity. This marks an important turning point in the study of generalised exchange because it integrates three mechanisms that were previously discussed separately (Deckop et al., 2003; Nowak & Roch, 2007; Nowak & Sigmund, 1998; Takahashi, 2000; Yamagishi et al., 1999), and even discussed in contrasting terms (e.g. Baker & Bulkley, 2014), into a single mechanism. In addition, the findings in Chapter 6 showed that GEO encourages individuals to engage in discretionary behaviour with moderation by organisational identification despite the lack of reward and direct reciprocation for their behaviours. This provides strong support for the role of the rule of collective reciprocity as a mechanism driving individuals to engage in generalised exchange, which is characterised by unilateral giving of resources (Yamagishi & Cook, 1993).

In addition, the results from Chapter 6 clearly show differences between the individual characteristics and situational context leading to reciprocal exchange and those leading to generalised exchange. The findings pertaining to the impact of REO on knowledge-sharing behaviours suggest that REO discourages individuals from engaging in reciprocal exchange when one does not have interpersonal relationships with those with whom one interacts and the prospect for direct reciprocation is low. In other words, the effect of REO depends on the quality of the relationship with specific partners. This is consistent with previous findings about individuals' orientation in favour of the norm of reciprocity, such as exchange ideology and personal norm of reciprocity, which I reviewed in Chapter 2. Such *target-specific relationships* typically develop through repeated interactions over time and promote the expectation of direct reciprocation (Cropanzano & Mitchell, 2005) as well as create a sense of obligation (Blau, 1964; Eisenberger et al., 2001; Pearce & Gregersen, 1991). In contrast, the evidence shows that GEO leads individuals to engage in generalised exchange when they interact with those they view as sharing membership in a collective. That is, generalised exchange occurs upon the perception of *shared identity as members of a collective.* This difference highlights the unique nature of generalised social exchange that Ekeh (1974) emphasised in his conceptual discussion and that Levine and Prietula (2012) signalled as a key advantage of generalised exchange in facilitating the flexible flow of knowledge across an organisation. That is, generalised exchange can facilitate resource exchange among individuals regardless of individual relationships. On the other hand, the results also suggest that such a benefit requires a certain condition – it depends on the existence of a sense of shared identity. Table 7-1 summarises the key differences between the factors behind individuals' engagement in generalised and reciprocal exchange.

Table 7-1. Factors of engagement in reciprocal and generalised exchange

	Generalised exchange	Reciprocal exchange
Individual orientations	GEO • Beliefs in favour of the rule of collective reciprocity	REO • Beliefs in favour of the norm of reciprocity
Situational context	Membership in a collective • Perception of shared identity based on common membership in a collective	Target-specific relationships • Expectation of reciprocation and the sense of obligation based on past interactions

Second, this thesis also contributes to the literature on individual differences in social exchange. As reviewed in Chapter 2, prior studies have solely focused on reciprocal exchange. Studies have used constructs that capture either individuals' beliefs to follow the norm of reciprocity (e.g. exchange ideology, personal norm of reciprocity) or individuals' beliefs about the balance between debt and credit in reciprocal exchange relationships (e.g. creditor ideology and reciprocity wariness). In addition, although this stream of studies has advanced our understanding of individual differences in social exchange, contributions have largely concentrated on employee–organisation relationships; thus, little is known about the impact of individual differences on co-worker relationships.

This thesis has expanded this stream of research in three ways. First, it introduced regulatory mechanisms – rules and norms – as key concepts in defining individual differences. While there has been a call for researchers to pay more attention to the rules and norms of social exchange for at least a decade (Cropanzano & Mitchell, 2005), it has been largely overlooked in the literature. By integrating the discussions on different forms of social exchange in wider social science disciplines, this thesis has provided a conceptual definition of individual orientations to the three types of rules and norms, established instruments to measure the orientations and shown their differential relationships with individual behaviours. Second, this thesis has provided preliminary evidence that individual orientations can change over time and that organisational contexts shape such changes, although the findings from Chapter 5 need to be verified with richer longitudinal data with three or more measurements. As I mentioned in Chapters 2 and 5, existing studies on individual differences have treated individual orientations, such as exchange ideology and reciprocity wariness, as stable characteristics even in longitudinal studies spanning multiple years (e.g. Coyle-Shapiro, 2002; Coyle-Shapiro & Neuman, 2004). This new evidence is in line with recent discoveries in other areas of the OB literature showing that individuals' stable characteristics can change much more rapidly than previously thought (Boyce et al., 2015; Li et al., 2014). Third, a relatively minor, though still important, contribution of this thesis is its identification of the moderation effect of individual orientation to reciprocal exchange (i.e. REO) in co-worker relationships in a real-life situation As discussed in Chapter 2, the moderation effect of similar constructs, such as exchange ideology and personal norm of reciprocity, has been well established in studies of employee–organisation relationships and those of peer-to-peer relationships in experimental settings. However, a prior study that applied this idea to co-worker relationships in a field setting did not find significant moderation effect (Ladd & Henry, 2000).

The third area of contribution is the literature on co-worker social exchange relationships. As I have noted, prior application of SET to the study of co-worker relationships has concentrated on team settings, with researchers conceptualising co-worker relationships that actually involve many individuals as reciprocal exchange and treating co-workers as a collective rather than as individuals. Despite the considerable contribution of this approach to the understanding of dynamics within a team, this approach is not well suited for the investigation of emerging virtual co-worker relationships on online platforms because individuals interact with diverse individuals who do not necessarily share a role, which is precisely the assumption behind the dyadic conceptualisation of co-worker social exchange in a team context (Banks et al., 2014). By introducing generalised exchange as a conceptual lens, this thesis introduced an alternative approach that treats individuals as separate actors; results indicated that SET has significant explanatory power for co-worker relationships beyond team settings. In addition, this study employed a novel data-collection method – a combination of survey and online data – and an analytical approach that fits with the theoretical approach. While surveys have advantages in terms of capturing individuals' psychological characteristics, the log of online data allows researchers to capture far more detailed data about individual behaviours than surveys. A vast majority of studies in the social-exchange literature have relied on surveys as a data-collection method, and a few studies with similar online data (e.g. Baker & Bulkley, 2014; Faraj & Johnson, 2011) have not been combined with survey responses. This study has shown the utility of combining these methods when analysing co-worker social exchange relationships that involve many individuals.

Fourth, this study advanced understanding of individual behaviours on online platforms. It adds new knowledge to the literature on individual antecedents of participation in online platforms (e.g. Bagozzi & Dholakia, 2006; Ma & Agarwal, 2007; Ren et al., 2007; von Hippel & von Krogh, 2003; Wasko & Faraj, 2005). Prior literature has shown that identification to the online community has a positive impact on knowledge contribution by participants (Bagozzi & Dholakia, 2006; Ren et al., 2007); in contrast, individuals' orientation to reciprocal exchange exerts a negative impact on such contribution (Wasko & Faraj, 2005). This thesis extends this stream of research by integrating the two major theoretical approaches, identification and SET, in one framework, and introducing the concept of GEO. In addition, this study contributes to the emerging body of literature on the influence of an organisation's social structure on online behaviours. Online platforms provide a new way to organise across physical distances and organisational boundaries created by the bureaucratic structure of an organisation (Zammuto et al., 2007), and prior studies have suggested that the reduced level of social information (e.g. one cannot physically observe who other participants are) enables online communities to overcome social boundaries (Kiesler et al., 1984; Sproull & Kiesler, 1986, 1991). Despite such expectations, a recent study has suggested that an organisation's existing social structure influences individuals' behaviours in these virtual online spaces (Hwang et al., 2015). This thesis extends these findings in two ways. First, it shows interaction between individual orientations and interpersonal ties in a real workplace, suggesting that the impact of real-world relationships varies by individual. Second, it shows that the combination of GEO and organisational identification facilitates the flow of information beyond social boundaries within an organisation.

7-5. Theoretical implications

These findings have a number of theoretical implications for the study of generalised exchange and individual orientations to such exchange.

7-5-1. Co-evolution of GEO, identification and generalised exchange

First, the results suggest a complex interplay between individuals' orientations, identification and individual behaviours and imply co-evolution of individuals' orientations and identification with generalised exchange as a collective phenomenon.

The results suggest that individuals' behaviours are not only influenced by their own levels of GEO but that they are also influenced by the levels of other individuals in a collective. GEO makes individuals actively participate in generalised exchange in a collective to which they identify, and this "active participation" may be contagious. As found in Chapter 6 and elsewhere (Baker & Bulkley, 2014), when one receives responses from other participants on an online platform, he/she becomes more likely to provide responses to questions by other participants for up to three weeks. The effect of this paying-it-forward mechanism was also found in non-online settings (e.g. Westphal et al., 2012). This evidence suggests that individuals with strong GEO do not only give resources to other participants but also stimulate them to become "active" through the paying-it-forward effect. In other words, the flow of resources also transmits the "activeness" in generalised exchange. This contagion is likely to result in mutual influences among individuals. Imagine a team that consists of a person ("X") with a relatively weak GEO and others with a relatively strong GEO; assume all members have strong identification with the team. The weak GEO would discourage X from demonstrating discretionary behaviours to other members of the team. However, other members would actively engage in such behaviours towards the members of the team, including X. As a result, X is likely to receive benefits from co-workers, which will lead X to engage in discretionary behaviours. That said, if an individual with a relatively strong GEO is surrounded by those with a relatively weak GEO, he/she would less actively demonstrate discretionary behaviours to co-workers compared to the same person surrounded by those with a relatively strong GEO.

This suggests non-linear relationships between the levels of GEO at the individual level and the levels of resource flow at the collective level. Suppose there are organisations of similar size, with varying levels of average GEO among their members. To avoid complexity, I assume their levels of organisational identification are similar. In the hypothetical organisation with the lowest average level of GEO, each individual is less likely to engage in unilateral giving, and, as a result, members do not act as an impetus for one another. On the other hand, the hypothetical organisation with highest average level of GEO, individuals act as an impetus for one another by engaging in unilateral giving behaviours. Such a contagion effect among members would be stronger when the levels of GEO are higher. Hence, the relationship between the average levels of GEO and resulting levels of resource transfer in the organisations would form an increasing convex curve.

Furthermore, there may be reciprocal relationships between participation in generalised exchange, organisational identification and GEO. Prior studies have revealed that receiving benefits in generalised exchange promotes a sense of identification, solidarity and trust towards the collective in which generalised exchange takes place (Inaba & Takahashi, 2012; Molm et al., 2007; Willer et al., 2012). The results of this study indicate that such increased identification further motivates individuals to demonstrate discretionary behaviours that benefit others in the collective. In addition, the results from Chapter 4 suggest that long-term exposure to depersonalised trust towards members of a collective is likely to promote GEO, which will also lead people to engage in discretionary behaviours towards others; in turn, other participants receive benefits. As generalised exchange is a collective phenomenon that involves multiple actors, such reciprocal relationships happen across levels. At the individual level, each person receives different levels of benefits from co-workers, leading to changes in their organisational identification, trust, GEO and subsequent behaviours. At the collective level, changes in individual behaviours lead to changes in the volume and frequency of resource flow, which leads to changes in how much each member receives from other members of the collective. In short, such reciprocal relationships may result in the co-evolution of GEO and organisational identification among organisation members and the flexible flow of resources across an organisation. Some studies have empirically shown reciprocal relationships between individuals' perception about exchange partner and their behaviours in reciprocal social exchange. For example, Conway and Coyle-Shapiro (2012) reported a reciprocal relationship between psychological contract fulfilment and employee performance, and Halbesleben and Wheeler (2015) found reciprocal relationships between perceived co-worker support and OCBs. The evidence provided by this thesis, combined with findings from prior studies, seems to suggest similar dynamics may be at play in generalised exchange.

7-5-2. Boundaries of generalised exchange

Second, the findings have implications regarding the boundaries of generalised exchange. Whereas generalised exchange is defined as a social exchange that takes place in a social group (e.g. Flynn, 2005; Molm, 2000; Yamagishi & Cook, 1993), the conditions defining the boundaries of generalised exchange have received negligible examination in the literature. The findings on the role of organisational identification as a moderator suggests the influence of social boundaries within an organisation as shaping the boundaries of generalised exchange. As I noted before, individuals do not always develop identification with the entire organisation – they may strongly identify with a subgroup within an organisation (Ashforth et al., 2008). In such cases, GEO is likely to lead discretionary behaviours only towards members of the subgroup. Therefore, if an organisation is compartmentalised into organisational silos and its organisational practices lead individuals to identify with its subunits, generalised exchange would happen only within the subunit, rather than across the entire organisation.

While the study of Chapter 6 took place in a company with some hundreds of employees, online platforms can connect individuals in much larger organisations with broader geographic scope, such as multinational corporations (MNCs) (cf. Hwang et al., 2015). Such organisations have complex social structures with highly diversified functions located around the world as well as employees with diverse backgrounds. Research on identification in MNCs suggest employees in multinational corporations develop distinct identifications with their local office and the entire organisation (Reade, 2001b; Reade, 2001a); these multiple identifications may conflict with each other (Vora & Kostova, 2007). The findings of the current thesis suggest that such identification is likely to affect social exchange relationships. In addition, individuals are embedded in the unit-level structure of an organisation, and there may be conflicts of interest between headquarters and subsidiaries (Roth & Nigh, 1992; Schotter & Beamish, 2011) and between subsidiaries (Birkinshaw & Lingblad, 2005; Chen, Chen & Ku, 2012; Conroy & Collings, 2016; Luo, 2005). Interactions between individuals in different organisational units (e.g. headquarters, subsidiaries) take place in the context of such subunit-level relationships; thus, the subsidiary-level relationships may influence individual-level social exchange relationships. Such social boundaries and subunit-level interunit relationships are not quite relevant for co-worker relationships within teams. Therefore, their influence has attracted little attention in previous research on co-worker social exchange relationships.

Along with boundaries based on formal organisational structure, boundaries based on salient social characteristics, such as gender, race and education, may also act as boundaries of generalised exchange relationships. Studies on homophily, which refers to the extent of similarity in social status and position, have shown that individuals with similar social characteristics tend to mingle and develop social ties within the group rather than with individuals who do not have characteristics in common (McPherson, Smith-Lovin & Cook, 2001). Social similarity signals common interests and world views (e.g. Marsden, 1988; McPherson & Smith-Lovin, 1987) and implies the existence of common knowledge and behavioural patterns that facilitate communication (Hwang et al., 2015; Lincoln & Miller, 1979). Such perception might lead to the emergence of generalised exchange relationships based on shared social characteristics within an organisation. For example, it is well known that male employees – the majority in many organisations – tend to have better access to organisational resources (Hultin & Szulkin, 1999). This phenomenon has been traditionally analysed from a social-network perspective: male employees develop wider networks because of their majority, particularly those in the upper layers of organisational hierarchy, which helps them gain access to resources (Ibarra, 1992). However, generalised exchange based on gender difference may also explain the phenomenon: male employees can access resources that other males, including those in senior positions, have, even when they do not have established relationships with the person and do not have something to reciprocate.

Apart from within-organisation subgroups, the findings also imply that generalised exchange may emerge beyond an organisation. One example is business groups, which are well known in East Asia, such as the Japanese Keiretsu and the Korean Chaebol, but which are also increasingly observed in other emerging economies (Khanna, Palepu & Sinha, 2005). Business groups create a sense of identity and solidarity norms among its member firms and their employees (Granovetter, 2010). This sense of identity and solidarity might facilitate generalised exchange beyond the boundary of individual member firms of a business group, leading to flexible collaboration and transfer of resources, such as knowledge and expertise, among employees of different member firms. Another example is corporate alumni networks, which have been common in professional industries such as consulting, but which are increasingly common in other industries (Bardon, Josserand & Villesèche, 2015). Bardon et al. (2015) found that such networks help companies maintain organisational identification among ex-employees. Such a shared sense of membership might facilitate helping behaviours between alumni as well as between alumni and the current workforce. In addition, occupational groups might have a similar function. If one identifies with an occupation rather than organisational unit, such identification might lead one to engage in generalised exchange with members of the same occupation in other organisations. For example, an academic researcher who strongly identifies him/herself as an OB researcher, as opposed to a member of his/her university, is likely to engage in interactions with other researchers on academic platforms, such as ResearchGate or the mailing list of the OB division of the Academy of Management, rather than interacting with other researchers at the same university. The prevalence of Internet access allows employees from different organisations to connect using external platforms; this issue has important implications for organisational management.

The above discussion also implies that the boundaries of one’s unilateral giving behaviour might be fluid, changing from time to time. In one situation, one might consider gender a salient characteristic and consider those of the same gender as his/her in-group, whereas in another situation, membership in an organisation might become salient, leading one to consider those in the same organisation as one’s in-group regardless of gender. Furthermore, when one strongly perceives that he/she and others are members of the collective human beings, he/she might demonstrate unilateral giving behaviours to whomever. In addition, the tendency to follow such different situational cues might vary by individuals. For example, individuals with strong cosmopolitanism, which refers to "an individuals' orientation or identity horizon that transcends the conventional local boundaries of social entities such as corporations, communities, nation states or the country of origin" (Lee, 2015), may tend to be less influenced by social cues that emphasise social boundaries.

7-5-3. The role of social context in shaping individual orientations

The findings also suggest that individuals' social exchange orientations change over the course of a life and career and that social context impacts this trajectory. The findings from Chapter 5 suggested that exposure to depersonalised trust and task interdependence positively impact the development of GEO and that the former positively impacts REO. These findings suggest that the pattern of individuals' SEOs changes over the course of people's professional career depending on the characteristics of their workplace. Prior research revealed that individuals show different propensities to follow the norm of reciprocity between work and non-work settings (Belmi & Pfeffer, 2015), implying that individuals develop distinct patterns of social exchange orientations for workplace relationships and non-work relationships. Given that people generally start working in early adulthood after spending 20+ years in society, workplace-specific SEOs might develop based on the social exchange orientations in non-work settings that people develop during early stages of life. As briefly mentioned in Chapter 2, I expect that the development of social exchange orientation is similar to the development of attachment styles. Studies of attachment style found evidence that support the influence of early experience to general attachment style, but later experience forms target-specific attachment styles (Ainsworth et al., 2015; Bowlby, 1969, 1979; Fraley, 2007; La Guardia et al., 2000). This suggests that general orientations to different forms of social exchange might be formed through interactions with close individuals, such as family and friends in early stages of life, whereas such general orientations provide a basis for the development of workplace-specific orientations (i.e. SEOs). The findings in Chapter 4, namely that the three facets of SEOs have distinct relationships with personality traits, support this view. While inherited genetic factors account for roughly 50% of individual differences in the big-five personality traits (Bouchard & Loehlin, 2001), personality traits develop throughout childhood, adolescence and young adulthood (Roberts, Caspi & Moffitt, 2003; Roberts & DelVecchio, 2000). Therefore, personality and orientation to different forms of social exchange might co-develop through early life stages. For example, children who grow up in a family characterised by mutual trust and voluntary participation in neighbourhood activities might be more likely to develop orientations to generalised exchange along with prosocial personality traits, such as agreeableness and conscientiousness. Such individuals would be more likely to develop high levels of GEO in workplaces compared to those who grow up in small families with members who value independence.

The findings of the thesis also imply that when individuals move into new workplaces, they might bring orientations developed through experiences in previous workplaces. In spite of increasing levels of mobility among professional workers (Cappelli, 2000), social exchange research rarely investigates the impact of previous workplace on the way individuals engage in social exchange relationships in current workplaces (see Buch, Kuvaas, Shore & Dysvik, 2014 for an exception). However, the findings in this thesis suggest, for example, that individuals who experienced a low-trust work environment for a certain period of time in their previous workplace might be reluctant to engage in generalised exchange, even if their current organisational context is supportive of generalised exchange.

This discussion about the influence of early experiences and organisational context further implies that the influence of societal context, such as culture and institutions, on the development of general and workplace-specific social exchange orientations. Culture is learned through early experiences of social interactions (Hofstede et al., 2010) and reflected in various aspects of social life, such as family, local community and organisational life (Triandis, 1995b). This implies the influence of societal-level culture on the development of general orientations to different forms of social exchange. For example, the traditional family structure in China is characterised by an extended family, in which individuals are interconnected through paternal lineage and share responsibility and resources with one another (Fei, 1992). Such an environment might lead young children to develop an orientation towards generalised exchange. There are also significant variations in employment practices between countries, which might also affect the development of social exchange orientations. For example, Japanese organisations are characterised by a blurred boundary of individual roles and high levels of interdependence within and across functional areas, while employment practices in the UK and US are characterised by much clearer demarcation of job boundaries (Lam, 1997; Marsden, 1999). The findings in Chapter 5 imply that such societal differences in employment practices may lead to societal differences in SEOs.

7-5-4. Regulatory mechanisms of social exchange

The final area of implications of this thesis relates to the three regulatory mechanisms of social exchange. First, the evidence not only supports the universality of the rule of collective reciprocity as a regulatory mechanism of generalised exchange but also implies its universality. The data sets I collected in two considerably different societies, Japan and the US, supported the existence of individuals' orientation to the rule of collective reciprocity and its manifestation by lower-order orientations to UGI, PIF and RWR. Although this thesis did not examine data from other societies, it provides evidence that the rule of collective reciprocity is shared by many individuals, to different degrees, across multiple societies. Indeed, generalised exchange has been observed in various aspect of human life (Molm et al.,

2007) and proverbs expressing ideas similar to that of the rule of collective reciprocity can be found in many parts of the world (Takahashi, 2000). Hence, as in the case of the universal norm of reciprocity (Gouldner, 1960), the rule of collective reciprocity might also be embedded in various human societies as a social norm.

The identification of the rule of collective reciprocity as the regulatory mechanism of generalised exchange might have implications beyond the OB literature because generalised exchange is observed widely in various aspects of life, and it is thought to be the source of cooperation and moral systems in human society (e.g. Alexander, 1987; Nowak & Sigmund, 1998; Takahashi, 2000). One particularly relevant area of investigation is the micro-level origin of prosocial behaviours, which spans from personality and developmental psychology to evolutionary biology and neuroscience (Penner, Dovidio, Piliavin & Schroeder, 2005). Prior studies in this field have identified, based on evolutionary simulations, that reputation is the key source of cooperation (e.g. Nowak & Sigmund, 1998; Takahashi, 2000). These studies have found that when assuming actors selectively engage in cooperative behaviours based on the reputation of other actors (whether they have acted cooperatively with others), cooperative actors thrive in competition with defective actors, and cooperation prevails. On the other hand, Baker and Bulkley (2014) recently pointed out that positive affect may also play a role based on their findings that paying-it-forward played a more important role than rewarding reputation in facilitating generalised exchange relationships among MBA students and prior research findings that the positive emotion of gratitude mediates paying-it-forward behaviours (McCullough, Kimeldorf & Cohen, 2008). However, the findings from this thesis suggest that individuals engage in generalised exchange because they blur distinction between the interests of self and others, and this implies that the brain function of empathetic perspective taking, which leads individuals to consider others' problems and concerns as their own and to take actions (de Waal, 2008), might also be part of the micro-foundations of prosocial behaviours. These might have co-evolved and contributed to the emergence of cooperation among humans.

Although this study focused on the exchange of positive resources (i.e. favourable treatments), the findings suggest that there might also be a negative version of GEO, an individual orientation in favour of the rule of collective reciprocity in the exchange of negative resources (mistreatment). In his seminal work on the norm of reciprocity, Gouldner (1960) broached the idea of the reciprocation of mistreatment, though the work primarily focused on reciprocation of favourable treatment. Other researchers have also investigated the idea of a negative reciprocity norm (Helm, Bonoma & Tedeschi, 1972; Youngs, 1986); Eisenberger et al. (2004) operationalised individual orientation to reciprocate mistreatment and demonstrated that it is distinct from orientation to reciprocate favourable treatment. The results of their experiments suggest that those with strong orientations tend to retaliate mistreatment more agressively, supporting the reciprocation of negative behaviours. Furthermore, researchers who have studied negative behaviours in the workplace, such as undermining, deviance and incivility, report phenomena that are structurally similar to paying-it-forward and rewarding reputation. First, victims of workplace undermining sometimes become perpetrators of undermining, spreading the chain of negative behaviours (Andersson & Pearson, 1999; Aquino & Thau, 2009; Lee, Kim, Bhave & Duffy, 2016). Structurally, this is equivalent to paying-it-forward, though the nature of the behaviour is opposite. Second, those who witness someone mistreating other people sometimes retaliate against the perpetrator on behalf of the victim (Kahneman, Knetsch & Thaler, 1986; Reich & Hershcovis, 2015; Turillo, Folger, Lavelle, Umphress & Gee, 2002). A variation of such third-party punishment is also observed in supervisor–member relationships; an employee witnessing abusive supervision of other employees occasionally engages in supervisor-targeted deviance behaviours (Mitchell, Vogel & Folger, 2015). Again, this is structurally similar to rewarding reputation insofar as observation of negative behaviours to others leads one to punish the perpetrator. These might signal the existence of a negative rule of collective reciprocity and that those who favour the rule tend to engage in generalised exchange of negative behaviours; however, the detailed examination of such a possibility falls out of the scope of this thesis.

Second, this thesis highlights a potential limitation in applying individuals' orientation to the norm of reciprocity to team–member relationships. Differences in the findings about the impact of individual orientation in favour of the norm of reciprocity between this study (Chapter 6) and a prior study (Ladd & Henry, 2000) suggest a potential problem in prior approaches about the orientation in the literature. As I mentioned in Chapter 2, Ladd and Henry (2000) authored one of the rare studies analysing the impact of individual differences in co-worker relationships that involve multiple individuals. In the study, the authors treated co-workers as a collective; their research model consisted of social support from co-workers (independent variable), OCB-I (dependent variable) and a modified version of exchange ideology (Eisenberger et al., 1986), which asked about individuals' beliefs regarding applying the norm of reciprocity in interactions with co-workers as a collective. The authors did not find a significant moderation effect for the modified version of exchange ideology. Yet, the current study directly captured individual transactions, treated individual transaction opportunities as the unit of analysis and used the REO measure, which ensured that I asked about individuals' beliefs regarding applying the norm of reciprocity in interactions with each individual. As reported in Chapter 6, I found that the impact of REO varies as a function of the existence (or absence) of interpersonal ties between individuals. The results imply that the norm of reciprocity leads individuals to differentiate their behaviours towards each exchange partners based on the quality of relationships, rather than treating co-workers as a collective. Interestingly, the two experimental studies on the impact of individual orientations on interactions with one exchange partner (Eisenberger et al., 2004; Gallucci & Perugini, 2003) both revealed a significant moderation effect of individual orientation in co-worker relationships. This evidence suggests that the lack of a significant moderation effect by individual orientation in Ladd and Henry (2000) might stem from the fact that they treated co-workers as a collective. This issue certainly needs further investigation because this dyadic approach to team–member social exchange relationships has been widely used and contributed to the literature (e.g. Banks et al., 2014).

It is recommended that researchers conceptually distinguish the norm of (individual) reciprocity, by which individuals distinguish individual exchange partners, and the rule of collective reciprocity, by which individuals treat multiple exchange partners as a collective. As shown in Chapter 6, they have a distinct impact on individual behaviours, and this is particularly relevant to the study of co-worker relationships involving a large number of individuals. In addition, the measurement instruments also need to reflect this distinction. As I noted in Chapter 2 and 3, existing measures of individuals' orientation in favour of the norm of reciprocity in interpersonal relationships, such as the acceptance of the norm of reciprocity (Eisenberger et al., 1987) and the personal norm of reciprocity (Perugini et al., 2003), did not have a clear focus on interactions with individuals.

Third, the identification of NEO as a distinct orientation also has implications for the literature. This will help researchers investigate how individual differences shape their engagement in negotiated social exchanges. As I noted in Chapter 2, Blau's (1964) notion of economic exchange is conceptually equivalent to negotiated exchange in this thesis. There is an emerging stream of research on the development of economic exchange along with that of social exchange in employee–organisation relationships as well as leader–member relationships. For example, Shore, Tetrick, Lynch and Barksdale (2006) introduced the concepts of economic and social aspects of employee–organisation exchange, and their measures have successfully distinguished the two types of social exchange relationships empirically and shown differential relationships with other constructs (Kuvaas & Dysvik, 2009; Shore et al., 2009; Song, Tsui & Law, 2009). While NEO is focused on interpersonal relationships, the findings of this study suggest that individuals might have distinct orientations in favour of negotiated exchange in employee–organisation relationships, and such orientation might direct individuals to develop economic exchange relationships with their employers. Similarly, Buch, Kuvaas and Dysvik (2011) developed a measure of economic LMX and showed it is distinct from social LMX. The authors also show the two types of LMX are associated with different leader-related antecedents (Kuvaas & Buch, 2016). NEO and REO might also work as antecedents of these social exchange relationships.

7-6. Practical implications

This thesis has several important implications to organisations. The prevalence of failed IT initiatives to promote knowledge exchange (Hislop, 2002) suggests that organisations struggle to achieve the goal. The findings of this study clearly show that generalised exchange has the potential to promote the flexible flow of resources on online platforms among employees beyond existing interpersonal networks and that organisations can work on three areas to overcome such challenges. First, promotion of the generalised exchange of resources requires employees to be identified to the entire organisation. Hence, investment in organisational practices that nurture the sense of "I am a Googler" or "I am an IBMer" regardless of functional areas and geographic locations would help organisations achieve this goal. For example, organisational prestige and distinctness is well known to facilitate identification (Dutton et al., 1994; Mael & Ashforth, 1992), and it has a particularly strong impact on identification with the organisation as a whole rather than with its closer subunits (Bartels, Pruyn, De Jong & Joustra, 2007). More generally, firms can use organisational communication tactics that highlight the unity of their members (e.g. saying “we”, highlighting external praise, emphasising a common cause) (DiSanza & Bullis, 1999) and implement a newcomer socialisation process to forge organisational identification (e.g. Pratt, 2000) through sensebreaking (encourage departure from current identity) and sensegiving (provide new identity as a member of the organisation) (Ashforth et al., 2008). Such practices might also promote GEO among employees, as proposed in Chapter 2.

Second, organisations will also benefit from establishing an organisational environment that fosters GEO among employees. As shown in Chapter 5, high levels of task interdependence are likely to lead to the development of GEO. To increase task interdependence, organisations might structure the pattern of workflows to be more reciprocal (rather than independent or sequential) (Tesluk, Mathieu, Zaccaro & Marks, 1997) or form teams with individuals with unique resources and information (Kirkman, Rosen, Tesluk & Gibson, 2004). More generally, the application of the “adhocracy” principle (Mintzberg, 1980) of organisational design – flexible structure, high levels of specialisation and limited use of formalisation – would also promote task interdependence. The findings from Chapter 4 also suggest that depersonalised trust nurtures GEO. Depersonalised trust typically stems from rules and norms that encourage individuals to behave in an honest and trustworthy way and to engage in the socialisation of members to the rules and norm (Kramer, 1999). The existence of rules and norms allows individuals to expect others to behave in a certain way, even when they do not have specific knowledge about the person. For example, Hewlett-Packard implemented an “open lab-stock policy”, which allows all engineers to access any equipment and even bring it home for personal use. Such a practice sends subtle signals of managements’ trust in employees, which, in turn, promote trustworthy behaviours among employees (Miller, 1993). More visible, straightforward approaches include the incorporation of collaborative behaviours in performance-evaluation criteria and link it with rewards. Such practices would lead employees to consider it their job to be cooperative (Coyle-Shapiro et al., 2004).

Thirdly, the development of boundary-spanning interpersonal ties would also help facilitate the flexible flow of resources among employees. The results discussed in Chapter 6 suggest that REO has a negative effect on knowledge-sharing behaviours when one interacts with someone with whom he/she does not have interpersonal relationships. As REO has positive, and relatively strong, correlation with GEO, individuals with strong GEO tend to have relatively strong REO. Therefore, the lack of interpersonal relationships can be a serious obstacle to promoting the flexible flow of resources and firms can benefit from investing in the development of interpersonal ties beyond organisational and geographical boundaries. From this perspective, the practices of a top-tier international-management consulting firm reported in Levine and Prietula (2012) are highly suggestive: the firm heavily invests in initiatives to form interpersonal ties within and across offices, such as a visitor programme that encourages members to work in offices outside their country, a generous travel budget, internal gatherings, sports tournaments and a mandatory policy of regular desk rotation. In conjunction, these practices prevent a lack of interpersonal ties from hindering knowledge-sharing behaviours.

7-7. Limitations

Despite its contributions and implications, this thesis has several limitations that I would like to acknowledge in this section.

First, the data I used in this thesis does not warrant causal claim. The studies in this thesis employed either cross-sectional, longitudinal or lagged design, and none of them apply random-controlled experimental design or quasi-experimental design. This is particularly relevant for Chapter 4, despite the chapter following widely used approaches in examining the validity of the new constructs. As Borsboom, Cramer, Kievit, Scholten and Franic (2009) warned, validity is fundamentally a causal concept; therefore, the current approach to examine validity based on correlation has limitations in showing that the new scales measure what they are intended to measure (Kelley, 1927). To examine if SEO scales really measure the construct that I intended for them to measure, an experimental study that examines if SEOs predict relevant behaviours would be appropriate, rather than relying on indirect information based on the analysis of the nomological network (Podsakoff, Podsakoff, MacKenzie & Klinger, 2013). While I acknowledge it as a limitation of this thesis, I also would like to mention an alternative approach that I employed in Chapter 4. In stage 4 of Chapter 5, I examined the relationships between SEOs and work performance by collecting data by means of employee self-reporting and supervisor ratings. I made sure that the data collection for independent variables (SEOs, creditor ideology and reciprocity wariness) precedes the data collection for dependent variables (job performance), though the time gap is relatively short (2 weeks); thus, the design is still cross-sectional. This design reduces the problems of common method variance (Podsakoff et al., 2003) and thus provides more robust evidence for the validity of SEOs compared to solely relying on self-report surveys.

In terms of Chapter 5 and 6, it would probably be unethical and/or unrealistic to employ an experimental design in studying changes in SEOs and the impact of organisational context over a long period of time (Chapter 5) or in analysing the impact of GEO on knowledge-sharing behaviours on an in-house online platform (Chapter 6). Hence, instead of employing experimental design, I implemented a number of measures to deal with the limitations of non-experimental design. First, in Chapter 5, I used a longitudinal panel design. This design has considerable advantages relative to typical lagged-measurement design, such as controlling for initial state of the dependent variable (thus avoiding the influence of confounding exogenous variables) and ruling out reverse causation (Cole & Maxwell, 2003; Parker et al., 2014). However, as the number of measurements (two times) is smaller than recommended (Chan, 1998; Ployhart & Vandenberg, 2010), further studies that employ more measurement occasions is necessary to validate the preliminary findings reported in the chapter. In Chapter 6, I employed a lagged design, measuring the independent variable once before measuring the dependent variable; the measurement of the dependent variable took place repeatedly over a considerable duration of time. To account for a potential confounding effect by exogenous variables, I incorporated a substantial number of control variables, such as prior interaction history, time, types of questions, if a responder is active user and demographic characteristics of responders that capture variations in skills and status. However, future research would benefit from employing longitudinal design with multiple measurement of independent variables.

Second, a considerable amount of data I used in this thesis was collected in Japan, which may affect the generalisability of the findings, though the conceptual discussion and research design of this thesis are not specific to the Japanese context and Chapter 4 has shown that the new scales for SEOs are applicable in multiple societal contexts. As I mentioned above, Japan is characterised by collectivistic and tight culture (Chan et al., 1996; Hofstede et al., 2010; House et al., 2004; Triandis, 1995b), and blurred job boundaries and high levels of task interdependence are common practice among Japanese firms (Lam, 1997; Marsden, 1999). In addition, Japan's institutional framework provides high levels of employment security and opportunities for internal career development for core employees (Aoki, 2001; Hall & Soskice, 2001), although Japan' recently experienced a considerable change towards more liberal system (Sako, 2007). These conditions are rather advantageous for this thesis, as cultural characteristics are likely to aid the development of general orientation to generalised exchange in the early stages of life and to provide an organisational context likely promote the development of GEO. However, it might also limit the applicability of the findings of this thesis to other societal contexts characterised by individualistic and loose culture and a liberal institutional environment. Further studies in other societal contexts are certainly needed to examine the generalisability of the present findings.

Third, this study has employed a variable-centred approach in analysing SEOs' relationships with antecedents and consequences and did not apply a person-centred approach. While a variable-centred approach has been widely accepted in various domains of the OB literature, it has certain limitations in both theory development and empirical analysis (Meyer & Morin, 2016; Zyphur, 2009). The variable-centred approach assumes that each predictor has independent effects on the outcome of interest (Zyphur, 2009), and that it is possible to estimate a set of parameters that uniformly applies to the entire population (Meyer & Morin, 2016). While this approach also allows for the assessment of interactions among variables (Aiken & West, 1991), it is often empirically challenging to detect complex interactions and assumes linear effects (Marsh, Hau, Wen, Nagengast & Morin, 2013; McClelland & Judd, 1993). I adopted these assumptions in discussing the three facets of SEOs, treating them as separate entities with independent effect on individual behaviours. However, they might work as a pattern/profile, and a certain pattern of orientations might be uniquely associated with individual behaviours. For example, GEO might have different effects on individual behaviours for those who have strong NEO and REO relative to those with weak NEO and REO. Future research might benefit from applying the alternative person-centred approach, which is increasingly applied in various topics, such as commitment (Meyer & Morin, 2016), leadership (Zaccaro, 2012) and motivation (Moran, Diefendorff, Kim & Liu, 2012).

Fourth, the conceptual discussion did not fully address the impact of hierarchy on generalised exchange, though I controlled for the impact of hierarchy in analysing the impact of GEO on behaviours in Chapter 6. Prior studies have reported several types of indirect reciprocation in vertical social exchange relationships. First, the trickle-down effect of positive treatment through hierarchy is well known, and it is structurally similar to the paying-it-forward mechanism. For example, Ambrose, Schminke and Mayer (2013) reported that when supervisors perceive that they are fairly treated by their supervisors, they tend to treat their subordinates fairly. Eisenberger et al. (2014) showed that when supervisors perceive high levels of support from their employers, they tend to develop high-quality LMX with subordinates, which triggers subordinates' demonstration of OCB. Also, Reiche, Cardona, Lee, Canela, Akinnukawe, Briscoe et al. (2014) reported behaviours similar to those associated with the rewarding-reputation mechanism: when subordinates demonstrate OCB-I (towards co-workers) and OCB-O, supervisors tend to demonstrate trustworthy behaviours towards subordinates. The authors pointed this is indirect reciprocation, as supervisor is not a direct beneficiary of the subordinates' behaviours. This evidence suggests that generalised exchange might embrace not only horizontal but also vertical relationships. Individuals occupying a higher position in a hierarchy tend to have better access to resources, such as power, authority and information, and prior studies on social-exchange networks have shown that such resources shape the way individuals engage in exchange relationships (e.g. Cook & Emerson, 1978; Cook, Emerson, Gillmore & Yamagishi, 1983). Hence, hierarchy might have a unique influence on individuals' behaviours in generalised exchange. Although I did not find a significant effect of hierarchy in Chapter 6, this topic certainly requires further conceptual discussion and empirical investigation.

7-8. Future research

There are many interesting directions for future research. First, while this study has focused on individuals' discretionary behaviours as outcome of individuals' engagement in generalised exchange, future research might investigate other outcomes. Researchers might investigate collective-level outcomes, such as learning capability, adaptability and performance. As generalised exchange is a collective phenomenon that emerges from discretionary behaviours by individual members of an organisation, it has considerable potential as a theoretical framework that bridges individual-level capability/performance and collective-level capability/performance. For example, high levels of GEO among organisation members are likely to promote flexible collaboration among individuals in an organisation and, in turn, are likely to promote the capability of an organisation beyond the simple sum of individuals' capabilities.

The development of psychological bonds between individuals and the collective also merits investigation as outcomes of generalised exchange. As discussed above, the available evidence suggests that participation in generalised exchange promotes the sense of identification with a collective (Inaba & Takahashi, 2012; Molm et al., 2007; Willer et al., 2012). Hence, individuals with strong GEO might develop organisational identification through participation in generalised exchange, though, in this thesis, I treated organisational identification as a moderator. Researchers might also investigate the co-evolution of GEO and organisational identification and generalised exchange of resources that I discussed in the previous section. Such dynamic co-evolution might be typically found in voluntary initiatives on the Internet, such as open-software development projects. However, something similar might also happen in an organisation. For example, members of newly formed teams might develop different levels of identification with the team based on the level of generalised exchange taking place within each team. It would also be interesting to investigate the impact of participation in generalised exchange on newcomers. For example, an in-house online knowledge-exchange platform is likely to benefit newcomers' acquisition of task- and organisation-related knowledge from a wide range of individuals in an organisation, and the positive experience would turn into identification with the collective – in this case, the organisation. The discussion in Chapter 2 and findings of Chapter 4 indicate that organisational context might influence the co-evolution process. In other words, by introducing organisational practices that nurture GEO among employees, organisations might accelerate the co-evolution, while the opposite might also happen. For example, Shibayama et al.'s (2012) finding that the prevalence of commercialism (academic entrepreneurship) in material- and life-science disciplines is associated with lower levels of researchers' engagement in unilateral helping of other researchers suggests that the introduction of a reward system that emphasises individual performance might deteriorate the co-evolution of individual orientation/identification and collective-level exchange of resources. As the analysis of such interplay considers top-down and bottom-up cross-level influences and dynamic temporal changes at both the individual and organisation levels, it would be particularly fruitful for such investigations to adopt multilevel and/or longitudinal design.

Furthermore, researchers might investigate the impact of GEO (and other facets of SEOs) on the behaviours of corporate leaders and their organisations. As the upper-echelon perspective (Hambrick & Mason, 1984) suggests, corporate leaders' orientations might have a profound impact on the behaviours of the employees in the organisations they lead. For example, GEO might be associated with responsible behaviours by corporate leaders and organisations. Organisations and their leaders are increasingly expected to be ethical and responsible for the impact of their behaviours with respect to their stakeholders, such as employees, business partners and local communities (Stahl, Pless & Maak, 2013) and demonstrate citizenship by tackling the world's socio-economic problems (Maak & Pless, 2009). One key premise of this increasing expectation of organisations and leaders is interdependence – organisations influence the other actors in society and are also influenced by them (Freeman, 2010; Litz, 1996). In other words, as actors are mutually interdependent, organisations that engage in activities that benefit other actors in society can eventually and indirectly benefit from their behaviours (Kramer & Porter, 2011). This logic echoes the concept of the rule of collective reciprocity and GEO. Indeed, if we view organisations as an actor, the actions of corporate social responsibility can be interpreted as unilateral giving towards other actors in society. In addition, generalised exchange has been associated with moral systems in human societies (Alexander, 1987). This suggests that leaders with high levels of GEO might be more eager to promote socially responsible activities in their organisation; as a result, organisations with such leaders might be more active in corporate social responsibility.

While this study has conducted a preliminary analysis of the impact of social environment and job characteristics, further investigation would certainly deepen our understanding of the role of contextual factors on the development of individual orientations. For example, how do socialisation tactics and other practices shape the development of workplace-specific social exchange orientations (i.e. SEOs) among newcomers? How do early work experiences and resulting SEOs affect their engagement in social exchange relationships in later career and their choice of workplaces? Studies on adult personality development indicate that individuals' personalities are not only influenced by surrounding environment (socialisation) but also influence individuals' choice of environment (selection) (Caspi et al., 2005). This suggests that individuals might choose to work in an organisational context that fits with their SEOs, and the mismatch might lead to exit from the workplace. It would also be interesting to investigate the development of social exchange orientation through early life stages. Although the findings of this thesis suggest that organisational context might influence the development of SEOs, it is not clear to what extent work experience changes the pattern of SEOs. Drawing on the attachment theory (e.g. Ainsworth et al., 2015; Bowlby, 1969, 1979), I discussed that early-life experiences might have a profound impact on later development. However, empirical studies are required to examine this proposition.

It would also be fruitful to investigate the source of boundaries in generalised exchange within and beyond an organisation and concomitant outcomes. The findings of this thesis suggest that individuals' identification with multiple social groups in and around organisations shape the way individuals engage in unilateral discretionary behaviours. However, under what circumstances might identification to a particular collective exert a strong influence on people's engagement in generalised exchange? How would identification with a larger organisational entity (e.g. entire organisation) and its subgroup (e.g. functional groups) interplay in shaping individuals' engagement in generalised exchange? How would conflict between multiple identifications (cf. Vora & Kostova, 2007) affect engagement in generalised exchange? In addition, individuals might engage in generalised exchange beyond the formal boundaries of an organisation. As I noted above, occupational groups, business groups and alumni networks are examples of potential sources of boundaries of generalised exchange. Generalised exchange beyond formal boundaries is likely to help an organisation's members access resources (e.g. information) that are not available within the organisation; thus, such exchange might promote the learning and adaptive capability of an organisation.

Beyond the impact of individual- and organisational-level factors, it would also be interesting to investigate the impact of societal context surrounding individuals and organisations. While prior studies have suggested individuals in collectivistic societies tend to be more likely to engage in reciprocal exchange (Baran, Shanock & Miller, 2012; Dulebohn et al., 2012) and generalised exchange (Flynn, 2005) than those from individualistic societies, the investigation into such cross-national differences still lacks accumulated empirical evidence. In addition, the discussion and findings of this study suggest that employment-related institutions might lead to country-level differences in SEOs. As organisations increasingly expand their activities beyond national boundaries, and more and more individuals interact with people beyond their country of origin, investigation into societal differences in orientations to different forms of social exchange would have significant implications in practice.

7-9. Concluding remarks

This thesis has unpacked the unique nature of generalised exchange, which has attracted surprisingly limited attention in the OB literature. Generalised exchange has the potential to facilitate exchange of resources between individuals beyond existing social networks; thus, it is increasingly relevant for contemporary organisations that aim to unleash employees' knowledge and expertise from the constraints of bureaucratic structure and geographic distances. However, it has become clear that there are individual differences in their orientation to follow the rule of collective reciprocity, the regulating mechanism of generalised exchange, and that the activation of this orientation requires individuals to feel a sense of shared identity with other individuals. The thesis also suggested that organisational intervention may promote such orientation among employees, though we clearly need more research to deepen our understanding of the dynamics of the emergence and development of generalised exchange in organisations.

References

The English Standard Version Bible. New York: Oxford University Press.

Adler, P. S. & Kwon, S.-W. 2002. Social Capital: Prospects for a New Concept. ***Academy of Management Review***, 27(1): 17-40.

Aiken, L. S. & West, S. G. 1991. ***Multiple Regression: Testing and Interpreting Interactions***. Thousand Oaks, CA: Sage.

Ainsworth, M. D. S., Blehar, M. C., Waters, E. & Wall, S. N. 2015. ***Patterns of Attachment: A Psychological Study of the Strange Situation***: Psychology Press.

Alavi, M. & Leidner, D. E. 1999. Knowledge Management Systems: Issues, Challenges, and Benefits. ***Communications of the AIS***, 1(2es): 1.

Alexander, R. D. 1987. ***The Biology of Moral Systems***: Transaction Publishers.

Allen, D. G. 2006. Do Organizational Socialization Tactics Influence Newcomer Embeddedness and Turnover? ***Journal of Management***, 32(2): 237-256.

Ambrose, M. L., Schminke, M. & Mayer, D. M. 2013. Trickle-Down Effects of Supervisor Perceptions of Interactional Justice: A Moderated Mediation Approach. ***Journal of Applied Psychology***, 98(4): 678.

Anderson, C. M., Riddle, B. L. & Martin, M. M. 1999. Socialization Processes in Groups. ***The handbook of group communication theory and research***: 139-163.

Anderson, J. C. & Gerbing, D. W. 1991. Predicting the Performance of Measures in a Confirmatory Factor Analysis with a Pretest Assessment of Their Substantive Validities. ***Journal of Applied Psychology***, 76(5): 732.

Andersson, L. M. & Pearson, C. M. 1999. Tit for Tat? The Spiraling Effect of Incivility in the Workplace. ***Academy of management review***, 24(3): 452-471.

Aoki, M. 2001. ***Toward a Comparative Institutional Analysis***. Cambridge, MA: MIT press.

Aquino, K. & Thau, S. 2009. Workplace Victimization: Aggression from the Target's Perspective. ***Annual review of psychology***, 60: 717-741.

Argote, L. 2012. ***Organizational Learning: Creating, Retaining and Transferring Knowledge***: Springer Science & Business Media.

Ariely, G. & Davidov, E. 2012. Assessment of Measurement Equivalence with Cross-National and Longitudinal Surveys in Political Science. ***European Political Science***, 11(3): 363-377.

Ashforth, B. E. & Mael, F. 1989. Social Identity Theory and the Organization. ***Academy of management review***, 14(1): 20-39.

Ashforth, B. E. & Saks, A. M. 1996. Socialization Tactics: Longitudinal Effects on Newcomer Adjustment. ***Academy of Management Journal***, 39(1): 149-178.

Ashforth, B. E., Sluss, D. M. & Harrison, S. H. 2007. Socialization in Organizational Contexts. ***International review of industrial and organizational psychology***, 22: 1.

Ashforth, B. E., Harrison, S. H. & Corley, K. G. 2008. Identification in Organizations: An Examination of Four Fundamental Questions. ***Journal of Management***, 34(3): 325-374.

Bagozzi, R. P. & Dholakia, U. M. 2006. Open Source Software User Communities: A Study of Participation in Linux User Groups. ***Management science***, 52(7): 1099-1115.

Bakan, D. 1966. ***The Duality of Human Existence: An Essay on Psychology and Religion***. Oxford, UK: Rand Mcnally.

Baker, W. E. & Dutton, J. E. 2007. Enabling Positive Social Capital in Organizations. In J. E. Dutton & B. R. Ragins (Eds.), ***Exploring Positive Relationships at Work: Building a Theoretical and Research Foundation***, vol. Lawrence Erlbaum Associates Publishers: 325-345: Mahwah, NJ.

Baker, W. E. & Bulkley, N. 2014. Paying It Forward Vs. Rewarding Reputation: Mechanisms of Generalized Reciprocity. ***Organization Science***, 25(5): 1493-1510.

Ballinger, G. A. & Rockmann, K. W. 2010. Chutes Versus Ladders: Anchoring Events and a Punctuated-Equilibrium Perspective on Social Exchange Relationships. ***Academy of Management Review***, 35(3): 373-391.

Bandura, A. 1997. Self-Efficacy: The Exercise of Control: New York: Freeman.

Bankins, S. 2015. A Process Perspective on Psychological Contract Change: Making Sense of, and Repairing, Psychological Contract Breach and Violation through Employee Coping Actions. ***Journal of Organizational Behavior***, 36(8): 1071-1095.

Banks, G. C., Batchelor, J. H., Seers, A., O'boyle, E. H., Pollack, J. M. & Gower, K. 2014. What Does Team-Member Exchange Bring to the Party? A Meta-Analytic Review of Team and Leader Social Exchange. ***Journal of Organizational Behavior***, 35(2): 273-295.

Baran, B. E., Shanock, L. R. & Miller, L. R. 2012. Advancing Organizational Support Theory into the Twenty-First Century World of Work. ***Journal of Business and Psychology***, 27(2): 123-147.

Bardon, T., Josserand, E. & Villesèche, F. 2015. Beyond Nostalgia: Identity Work in Corporate Alumni Networks. ***human relations***, 68(4): 583-606.

Barnard, C. I. 1938. ***The Functions of the Executive***. CA: Harvard University Press.

Bartels, J., Pruyn, A., De Jong, M. & Joustra, I. 2007. Multiple Organizational Identification Levels and the Impact of Perceived External Prestige and Communication Climate. ***Journal of Organizational Behavior***, 28(2): 173-190.

Bass, B. M. 1999. Two Decades of Research and Development in Transformational Leadership. ***European journal of work and organizational psychology***, 8(1): 9-32.

Bateman, T. S. & Organ, D. W. 1983. Job Satisfaction and the Good Soldier: The Relationship between Affect and Employee "Citizenship". ***Academy of management Journal***, 26(4): 587-595.

Batt, R. & Valcour, P. M. 2003. Human Resources Practices as Predictors of Work‐Family Outcomes and Employee Turnover. ***Industrial Relations: A Journal of Economy and Society***, 42(2): 189-220.

Belmi, P. & Pfeffer, J. 2015. How "Organization" Can Weaken the Norm of Reciprocity: The Effects of Attributions for Favors and a Calculative Mindset. ***Academy of Management Discoveries***, 1(1): 35-55.

Benko, C. & Anderson, M. 2013. ***The Corporate Lattice: Achieving High Performance in the Changing World of Work***: Harvard Business Press.

Bergeron, D. M. 2007. The Potential Paradox of Organizational Citizenship Behavior: Good Citizens at What Cost? ***Academy of Management Review***, 32(4): 1078-1095.

Bergeron, D. M., Shipp, A. J., Rosen, B. & Furst, S. A. 2013. Organizational Citizenship Behavior and Career Outcomes: The Cost of Being a Good Citizen. ***Journal of Management***, 39(4): 958-984.

Birkinshaw, J. & Lingblad, M. 2005. Intrafirm Competition and Charter Evolution in the Multibusiness Firm. ***Organization science***, 16(6): 674-686.

Bishop, J. W., Scott, K. D. & Burroughs, S. M. 2000. Support, Commitment, and Employee Outcomes in a Team Environment. ***Journal of Management***, 26(6): 1113-1132.

Bishop, J. W., Scott, K. D., Goldsby, M. G. & Cropanzano, R. 2005. A Construct Validity Study of Commitment and Perceived Support Variables: A Multifoci Approach across Different Team Environments. ***Group & Organization Management***, 30(2): 153-180.

Blau, P. M. 1964. ***Exchange and Power in Social Life***: John Wiley and Sons, Inc.

Bock, G.-W., Zmud, R. W., Kim, Y.-G. & Lee, J.-N. 2005. Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces, and Organizational Climate. ***MIS quarterly***: 87-111.

Borman, W. C. & Motowidlo, S. J. 1993. Expanding the Criterion Domain to Include Elements of Contextual Performance. In N. Schmitt & W. C. Borman (Eds.), ***Personnel Selection in Organizations***: 71. CA: Jossey-Bass.

Borsboom, D., Cramer, A. O., Kievit, R. A., Scholten, A. Z. & Franic, S. 2009. The End of Construct Validity. ***The concept of validity: Revisions, new directions, and applications***: 135-170.

Bouchard, T. J. & Loehlin, J. C. 2001. Genes, Evolution, and Personality. ***Behavior genetics***, 31(3): 243-273.

Bouty, I. 2000. Interpersonal and Interaction Influences on Informal Resource Exchanges between R&D Researchers across Organizational Boundaries. ***Academy of Management Journal***, 43(1): 50-65.

Bowlby, J. 1969. Attachment, Vol. 1 of Attachment and Loss: New York: Basic Books.

Bowlby, J. 1979. The Making and Breaking of Affectional Bonds. London (Tavistock) 1979.

Boyce, C. J., Wood, A. M., Daly, M. & Sedikides, C. 2015. Personality Change Following Unemployment. ***Journal of Applied Psychology***, 100(4): 991.

Boyd, R. & Richerson, P. J. 1989. The Evolution of Indirect Reciprocity. ***Social Networks***, 11(3): 213-236.

Brackett, M. A. & Mayer, J. D. 2003. Convergent, Discriminant, and Incremental Validity of Competing Measures of Emotional Intelligence. ***Personality and social psychology bulletin***, 29(9): 1147-1158.

Brewer, M. B. 1996. In-Group Favoritism: The Subtle Side of Intergroup Discrimination. ***Codes of conduct: Behavioral research and business ethics***: 160-171.

Brewer, M. B. & Gardner, W. 1996. Who Is This "We"? Levels of Collective Identity and Self Representations. ***Journal of Personality & Social Psychology***, 71(1): 83-93.

Brickson, S. 2000. The Impact of Identity Orientation on Individual and Organizational Outcomes in Demographically Diverse Settings. ***Academy of Management Review***, 25(1): 82-101.

Brief, A. P. & Motowidlo, S. J. 1986. Prosocial Organizational Behaviors. ***The Academy of Management Review***, 11(4): 710-725.

Brislin, R. W. 1970. Back-Translation for Cross-Cultural Research. ***Journal of Cross-Cultural Psychology***, 1(3): 185-216.

Brown, J. S. & Duguid, P. 2001. Knowledge and Organization: A Social-Practice Perspective. ***Organization Science***, 12(2): 198-213.

Buch, R., Kuvaas, B. & Dysvik, A. 2010. Dual Support in Contract Workers' Triangular Employment Relationships. ***Journal of Vocational Behavior***, 77(1): 93-103.

Buch, R., Kuvaas, B. & Dysvik, A. 2011. ***The Measurement and Outcomes of Economic Leader-Member Exchange Relationships***. Paper presented at the 71th Annual Meeting of the Academy of Management, San Antonio.

Buch, R., Kuvaas, B., Shore, L. & Dysvik, A. 2014. Once Bitten, Twice Shy? Past Breach and Present Exchange Relationships. ***Journal of Managerial Psychology***, 29(8): 938-952.

Buchan, N. R., Croson, R. T. & Dawes, R. M. 2002. Swift Neighbors and Persistent Strangers: A Cross‐Cultural Investigation of Trust and Reciprocity in Social Exchange1. ***American Journal of Sociology***, 108(1): 168-206.

Buhrmester, M., Kwang, T. & Gosling, S. D. 2011. Amazon's Mechanical Turk: A New Source of Inexpensive, yet High-Quality, Data? ***Perspectives on Psychological Science***, 6(1): 3-5.

Bunderson, J. S. & Reagans, R. E. 2011. Power, Status, and Learning in Organizations. ***Organization Science***, 22(5): 1182-1194.

Burkhardt, M. E. 1994. Social-Interaction Effects Following a Technological-Change - a Longitudinal Investigation. ***Academy of Management Journal***, 37(4): 869-898.

Burns, T. E. & Stalker, G. M. 1961. The Management of Innovation.

Byrne, B. M., Shavelson, R. J. & Muthén, B. 1989. Testing for the Equivalence of Factor Covariance and Mean Structures: The Issue of Partial Measurement Invariance. ***Psychological bulletin***, 105(3): 456.

Campbell, J. P., Mccloy, R. A., Oppler, S. H. & Sager, C. E. 1993. A Theory of Performance. In N. Schmitt & W. C. Borman (Eds.), ***Personnel Selection in Organizations***, vol. 3570: 35-70. CA: Jossey-Bass.

Campbell, J. P. & Wiernik, B. M. 2015. The Modeling and Assessment of Work Performance. ***Annu. Rev. Organ. Psychol. Organ. Behav.***, 2(1): 47-74.

Campbell, J. W., Lee, H. & Im, T. 2016. At the Expense of Others: Altruistic Helping Behaviour, Performance Management and Transformational Leadership. ***Public Management Review***, 18(6): 795-818.

Cappelli, P. 2000. A Market-Driven Approach to Retaining Talent. ***Harvard business review***, 78(1): 103-111.

Carlson, D. S. & Kacmar, K. M. 2000. Work-Family Conflict in the Organization: Do Life Role Values Make a Difference? ***Journal of Management***, 26(5): 1031-1054.

Carter, N. T. & Highhouse, S. 2013. You Will Be Known by the Company You Keep: Understanding the Social-Identity Concerns of Job Seekers.

Carton, A. M., Murphy, C. & Clark, J. R. 2014. A (Blurry) Vision of the Future: How Leader Rhetoric About Ultimate Goals Influences Performance. ***Academy of Management Journal***, 57(6): 1544-1570.

Caspi, A., Roberts, B. W. & Shiner, R. L. 2005. Personality Development: Stability and Change. ***Annu. Rev. Psychol.***, 56: 453-484.

Chan, D. 1998. The Conceptualization and Analysis of Change over Time: An Integrative Approach Incorporating Longitudinal Mean and Covariance Structures Analysis (Lmacs) and Multiple Indicator Latent Growth Modeling (Mlgm). ***Organizational Research Methods***, 1(4): 421-483.

Chan, D. K. S., Gelfand, M. J., Triandis, H. C. & Tzeng, O. 1996. Tightness-Looseness Revisited: Some Preliminary Analyses in Japan and the United States. ***International Journal of Psychology***, 31(5): 1.

Chatman, J. A. & Flynn, F. J. 2001. The Influence of Demographic Heterogeneity on the Emergence and Consequences of Cooperative Norms in Work Teams. ***Academy of Management Journal***, 44(5): 956-974.

Chen, F. F., Sousa, K. H. & West, S. G. 2005. Teacher's Corner: Testing Measurement Invariance of Second-Order Factor Models. ***Structural equation modeling***, 12(3): 471-492.

Chen, S., Boucher, H. C. & Tapias, M. P. 2006. The Relational Self Revealed: Integrative Conceptualization and Implications for Interpersonal Life. ***Psychological bulletin***, 132(2): 151.

Chen, T.-J., Chen, H. & Ku, Y.-H. 2012. Resource Dependency and Parent–Subsidiary Capability Transfers. ***Journal of World Business***, 47(2): 259-266.

Chenevert, D., Vandenberghe, C. & Tremblay, M. 2015. Multiple Sources of Support, Affective Commitment, and Citizenship Behaviors the Moderating Role of Passive Leadership. ***Personnel Review***, 44(1): 69-90.

Cheung, G. W. & Rensvold, R. B. 2002. Evaluating Goodness-of-Fit Indexes for Testing Measurement Invariance. ***Structural equation modeling***, 9(2): 233-255.

Chiaburu, D. S., Oh, I. S., Berry, C. M., Li, N. & Gardner, R. G. 2011. The Five-Factor Model of Personality Traits and Organizational Citizenship Behaviors: A Meta-Analysis. ***Journal of Applied Psychology***, 96(6): 1140-1166.

Cohen, S. G. & Bailey, D. E. 1997. What Makes Teams Work: Group Effectiveness Research from the Shop Floor to the Executive Suite. ***Journal of management***, 23(3): 239-290.

Cohen, W. M. & Levinthal, D. A. 1990. Absorptive Capacity: A New Perspective on Learning and Innovation. ***Administrative science quarterly***: 128-152.

Cole, D. A. & Maxwell, S. E. 2003. Testing Mediational Models with Longitudinal Data: Questions and Tips in the Use of Structural Equation Modeling. ***Journal of abnormal psychology***, 112(4): 558.

Colquitt, J. A. & Zapata-Phelan, C. P. 2007. Trends in Theory Building and Theory Testing: A Five-Decade Study of the Academy of Management Journal. ***Academy of Management Journal***, 50(6): 1281-1303.

Colquitt, J. A., Baer, M. D., Long, D. M. & Halvorsen-Ganepola, M. D. K. 2014. Scale Indicators of Social Exchange Relationships: A Comparison of Relative Content Validity. ***Journal of Applied Psychology***, 99(4): 599-618.

Connelly, C. E., Zweig, D., Webster, J. & Trougakos, J. P. 2012. Knowledge Hiding in Organizations. ***Journal of Organizational Behavior***, 33(1): 64-88.

Conroy, K. M. & Collings, D. G. 2016. The Legitimacy of Subsidiary Issue Selling: Balancing Positive & Negative Attention from Corporate Headquarters. ***Journal of World Business***, 51(4): 612-627.

Conway, N. & Briner, R. B. 2005. ***Understanding Psychological Contracts at Work: A Critical Evaluation of Theory and Research***: Oxford University Press.

Conway, N. & Coyle-Shapiro, J. a. M. 2012. The Reciprocal Relationship between Psychological Contract Fulfilment and Employee Performance and the Moderating

Role of Perceived Organizational Support and Tenure. ***Journal of Occupational and Organizational Psychology***, 85(2): 277-299.

Cook, K. S. & Emerson, R. M. 1978. Power, Equity and Commitment in Exchange Networks. ***American Sociological Review***, 43(5): 721-739.

Cook, K. S., Emerson, R. M., Gillmore, M. R. & Yamagishi, T. 1983. The Distribution of Power in Exchange Networks - Theory and Experimental Results. ***American Journal of Sociology***, 89(2): 275-305.

Cooper, D. & Thatcher, S. M. 2010. Identification in Organizations: The Role of Self-Concept Orientations and Identification Motives. ***Academy of Management Review***, 35(4): 516-538.

Cooper ‐ Thomas, H. D. & Anderson, N. 2005. Organizational Socialization: A Field Study into Socialization Success and Rate. ***International journal of selection and assessment***, 13(2): 116-128.

Cosslett, S. R. 1981. Maximum Likelihood Estimator for Choice-Based Samples. ***Econometrica: Journal of the Econometric Society***: 1289-1316.

Costa Jr, P. T. & Mccrae, R. R. 1994. Set Like Plaster? Evidence for the Stability of Adult Personality.

Costa, P. T. & Mccrae., R. R. 1992. ***Revised Neo Personality Inventory (Neo-P–Ir) and Neo Five-Factor Inventory (Neo-Ffi): Professional Manual***. Lutz, FL: Psychological Assessment Resources.

Cotterell, N., Eisenberger, R. & Speicher, H. 1992. Inhibiting Effects of Reciprocation Wariness on Interpersonal Relationships. ***Journal of Personality and Social Psychology***, 62(4): 658-668.

Courtright, S. H., Thurgood, G. R., Stewart, G. L. & Pierotti, A. J. 2015. Structural Interdependence in Teams: An Integrative Framework and Meta-Analysis. ***Journal of Applied Psychology***, 100(6): 1825.

Coyle-Shapiro, J. a. M. 2002. A Psychological Contract Perspective on Organizational Citizenship Behavior. ***Journal of Organizational Behavior***, 23(8): 927-946.

Coyle-Shapiro, J. a. M. & Neuman, J. H. 2004. The Psychological Contract and Individual Differences: The Role of Exchange and Creditor Ideologies. ***Journal of Vocational Behavior***, 64(1): 150-164.

Coyle-Shapiro, J. a. M. & Shore, L. M. 2007. The Employee–Organization Relationship: Where Do We Go from Here? ***Human Resource Management Review***, 17(2): 166-179.

Coyle‐Shapiro, J. a. M., Kessler, I. & Purcell, J. 2004. Exploring Organizationally Directed Citizenship Behaviour: Reciprocity or 'It's My Job'? ***Journal of management studies***, 41(1): 85-106.

Cramton, C. D. 2001. The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration. ***Organization science***, 12(3): 346-371.

Credé, M. & Harms, P. D. 2015. 25 Years of Higher‐Order Confirmatory Factor Analysis in the Organizational Sciences: A Critical Review and Development of Reporting Recommendations. ***Journal of Organizational Behavior***, 36(6): 845-872.

Cronbach, L. J. 1951. Coefficient Alpha and the Internal Structure of Tests. ***psychometrika***, 16(3): 297-334.

Cronbach, L. J. & Meehl, P. E. 1955. Construct Validity in Psychological Tests. ***Psychological bulletin***, 52(4): 281.

Cronbach, L. J. 1960. ***Essentials of Psychological Testing. 2nd Edition***. New York: Harper and Row.

Cropanzano, R. & Mitchell, M. S. 2005. Social Exchange Theory: An Interdisciplinary Review. ***Journal of Management***, 31(6): 874-900.

Cross, R. & Cummings, J. N. 2004. Tie and Network Correlates of Individual Performance in Knowledge-Intensive Work. ***Academy of management journal***, 47(6): 928-937.

Cross, R. & Parker, A. 2004. ***The Hidden Power of Social Networks: Understanding How Really Work Gets Done in Organizations***. Boston: Harvard Business School Press.

Cross, S. E. & Madson, L. 1997. Models of the Self: Self-Construals and Gender. ***Psychological Bulletin***, 122(1): 5-37.

Davis, M. H., Conklin, L., Smith, A. & Luce, C. 1996. Effect of Perspective Taking on the Cognitive Representation of Persons: A Merging of Self and Other. ***Journal of Personality and Social Psychology***, 70(4): 713-726.

De Dreu, C. K. W. 2007. Cooperative Outcome Interdependence, Task Reflexivity, and Team Effectiveness: A Motivated Information Processing Perspective. ***Journal of Applied Psychology***, 92(3): 628-638.

De Waal, F. B. 2008. Putting the Altruism Back into Altruism: The Evolution of Empathy. ***Annual Review of Psychology.***, 59: 279-300.

Deckop, J. R., Cirka, C. C. & Andersson, L. M. 2003. Doing Unto Others: The Reciprocity of Helping Behavior in Organizations. ***Journal of Business Ethics***, 47(2): 101-113.

Dennis, A. R., Fuller, R. M. & Valacich, J. S. 2008. Media, Tasks, and Communication Processes: A Theory of Media Synchronicity. ***MIS quarterly***, 32(3): 575-600.

Desai, S. D., Chugh, D. & Brief, A. P. 2014. The Implications of Marriage Structure for Men's Workplace Attitudes, Beliefs, and Behaviors toward Women. ***Administrative Science Quarterly***, 59(2): 330-365.

Desanctis, G. & Monge, P. 1998. Communication Processes for Virtual Organizations. ***Journal of Computer‐Mediated Communication***, 3(4): 0-0.

Devellis, R. F. 2011. ***Scale Development: Theory and Applications***: Sage Publications.

Digman, J. M. 1997. Higher-Order Factors of the Big Five. ***Journal of personality and social psychology***, 73(6): 1246.

Disanza, J. R. & Bullis, C. 1999. "Everybody Identitiefies with Smokey the Bear" Employee Responses to Newsletter Identification Inducements at the Us Forest Service. ***Management Communication Quarterly***, 12(3): 347-399.

Dow, D. & Karunaratna, A. 2006. Developing a Multidimensional Instrument to Measure Psychic Distance Stimuli. ***Journal of International Business Studies***, 37(5): 578-602.

Dulebohn, J. H., Bommer, W. H., Liden, R. C., Brouer, R. L. & Ferris, G. R. 2012. A Meta-Analysis of Antecedents and Consequences of Leader-Member Exchange: Integrating the Past with an Eye toward the Future. ***Journal of Management***, 38(6): 1715-1759.

Dutton, J. E., Dukerich, J. M. & Harquail, C. V. 1994. Organizational Images and Member Identification. ***Administrative Science Quarterly***, 39(2): 239-263.

Eisenberger, R., Huntington, R., Hutchison, S. & Sowa, D. 1986. Perceived Organizational Support. ***Journal of Applied Psychology***, 71(3): 500-507.

Eisenberger, R., Cotterell, N. & Marvel, J. 1987. Reciprocation Ideology. ***Journal of Personality and Social Psychology***, 53(4): 743-750.

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P. D. & Rhoades, L. 2001. Reciprocation of Perceived Organizational Support. ***Journal of applied psychology***, 86(1): 42.

Eisenberger, R., Lynch, P. D., Aselage, J. & Rohdieck, S. 2004. Who Takes the Most Revenge? Individual Differences in Negative Reciprocity Norm Endorsement. ***Personality and Social Psychology Bulletin***, 30(6): 787-799.

Eisenberger, R., Shoss, M. K., Karagonlar, G., Gonzalez-Morales, M. G., Wickham, R. E. & Buffardi, L. C. 2014. The Supervisor Pos-Lmx-Subordinate Pos Chain: Moderation by Reciprocation Wariness and Supervisor's Organizational Embodiment. ***Journal of Organizational Behavior***, 35(5): 635-656.

Ekeh, P. 1974. ***Social Exchange Theory : The Two Traditions.*** London, UK.: Heinemann Educational.

Emerson, R. M. 1972a. Exchange Theory, Part Ii: Exchange Relations and Networks. ***Sociological theories in progress***, 2: 58-87.

Emerson, R. M. 1972b. Exchange Theory, Part I: A Psychological Basis for Social Exchange. ***Sociological theories in progress***, 2: 38-57.

Emerson, R. M. 1976. Social-Exchange Theory. ***Annual Review of Sociology***, 2: 335-362.

Emerson, R. M. 1981. Social Exchange Theory. In M. Rosenberg & R. Turner (Eds.), ***Psychology: Sociological Perspectives***: 30-65. New York: Basic Books.

Erdogan, B. & Liden, R. C. 2002. Social Exchanges in the Workplace: A Review of Recent Developments and Future Research Directions in Leader-Member Exchange Theory. In L. L. Neider & C. A. Schriesheim (Eds.), ***Leadership***: 65-114. Greenwich, CT: Information Age.

Evans, J. M., Hendron, M. G. & Oldroyd, J. B. 2014. Withholding the Ace: The Individual- and Unit-Level Performance Effects of Self-Reported and Perceived Knowledge Hoarding. ***Organization Science***, 26(2): 494-510.

Evans, W. R. & Davis, W. D. 2005. High-Performance Work Systems and Organizational Performance: The Mediating Role of Internal Social Structure. ***Journal of management***, 31(5): 758-775.

Faraj, S., Wasko, M. M. & Johnson, S. L. 2008. Electronic Knowledge Networks Processes and Structure. ***Knowledge Management: An Evolutionary Review***, 12: 270-291.

Faraj, S., Jarvenpaa, S. L. & Majchrzak, A. 2011. Knowledge Collaboration in Online Communities. ***Organization science***, 22(5): 1224-1239.

Faraj, S. & Johnson, S. L. 2011. Network Exchange Patterns in Online Communities. ***Organization Science***, 22(6): 1464-1480.

Fei, X. 1992. ***From the Soil: The Foundations of Chinese Society.*** CA: University of California Press.

Feldman, D. C. 1994. Who's Socializing Whom? The Impact of Socializing Newcomers on Insiders, Work Groups, and Organizations. ***Human Resource Management Review***, 4(3): 213-233.

Festinger, L. 1957. ***The Theory of Cognitive Dissonance***. CA: Stanford University Press.

Fine, G. A. & Holyfield, L. 1996. Secrecy, Trust, and Dangerous Leisure: Generating Group Cohesion in Voluntary Organizations. ***Social psychology quarterly***: 22-38.

Finkel, S. E. 1995. ***Causal Analysis with Panel Data***: Sage.

Fishbein, M. & Ajzen, I. 1974. Attitudes Towards Objects as Predictors of Single and Multiple Behavioral Criteria. ***Psychological review***, 81(1): 59.

Flynn, F. J. 2005. Identity Orientations and Forms of Social Exchange in Organizations. ***Academy of Management Review***, 30(4): 737-750.

Foa, E. B. & Foa, U. G. 1980. Resource Theory, ***Social Exchange***: 77-94: Springer.

Foa, U. G. & Foa, E. B. 1974. ***Societal Structures of the Mind***: Charles C Thomas.

Foss, N. J., Husted, K. & Michailova, S. 2010. Governing Knowledge Sharing in Organizations: Levels of Analysis, Governance Mechanisms, and Research Directions. ***Journal of Management studies***, 47(3): 455-482.

Fraley, R. C. 2007. A Connectionist Approach to the Organization and Continuity of Working Models of Attachment. ***Journal of Personality***, 75(6): 1157-1180.

Freeman, R. E. 2010. ***Strategic Management: A Stakeholder Approach***: Cambridge University Press.

Frese, M., Kring, W., Soose, A. & Zempel, J. 1996. Personal Initiative at Work: Differences between East and West Germany. ***Academy of Management Journal***, 39(1): 37-63.

Frese, M. & Fay, D. 2001. 4. Personal Initiative: An Active Performance Concept for Work in the 21st Century. ***Research in organizational behavior***, 23: 133-187.

Friedman, T. L. 2006. ***The World Is Flat: A Brief History of the Twenty-First Century***: Farrar, Straus & Giroux.

Fuller, B. & Marler, L. E. 2009. Change Driven by Nature: A Meta-Analytic Review of the Proactive Personality Literature. ***Journal of Vocational Behavior***, 75(3): 329-345.

Fussell, S. R. & Krauss, R. M. 1989. The Effects of Intended Audience on Message Production and Comprehension: Reference in a Common Ground Framework. ***Journal of Experimental Social Psychology***, 25(3): 203-219.

Gal, U., Jensen, T. B. & Lyytinen, K. 2014. Identity Orientation, Social Exchange, and Information Technology Use in Interorganizational Collaborations. ***Organization Science***, 25(5): 1372-1390.

Gallucci, M. & Perugini, M. 2003. Information Seeking and Reciprocity: A Transformational Analysis. ***European Journal of Social Psychology***, 33(4): 473-495.

Gelfand, M. J., Nishii, L. H. & Raver, J. L. 2006. On the Nature and Importance of Cultural Tightness-Looseness. ***Journal of Applied Psychology***, 91(6): 1225-1244.

George, J. M. & Brief, A. P. 1992. Feeling Good-Doing Good: A Conceptual Analysis of the Mood at Work-Organizational Spontaneity Relationship. ***Psychological bulletin***, 112(2): 310.

Ghemawat, P. 2007. ***Redefining Global Strategy: Crossing Borders in a World Where Differences Still Matter***. Boston, MA: Harvard Business Press.

Gibney, R., Zagenczyk, T. J. & Masters, M. F. 2009. The Negative Aspects of Social Exchange: An Introduction to Perceived Organizational Obstruction: SAGE Publications Sage CA: Los Angeles, CA.

Glick, W. H., Jenkins, G. D. & Gupta, N. 1986. Method Versus Substance: How Strong Are Underlying Relationships between Job Characteristics and Attitudinal Outcomes? ***Academy of Management Journal***, 29(3): 441-464.

Goldberg, L. R. 1990. An Alternative" Description of Personality": The Big-Five Factor Structure. ***Journal of personality and social psychology***, 59(6): 1216.

Golden, T. D. & Raghuram, S. 2010. Teleworker Knowledge Sharing and the Role of Altered Relational and Technological Interactions. ***Journal of Organizational Behavior***, 31(8): 1061-1085.

Gong, Y., Cheung, S.-Y., Wang, M. & Huang, J.-C. 2012. Unfolding the Proactive Process for Creativity. ***Journal of Management***, 38(5): 1611-1633.

Gong, Y., Kim, T.-Y., Lee, D.-R. & Zhu, J. 2013. A Multilevel Model of Team Goal Orientation, Information Exchange, and Creativity. ***Academy of Management Journal***, 56(3): 827-851.

Gouldner, A. W. 1960. The Norm of Reciprocity - a Preliminary Statement. ***American Sociological Review***, 25(2): 161-178.

Govindarajan, V. & Trimble, C. 2012. ***Reverse Innovation: Create Far from Home, Win Everywhere***. MA: Harvard Business Press.

Graen, G. B. & Scandura, T. A. 1987. Toward a Psychology of Dyadic Organizing. ***Research in Organizational Behavior***, 9: 175-208.

Granovetter, M. 1973. The Strength of Weak Ties. ***American journal of sociology***, 78(6): l.

Granovetter, M. 2010. 19 Business Groups and Social Organization. ***The handbook of economic sociology***: 429.

Grant, A. 2013. ***Give and Take: A Revolutionary Approach to Success***: Hachette UK.

Grant, R. M. 1996. Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration. ***Organization Science***, 7(4): 375-387.

Griffin, M. A., Neal, A. & Parker, S. K. 2007. A New Model of Work Role Performance: Positive Behavior in Uncertain and Interdependent Contexts. ***Academy of Management Journal***, 50(2): 327-347.

Gruenfeld, D. H., Mannix, E. A., Williams, K. Y. & Neale, M. A. 1996. Group Composition and Decision Making: How Member Familiarity and Information Distribution Affect Process and Performance. ***Organizational behavior and human decision processes***, 67(1): 1-15.

Hackman, J. R. & Lawler, E. E. 1971. Employee Reactions to Job Characteristics. ***Journal of applied psychology***, 55(3): 259.

Hackman, J. R. & Oldham, G. R. 1976. Motivation through the Design of Work: Test of a Theory. ***Organizational behavior and human performance***, 16(2): 250-279.

Halbesleben, J. R. & Wheeler, A. R. 2015. To Invest or Not? The Role of Coworker Support and Trust in Daily Reciprocal Gain Spirals of Helping Behavior. ***Journal of Management***, 41(6): 1628-1650.

Hall, P. A. & Soskice, D. 2001. ***Varieties of Capitalism: The Institutional Foundations of Comparative Advantage***. Oxford: Oxford University Press.

Hambrick, D. C. & Mason, P. A. 1984. Upper Echelons - the Organization as a Reflection of Its Top Managers. ***Academy of Management Review***, 9(2): 193-206.

Hansen, M. T. 2002. Knowledge Networks: Explaining Effective Knowledge Sharing in Multiunit Companies. ***Organization science***, 13(3): 232-248.

Hansen, M. T. & Nohria, N. 2004. How to Build Collaborative Advantage. ***MIT Sloan Management Review***, 46(1): 22.

Hargadon, A. & Sutton, R. I. 1997. Technology Brokering and Innovation in a Product Development Firm. ***Administrative science quarterly***: 716-749.

Helm, B., Bonoma, T. V. & Tedeschi, J. T. 1972. Reciprocity for Harm Done. ***The Journal of social psychology***, 87(1): 89-98.

Higgins, E. T., King, G. A. & Mavin, G. H. 1982. Individual Construct Accessibility and Subjective Impressions and Recall. ***Journal of Personality and Social Psychology***, 43(1): 35.

Higgins, E. T. 1989. Knowledge Accessibility and Activation: Subjectivity and Suffering from Unconscious Sources. ***Unintended thought***, 3: 75-123.

Higgins, E. T. & Brendl, C. M. 1995. Accessibility and Applicability: Some" Activation Rules" Influencing Judgment. ***Journal of Experimental Social Psychology***, 31(3): 218-243.

Hinds, P., Liu, L. & Lyon, J. 2011. Putting the Global in Global Work: An Intercultural Lens on the Practice of Cross-National Collaboration. ***Academy of Management Annals***, 5(1): 135-188.

Hinkin, T. R. 1995. A Review of Scale Development Practices in the Study of Organizations. ***Journal of management***, 21(5): 967-988.

Hinkin, T. R. 1998. A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires. ***Organizational research methods***, 1(1): 104-121.

Hinkin, T. R. & Tracey, J. B. 1999. An Analysis of Variance Approach to Content Validation. ***Organizational Research Methods***, 2(2): 175-186.

Hislop, D. 2002. Mission Impossible? Communicating and Sharing Knowledge Via Information Technology. ***Journal of Information Technology***, 17(3): 165-177.

Hofstede, G., Hofstede, G. J. & Minkov, M. 2010. ***Cultures and Organizations, Software of the Mind. Intercultural Cooperation and Its Importance for Survival***. New York, NY: McGrowHill.

Hogan, J. & Holland, B. 2003. Using Theory to Evaluate Personality and Job-Performance Relations: A Socioanalytic Perspective. ***Journal of Applied Psychology***, 88(1): 100.

Hogan, R. 1996. A Socioanalytic Perspective. ***The five-factor model of personality: Theoretical perspectives***: 163.

Hogg, M. A. & Turner, J. C. 1985. Interpersonal Attraction, Social Identification and Psychological Group Formation. ***European Journal of Social Psychology***, 15(1): 51-66.

Holland, P. W. 1986. Statistics and Causal Inference. ***Journal of the American statistical Association***, 81(396): 945-960.

Homans, G. C. 1958. Social Behavior as Exchange. ***American journal of sociology***: 597-606.

Homans, G. C. 1961. ***Social Behavior: Its Elementary Forms.***: Routledge & Kegan Paul.

House, R., Rousseau, D. M. & Thomas-Hunt, M. 1995. The Meso Paradigm-a Framework for the Integration of Micro and Macro Organizational-Behavior. ***Research in Organizational Behavior: an Annual Series of Analytical Essays and Critical Reviews, Vol 17, 1995***, 17: 71-114.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W. & Gupta, V. 2004. ***Culture, Leadership, and Organizations***. Thosand Oaks, CA: Sage publications.

Howard, A. E. 1995. ***The Changing Nature of Work***: Jossey-Bass.

Hu, L.-T. & Bentler, P. M. 1998. Fit Indices in Covariance Structure Modeling: Sensitivity to Underparameterized Model Misspecification. ***Psychological methods***, 3(4): 424.

Huang, X., Hsieh, J. & He, W. 2014. Expertise Dissimilarity and Creativity: The Contingent Roles of Tacit and Explicit Knowledge Sharing. ***Journal of applied psychology***, 99(5): 816.

Hultin, M. & Szulkin, R. 1999. Wages and Unequal Access to Organizational Power: An Empirical Test of Gender Discrimination. ***Administrative Science Quarterly***, 44(3): 453-472.

Hwang, E. H., Singh, P. V. & Argote, L. 2015. Knowledge Sharing in Online Communities: Learning to Cross Geographic and Hierarchical Boundaries. ***Organization Science***, 26(6): 1593-1611.

Ibarra, H. 1992. Homophily and Differential Returns - Sex-Differences in Network Structure and Access in an Advertising Firm. ***Administrative Science Quarterly***, 37(3): 422-447.

Ilgen, D. R. & Pulakos, E. D. 1999. ***The Changing Nature of Performance: Implications for Staffing, Motivation, and Development. Frontiers of Industrial and Organizational Psychology***: ERIC.

Ilies, R., Scott, B. A. & Judge, T. A. 2006. The Interactive Effects of Personal Traits and Experienced States on Intraindividual Patterns of Citizenship Behavior. ***Academy of Management Journal***, 49(3): 561-575.

Imbens, G. W. 1992. An Efficient Method of Moments Estimator for Discrete Choice Models with Choice-Based Sampling. ***Econometrica: Journal of the Econometric Society***: 1187-1214.

Imbens, G. W. & Lancaster, T. 1996. Efficient Estimation and Stratified Sampling. ***Journal of Econometrics***, 74(2): 289-318.

Inaba, M. & Takahashi, N. 2012. Comparison of the Effects of Exchange Forms on Social Solidarity. ***Shinrigaku kenkyu : The Japanese journal of psychology***, 83(1): 27-34.

Ipeirotis, P. G. 2010a. Demographics of Mechanical Turk, ***NYU Center for Digital Economy Research Working Paper CeDER-10-01***. New York: New York University.

Ipeirotis, P. G. 2010b. Analyzing the Amazon Mechanical Turk Marketplace. ***XRDS***, 17(2): 16-21.

Jehn, K. A. 1995. A Multimethod Examination of the Benefits and Detriments of Intragroup Conflict. ***Administrative science quarterly***: 256-282.

Jensen, M. 2003. The Role of Network Resources in Market Entry: Commercial Banks' Entry into Investment Banking, 1991–1997. ***Administrative Science Quarterly***, 48(3): 466-497.

Johansson, L.-O. & Svedsäter, H. 2009. Piece of Cake? Allocating Rewards to Third Parties When Fairness Is Costly. ***Organizational Behavior and Human Decision Processes***, 109(2): 107-119.

Johnson, J. V. & Hall, E. M. 1988. Job Strain, Work Place Social Support, and Cardiovascular Disease: A Cross-Sectional Study of a Random Sample of the Swedish Working Population. ***American journal of public health***, 78(10): 1336-1342.

Jones, C., Hesterly, W. S. & Borgatti, S. P. 1997. A General Theory of Network Governance: Exchange Conditions and Social Mechanisms. ***Academy of Management Review***, 22(4): 911-945.

Jones, D. N. & Paulhus, D. L. 2011. Differentiating the Dark Triad within the Interpersonal Circumplex. ***Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions***: 249-269.

Jones, D. N. & Paulhus, D. L. 2014. Introducing the Short Dark Triad (Sd3): A Brief Measure of Dark Personality Traits. ***Assessment***, 21(1): 28-41.

Jones, G. R. 1986. Socialization Tactics, Self-Efficacy, and Newcomers Adjustments to Organizations. ***Academy of Management Journal***, 29(2): 262-279.

Judge, T. A., Locke, E. A. & Durham, C. C. 1997. The Dispositional Causes of Job Satisfaction: A Core Evaluations Approach. ***RESEARCH IN ORGANIZATIONAL BEHAVIOR, VOL 19, 1997***, 19: 151-188.

Judge, T. A., Bono, J. E. & Locke, E. A. 2000. Personality and Job Satisfaction: The Mediating Role of Job Characteristics. ***Journal of applied psychology***, 85(2): 237.

Judge, T. A., Thoresen, C. J., Bono, J. E. & Patton, G. K. 2001. The Job Satisfaction-Job Performance Relationship: A Qualitative and Quantitative Review. ***Psychological Bulletin***, 127(3): 376-407.

Judge, T. A. & Kammeyer-Mueller, J. D. 2012. Job Attitudes. In S. T. Fiske, D. L. Schacter & S. E. Taylor (Eds.), ***Annual Review of Psychology, Vol 63***, vol. 63: 341-367.

Kahneman, D., Knetsch, J. L. & Thaler, R. H. 1986. Fairness and the Assumptions of Economics. ***Journal of business***: S285-S300.

Kamdar, D., Mcallister, D. J. & Turban, D. B. 2006. "All in a Day's Work": How Follower Individual Differences and Justice Perceptions Predict Ocb Role Definitions and Behavior. ***Journal of Applied Psychology***, 91(4): 841-855.

Kane, G. C. 2009. It's a Network, Not an Encyclopedia: A Social Network Perspective on Wikipedia Collaboration, ***Academy of Management Proceedings***, vol. 2009: 1-6: Academy of Management.

Karasek, R., Brisson, C., Kawakami, N., Houtman, I., Bongers, P. & Amick, B. 1998. The Job Content Questionnaire (Jcq): An Instrument for Internationally Comparative Assessments of Psychosocial Job Characteristics. ***Journal of occupational health psychology***, 3(4): 322.

Kashima, E. S. & Hardie, E. A. 2000. The Development and Validation of the Relational, Individual, and Collective Self-Aspects (Ric) Scale. ***Asian Journal of Social Psychology***, 3(1).

Katz, D. & Kahn, R. L. 1978. ***The Social Psychology of Organizations***: Wiley New York.

Kelley, T. L. 1927. Interpretation of Educational Measurements.

Kelloway, E. K. & Barling, J. 2000. Knowledge Work as Organizational Behavior. ***International journal of management reviews***, 2(3): 287-304.

Khanna, T., Palepu, K. G. & Sinha, J. 2005. Strategies That Fit Emerging Markets. ***Harvard Business Review***, 83(6): 63-76.

Kiesler, S., Siegel, J. & Mcguire, T. W. 1984. Social Psychological Aspects of Computer-Mediated Communication. ***American psychologist***, 39(10): 1123.

Kiggundu, M. N. 1981. Task Interdependence and the Theory of Job Design. ***Academy of management Review***, 6(3): 499-508.

King, G. & Zeng, L. 2001. Logistic Regression in Rare Events Data. ***Political analysis***, 9(2): 137-163.

Kirchmeyer, C. 2002. Change and Stability in Managers' Gender Roles. ***Journal of Applied Psychology***, 87(5): 929-939.

Kirkman, B. L., Rosen, B., Tesluk, P. E. & Gibson, C. B. 2004. The Impact of Team Empowerment on Virtual Team Performance: The Moderating Role of Face-to-Face Interaction. ***Academy of Management Journal***, 47(2): 175-192.

Knight, G., Cavusgil, S. T. & Innovation, O. C. 2004. The Born-Global Firm. ***Journal of International Business Studies***, 35(2): 124-141.

Kohn, M. L. & Schooler, C. 1982. Job Conditions and Personality: A Longitudinal Assessment of Their Reciprocal Effects. ***American journal of Sociology***, 87(6): 1257-1286.

Kolm, S.-C. & Ythier, J. M. 2006. ***Handbook of the Economics of Giving, Altruism and Reciprocity: Foundations***: Elsevier.

Konovsky, M. A. & Pugh, S. D. 1994. Citizenship Behaviour and Social-Exchange. ***Academy of Management Journal***, 37(3): 656-669.

Kramer, M. R. & Porter, M. 2011. Creating Shared Value. ***Harvard business review***, 89(1/2): 62-77.

Kramer, R. M. 1999. Trust and Distrust in Organizations: Emerging Perspectives, Enduring Questions. ***Annual Review of Psychology***, 50(1): 569.

Krauss, R. M. & Fussell, S. R. 1990. Mutual Knowledge and Communicative Effectiveness. ***Intellectual teamwork: Social and technological foundations of cooperative work***: 111-146.

Kuvaas, B. & Dysvik, A. 2009. Perceived Investment in Permanent Employee Development and Social and Economic Exchange Perceptions among Temporary Employees. ***Journal of Applied Social Psychology***, 39(10): 2499-2524.

Kuvaas, B. & Buch, R. 2016. ***Leader Self-Efficacy and Role Ambiguity and Follower Leader-Member Exchange***. Paper presented at the 76th Annual Meeting of the Academy of Management, Anaheim.

La Guardia, J. G., Ryan, R. M., Couchman, C. E. & Deci, E. L. 2000. Within-Person Variation in Security of Attachment: A Self-Determination Theory Perspective on Attachment, Need Fulfillment, and Well-Being. ***Journal of personality and social psychology***, 79(3): 367.

Ladd, D. & Henry, R. A. 2000. Helping Coworkers and Helping the Organization: The Role of Support Perceptions, Exchange Ideology, and Conscientiousness1. ***Journal of Applied Social Psychology***, 30(10): 2028-2049.

Ladebo, O. J. 2006. Perceptions of Trust and Employees' Attitudes: A Look at Nigeria's Agricultural Extension Workers. ***Journal of Business and Psychology***, 20(3): 409-427.

Lakhani, K. R. & Von Hippel, E. 2003. How Open Source Software Works:“Free” User-to-User Assistance. ***Research policy***, 32(6): 923-943.

Lam, A. 1997. Embedded Firms, Embedded Knowledge: Problems of Collaboration and Knowledge Transfer in Global Cooperative Ventures. ***Organization Studies***, 18(6): 973-996.

Lawler, E. J. 2001. An Affect Theory of Social Exchange. ***American Journal of Sociology***, 107(2): 321-352.

Leana, C. R. & Van Buren, H. J. 1999. Organizational Social Capital and Employment Practices. ***Academy of Management Review***, 24(3): 538-555.

Lecompte, M. D. & Goetz, J. P. 1982. Problems of Reliability and Validity in Ethnographic Research. ***Review of educational research***, 52(1): 31-60.

Lee, H. J. 2015. Cosmopolitanism: Wiley Encycropedia of Management.

Lee, K., Kim, E., Bhave, D. P. & Duffy, M. K. 2016. Why Victims of Undermining at Work Become Perpetrators of Undermining: An Integrative Model. ***Journal of Applied Psychology***, 101(6): 915-924.

Lévi-Strauss, C. 1949. ***The Elementary Forms of Kinship (English Translation Published in 1969)***. Boston, MA: Beacon Press.

Levine, M., Prosser, A., Evans, D. & Reicher, S. 2005. Identity and Emergency Intervention: How Social Group Membership and Inclusiveness of Group Boundaries Shape Helping Behavior. ***Personality and Social Psychology Bulletin***, 31(4): 443-453.

Levine, S. S. & Prietula, M. J. 2012. How Knowledge Transfer Impacts Performance: A Multilevel Model of Benefits and Liabilities. ***Organization Science***, 23(6): 1748-1766.

Lewis, J. D. & Weigert, A. 1985. Trust as a Social Reality. ***Social forces***, 63(4): 967-985.

Li, W.-D., Fay, D., Frese, M., Harms, P. D. & Gao, X. Y. 2014. Reciprocal Relationship between Proactive Personality and Work Characteristics: A Latent Change Score Approach. ***Journal of Applied Psychology***, 99(5): 948.

Liden, R. C. & Graen, G. 1980. Generalizability of the Vertical Dyad Linkage Model of Leadership. ***Academy of Management journal***, 23(3): 451-465.

Liden, R. C., Sparrowe, R. T. & Wayne, S. J. 1997. Leader-Member Exchange Theory: The Past and Potential for the Future. ***Research in personnel and human resources management***, 15: 47-120.

Lincoln, J. R. & Miller, J. 1979. Work and Friendship Ties in Organizations: A Comparative Analysis of Relation Networks. ***Administrative science quarterly***: 181-199.

Little, T. D. 2013. ***Longitudinal Structural Equasion Modeling***. New York, NY: The Guilford Press.

Litz, R. A. 1996. A Resource-Based-View of the Socially Responsible Firm: Stakeholder Interdependence, Ethical Awareness, and Issue Responsiveness as Strategic Assets. ***Journal of Business Ethics***, 15(12): 1355-1363.

Love, M. S. & Forret, M. 2008. Exchange Relationships at Work: An Examination of the Relationship between Team-Member Exchange and Supervisor Reports of Organizational Citizenship Behavior. ***Journal of Leadership & Organizational Studies***, 14(4): 342-352.

Luo, Y. 2005. Toward Coopetition within a Multinational Enterprise: A Perspective from Foreign Subsidiaries. ***Journal of World Business***, 40(1): 71-90.

Lynch, P. D., Eisenberger, R. & Armeli, S. 1999. Perceived Organizational Support: Inferior Versus Superior Performance by Wary Employees. ***Journal of Applied Psychology***, 84(4): 467-483.

Ma, M. & Agarwal, R. 2007. Through a Glass Darkly: Information Technology Design, Identity Verification, and Knowledge Contribution in Online Communities. ***Information systems research***, 18(1): 42-67.

Maak, T. & Pless, N. M. 2009. Business Leaders as Citizens of the World. Advancing Humanism on a Global Scale. ***Journal of Business Ethics***, 88(3): 537-550.

Maccallum, R. C. & Austin, J. T. 2000. Applications of Structural Equation Modeling in Psychological Research. ***Annual Review of Psychology***, 51(1): 201.

Mael, F. & Ashforth, B. E. 1992. Alumni and Their Alma-Mater - a Partial Test of the Reformulated Model of Organizational Identification. ***Journal of Organizational Behavior***, 13(2): 103-123.

Malinowski, B. 1922. ***Argonauts of the Western Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea***. London: Routledge.

Manpowergroup; 2016-2017 Talent Shortage Survey; http://manpowergroup.com/talent-shortage-2016.

Marks, M. A., Mathieu, J. E. & Zaccaro, S. J. 2001. A Temporally Based Framework and Taxonomy of Team Processes. ***Academy of management review***, 26(3): 356-376.

Markus, H. R. & Kitayama, S. 1991. Culture and the Self - Implications for Cognition, Emotion, and Motivation. ***Psychological Review***, 98(2): 224-253.

Marrone, J. A. 2010. Team Boundary Spanning: A Multilevel Review of Past Research and Proposals for the Future. ***Journal of Management***, 36(4): 911-940.

Marsden, D. 1999. ***A Theory of Employment Systems: Micro-Foundations of Societal Diversity***. Oxford, UK: Oxford University Press.

Marsden, P. V. 1988. Homogeneity in Confiding Relations. ***Social networks***, 10(1): 57-76.

Marsh, H. W., Hau, K.-T., Wen, Z., Nagengast, B. & Morin, A. J. 2013. Moderation. In T. D. Little (Ed.), ***The Oxford Handbook of Quantitative Methods in Psychology: Vol. 2: Statistical Analysis***. Oxford, UK: Oxford University Press.

Mason, W. & Suri, S. 2012. Conducting Behavioral Research on Amazon's Mechanical Turk. ***Behavior Research Methods***, 44(1): 1-23.

Masterson, S. S., Lewis, K., Goldman, B. M. & Taylor, M. S. 2000. Integrating Justice and Social Exchange: The Differing Effects of Fair Procedures and Treatment on Work Relationships. ***Academy of Management journal***, 43(4): 738-748.

Mayer, R. C., Davis, J. H. & Schoorman, F. D. 1995. An Integrative Model of Organizational Trust. ***Academy of Management Review***, 20(3): 709-734.

Mcafee, A. P. 2006. Enterprise 2.0: The Dawn of Emergent Collaboration. ***MIT Sloan management review***, 47(3): 21.

Mcallister, D. J. 1995. Affect-Based and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations. ***Academy of Management Journal***, 38(1): 24-59.

Mcclelland, G. H. & Judd, C. M. 1993. Statistical Difficulties of Detecting Interactions and Moderator Effects. ***Psychological bulletin***, 114(2): 376.

Mccullough, M. E., Kimeldorf, M. B. & Cohen, A. D. 2008. An Adaptation for Altruism: The Social Causes, Social Effects, and Social Evolution of Gratitude. ***Current directions in psychological science***, 17(4): 281-285.

Mckinsey & Company. 2013. Evolution of the Networked Enterprise: Mckinsey Global Survey Results. Report. New York.

Mcpherson, J. M. & Smith-Lovin, L. 1987. Homophily in Voluntary Organizations: Status Distance and the Composition of Face-to-Face Groups. ***American sociological review***: 370-379.

Mcpherson, M., Smith-Lovin, L. & Cook, J. M. 2001. Birds of a Feather: Homophily in Social Networks. ***Annual review of sociology***: 415-444.

Meyer, J. P. & Morin, A. J. 2016. A Person‐Centered Approach to Commitment Research: Theory, Research, and Methodology. ***Journal of Organizational Behavior***.

Miller, G. J. 1993. ***Managerial Dilemmas: The Political Economy of Hierarchy***: Cambridge University Press.

Millward, L. J. & Brewerton, P. M. 1999. Contractors and Their Psychological Contracts. ***British Journal of Management***, 10(3): 253-274.

Mintzberg, H. 1980. Structure in 5's: A Synthesis of the Research on Organization Design. ***Management science***, 26(3): 322-341.

Mischel, W. & Shoda, Y. 1995. A Cognitive-Affective System Theory of Personality: Reconceptualizing Situations, Dispositions, Dynamics, and Invariance in Personality Structure. ***Psychological review***, 102(2): 246.

Mitchell, M. S., Vogel, R. M. & Folger, R. 2015. Third Parties' Reactions to the Abusive Supervision of Coworkers. ***Journal of Applied Psychology***, 100(4): 1040-1055.

Mitchell, T. R. & James, L. R. 2001. Building Better Theory: Time and the Specification of When Things Happen. ***Academy of Management Review***, 26(4): 530-547.

Molm, L. D. 2000. Theories of Social Exchange and Exchange Networks. In R. G. & S. B. (Eds.), ***Handbook of Social Theory***: 260-272. CA: Thousand Oaks, Sage.

Molm, L. D., Takahashi, N. & Peterson, G. 2000. Risk and Trust in Social Exchange: An Experimental Test of a Classical Proposition. ***American Journal of Sociology***, 105(5): 1396-1427.

Molm, L. D. 2003. Theoretical Comparisons of Forms of Exchange. ***Sociological Theory***, 21(1): 1-17.

Molm, L. D., Collett, J. L. & Schaefer, D. R. 2007. Building Solidarity through Generalized Exchange: A Theory of Reciprocity. ***American Journal of Sociology***, 113(1): 205-242.

Molm, L. D. 2010. The Structure of Reciprocity. ***Social Psychology Quarterly***, 73(2): 119-131.

Moran, C. M., Diefendorff, J. M., Kim, T.-Y. & Liu, Z.-Q. 2012. A Profile Approach to Self-Determination Theory Motivations at Work. ***Journal of Vocational Behavior***, 81(3): 354-363.

Morgeson, F. P. & Campion, M. A. 2003. Work Design, ***Handbook of Psychology. Part Three. The Work Environment***: 423-452: John Wiley & Sons.

Morgeson, F. P. & Humphrey, S. E. 2006. The Work Design Questionnaire (Wdq): Developing and Validating a Comprehensive Measure for Assessing Job Design and the Nature of Work. ***Journal of applied psychology***, 91(6): 1321.

Mors, M. L. 2010. Innovation in a Global Consulting Firm: When the Problem Is Too Much Diversity. ***Strategic Management Journal***, 31(8): 841-872.

Murphy, P. R. & Jackson, S. E. 1999. Managing Work-Role Performance: Challenges for 21st Century Organizations and Employees. In D. R. Ilgen & E. D. Pulakos (Eds.), ***The Changing Nature of Work Performance***: 325-365. San Francisco: Jossey-Bass.

MuthéN, L. K. & MuthéN, B. O. 1998-2012. ***Mplus User's Guide. Seventh Edition.*** Los Angels, CA: Muthén & Muthén.

Nahm, A. Y., Vonderembse, M. A. & Koufteros, X. A. 2003. The Impact of Organizational Structure on Time-Based Manufacturing and Plant Performance. ***Journal of operations management***, 21(3): 281-306.

Nathanson, C., Paulhus, D. L. & Williams, K. M. 2006. Predictors of a Behavioral Measure of Scholastic Cheating: Personality and Competence but Not Demographics. ***Contemporary Educational Psychology***, 31(1): 97-122.

Nicholson, N., Soane, E., Fenton-O'creevy, M. & Willman, P. 2005. Personality and Domain-Specific Risk Taking. ***Journal of Risk Research***, 8(2): 157-176.

Nickerson, J. A. & Zenger, T. R. 2004. A Knowledge-Based Theory of the Firm—the Problem-Solving Perspective. ***Organization Science***, 15(6): 617-632.

Nonaka, I. & Takeuchi, H. 1995. ***The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation***: Oxford university press.

Nonnecke, B. & Preece, J. 2000. Lurker Demographics: Counting the Silent, ***Proceedings of the SIGCHI conference on Human Factors in Computing Systems***: 73-80: ACM.

Nowak, M. A. & Sigmund, K. 1998. The Dynamics of Indirect Reciprocity. ***Journal of Theoretical Biology***, 194(4): 561-574.

Nowak, M. A. & Roch, S. 2007. Upstream Reciprocity and the Evolution of Gratitude. ***Proceedings of the Royal Society of London B: Biological Sciences***, 274(1610): 605-610.

Organ, D. W. 1988. ***Organizational Citizenship Behavior: The Good Soldier Syndrome***: Lexington Books/DC Heath and Com.

Organ, D. W. & Konovsky, M. 1989. Cognitive Versus Affective Determinants of Organizational Citizenship Behavior. ***Journal of applied psychology***, 74(1): 157.

Organ, D. W. & Ryan, K. 1995. A Meta‐Analytic Review of Attitudinal and Dispositional Predictors of Organizational Citizenship Behavior. ***Personnel psychology***, 48(4): 775-802.

Orlikowski, W. J. 1996. Improvising Organizational Transformation over Time: A Situated Change Perspective. ***Information systems research***, 7(1): 63-92.

Ostroff, C. & Bowen, D. E. 2000. Moving Hr to a Higher Level - Hr Practices and Organizational Effectiveness. In K. J. Klein & S. W. J. Kozlowski (Eds.), ***Multilevel Theory, Research, and Methods in Organizations***: 211-266. San Francisco, CA: Jossey-Bass.

Parker, S. K. & Wall, T. D. 1998. ***Job and Work Design: Organizing Work to Promote Well-Being and Effectiveness***: Sage.

Parker, S. K., Andrei, D. & Li, W.-D. 2014. An Overdue Overhaul: Revamping Work Design Theory from a Time Perspective. ***Time and Work***, 1.

Paulhus, D. L. & John, O. P. 1998. Egoistic and Moralistic Biases in Self‐Perception: The Interplay of Self‐Deceptive Styles with Basic Traits and Motives. ***Journal of personality***, 66(6): 1025-1060.

Pearce, C. L. & Herbik, P. A. 2004. Citizenship Behavior at the Team Level of Analysis: The Effects of Team Leadership, Team Commitment, Perceived Team Support, and Team Size. ***Journal of Social Psychology***, 144(3): 293-310.

Pearce, J. L. & Gregersen, H. B. 1991. Task Interdependence and Extrarole Behavior: A Test of the Mediating Effects of Felt Responsibility. ***Journal of Applied Psychology***, 76(6): 838.

Penner, L. A., Dovidio, J. F., Piliavin, J. A. & Schroeder, D. A. 2005. Prosocial Behavior: Multilevel Perspectives. ***Annual Review of Psychology***, 56: 365-392.

Perugini, M., Gallucci, M., Presaghi, F. & Ercolani, A. P. 2003. The Personal Norm of Reciprocity. ***European Journal of Personality***, 17(4): 251-283.

Pfeffer, J. 1995. ***Competitive Advantage through People: Unleashing the Power of the Work Force***. MA: Harvard Business Press.

Phillips, D. C. & Burbules, N. C. 2000. ***Postpositivism and Educational Research***. Oxford, UK: Rowman & Littlefield.

Ployhart, R. E. & Vandenberg, R. J. 2010. Longitudinal Research: The Theory, Design, and Analysis of Change. ***Journal of Management***, 36(1): 94-120.

Podsakoff, N. P., Podsakoff, P. M., Mackenzie, S. B. & Klinger, R. L. 2013. Are We Really Measuring What We Say We're Measuring? Using Video Techniques to Supplement Traditional Construct Validation Procedures. ***Journal of Applied Psychology***, 98(1): 99-113.

Podsakoff, P. M., Mackenzie, S. B., Paine, J. B. & Bachrach, D. G. 2000. Organizational Citizenship Behaviors: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research. ***Journal of Management***, 26(3): 513-563.

Podsakoff, P. M., Mackenzie, S. B., Lee, J. Y. & Podsakoff, N. P. 2003. Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. ***Journal of Applied Psychology***, 88(5): 879-903.

Posthuma, R. A., Campion, M. C., Masimova, M. & Campion, M. A. 2013. A High Performance Work Practices Taxonomy: Integrating the Literature and Directing Future Research. ***Journal of Management***, 39(5): 1184-1220.

Pratt, M. G. 2000. The Good, the Bad, and the Ambivalent: Managing Identification among Amway Distributors. ***Administrative Science Quarterly***, 45(3): 456-493.

Prentice, D. A., Miller, D. T. & Lightdale, J. R. 1994. Asymmetries in Attachments to Groups and to Their Members: Distinguishing between Common-Identity and Common-Bond Groups. ***Personality and Social Psychology Bulletin***, 20(5): 484-493.

Puffer, S. M. 1987. Prosocial Behavior, Noncompliant Behavior, and Work Performance among Commission Salespeople. ***Journal of applied psychology***, 72(4): 615.

Putnam, R. D. 1993. The Prosperous Community. ***The american prospect***, 4(13): 35-42.

Raja, U., Johns, G. & Ntalianis, F. 2004. The Impact of Personality on Psychological Contracts. ***Academy of Management Journal***, 47(3): 350-367.

Rand, D. G. 2012. The Promise of Mechanical Turk: How Online Labor Markets Can Help Theorists Run Behavioral Experiments. ***Journal of Theoretical Biology***, 299: 172-179.

Rapp, A. A., Bachrach, D. G. & Rapp, T. L. 2013. The Influence of Time Management Skill on the Curvilinear Relationship between Organizational Citizenship Behavior and Task Performance. ***Journal of Applied Psychology***, 98(4): 668.

Raudenbush, S. W. & Bryk, A. S. 2002. ***Hierarchical Linear Models: Applications and Data Analysis Methods***: Sage.

Ravlin, E. C., Liao, Y., Morrell, D. L., Au, K. & Thomas, D. C. 2012. Collectivist Orientation and the Psychological Contract: Mediating Effects of Creditor Exchange Ideology. ***Journal of International Business Studies***, 43(8): 772-782.

Reade, C. 2001a. Dual Identification in Multinational Corporations: Local Managers and Their Psychological Attachment to the Subsidiary Versus the Global Organization. ***International Journal of Human Resource Management***, 12(3): 405-424.

Reade, C. 2001b. Antecedents of Organizational Identification in Multinational Corporations: Fostering Psychological Attachment to the Local Subsidiary and the Global Organization. ***International Journal of Human Resource Management***, 12(8): 1269-1291.

Reagans, R. & Mcevily, B. 2003. Network Structure and Knowledge Transfer: The Effects of Cohesion and Range. ***Administrative science quarterly***, 48(2): 240-267.

Reich, T. C. & Hershcovis, M. S. 2015. Observing Workplace Incivility. ***Journal of Applied Psychology***, 100(1): 203.

Reichardt, C. S. & Rallis, S. F. 1994. The Qualitative-Quantitative Debate: New Perspectives. ***New directions for program evaluation***, 61: 1-98.

Reiche, B. S., Cardona, P., Lee, Y. T., Canela, M. A., Akinnukawe, E., Briscoe, J. P., Bullara, C., Caparas, M. V., Caprar, D. V., Charlemagne, D., Grenness, T., He, W., Jamro, K., Kainzbauer, A., Koester, K., Lazo, A., Moreno, A., Morley, M. J., Myloni, V., Nadeem, S., Nieto, M. A., Svishchev, A., Taylor, S. N. & Wilkinson, H. 2014. Why Do Managers Engage in Trustworthy Behavior? A Multilevel Cross-Cultural Study in 18 Countries. ***Personnel Psychology***, 67(1): 61-98.

Reinholt, M., Pedersen, T. & Foss, N. J. 2011. Why a Central Network Position Isn't Enough: The Role of Motivation and Ability for Knowledge Sharing in Employee Networks. ***Academy of Management Journal***, 54(6): 1277-1297.

Ren, Y., Kraut, R. & Kiesler, S. 2007. Applying Common Identity and Bond Theory to Design of Online Communities. ***Organization studies***, 28(3): 377-408.

Reynolds, W. M. 1982. Development of Reliable and Valid Short Forms of the Marlowe-Crowne Social Desirability Scale. ***Journal of Clinical Psychology***, 38(1): 119-125.

Rhoades, L. & Eisenberger, R. 2002. Perceived Organizational Support: A Review of the Literature. ***Journal of Applied Psychology***, 87(4): 698-714.

Roberts, B. W. & Delvecchio, W. F. 2000. The Rank-Order Consistency of Personality Traits from Childhood to Old Age: A Quantitative Review of Longitudinal Studies. ***Psychological bulletin***, 126(1): 3.

Roberts, B. W., Caspi, A. & Moffitt, T. E. 2003. Work Experiences and Personality Development in Young Adulthood. ***Journal of personality and social psychology***, 84(3): 582.

Robinson, S. L., Kraatz, M. S. & Rousseau, D. M. 1994. Changing Obligations and the Psychological Contract - a Longitudinal-Study. ***Academy of Management Journal***, 37(1): 137-152.

Robson, C. 2011a. Chapter 2: Approaches to Social Research, ***Real World Research - Third Edition***: 13-41. UK: John Weily and Sons.

Robson, C. 2011b. Chapter 5: Fixed Designs, ***Real World Research - Third Edition***: 13-41. UK: John Weily and Sons.

Rockett, T. L. & Okhuysen, G. A. 2002. Familiarity in Groups: Exploring the Relationship between Inter-Member Familiarity and Group Behavior, ***Toward Phenomenology of Groups and Group Membership***: 173-201: Emerald Group Publishing Limited.

Rodgers, R. & Hunter, J. E. 1991. Impact of Management by Objectives on Organizational Productivity. ***Journal of Applied Psychology***, 76(2): 322.

Rogosa, D., Brandt, D. & Zimowski, M. 1982. A Growth Curve Approach to the Measurement of Change. ***Psychological bulletin***, 92(3): 726.

Roth, K. & Nigh, D. 1992. The Effectiveness of Headquarters-Subsidiary Relationships: The Role of Coordination, Control, and Conflict. ***Journal of Business Research***, 25(4): 277-301.

Rotter, J. B., Chance, J. E. & Phares, E. J. 1972. ***Applications of a Social Learning Theory of Personality***. Oxford, UK: Holt, Rinehart and Winston.

Rousseau, D. 1989. Psychological and Implied Contracts in Organizations. ***Employee Responsibilities and Rights Journal***, 2(2): 121-139.

Sahlins, M. 1974. ***Stone Age Economics***. New York: Aldine De Gruyter.

Sako, M. 2007. Organizational Diversity and Institutional Change: Evidence from Financial and Labor Markets in Japan. In M. Aoki, G. Jackson & H. Miyajima (Eds.), ***Corporate Governance in Japan: Institutional Change and Organizational Diversity***. Oxford, UK: Oxford University Press.

Satorra, A. & Bentler, P. M. 1986. Some Robustness Properties of Goodness of Fit Statistics in Covariance Structure Analysis. ***American Statistical Association 1986 Proceedings of Business and Economics Sections***: 549-554.

Satorra, A. & Bentler, P. 1988. Scaling Corrections for Statistics in Covariance Structure Analysis (Ucla Statistics Series 2). ***Los Angeles: University of California at Los Angeles, Department of Psychology***.

Saucier, G. & Goldberg, L. R. 2003. The Structure of Personality Attributes. In M. R. Barrick & A. M. Ryan (Eds.), ***Personality and Work***: 1-29. San Francisco, CA: Jossey-Bass.

Schmitt, N. & Kuljanin, G. 2008. Measurement Invariance: Review of Practice and Implications. ***Human Resource Management Review***, 18(4): 210-222.

Schotter, A. & Beamish, P. W. 2011. Performance Effects of Mnc Headquarters–Subsidiary Conflict and the Role of Boundary Spanners: The Case of Headquarter Initiative Rejection. ***Journal of International Management***, 17(3): 243-259.

Schuster, M. 1984. The Scanlon Plan: A Longitudinal Analysis. ***The Journal of Applied Behavioral Science***, 20(1): 23-38.

Seers, A. 1989. Team-Member Exchange Quality: A New Construct for Role-Making Research. ***Organizational behavior and human decision processes***, 43(1): 118-135.

Seers, A., Petty, M. M. & Cashman, J. F. 1995. Team-Member Exchange under Team and Traditional Management - a Naturally-Occurring Quasi-Experiment. ***Group & Organization Management***, 20(1): 18-38.

Senge, P. M. & Sterman, J. D. 1992. Systems Thinking and Organizational Learning: Acting Locally and Thinking Globally in the Organization of the Future. ***European journal of operational research***, 59(1): 137-150.

Settoon, R. P., Bennett, N. & Liden, R. C. 1996. Social Exchange in Organizations: Perceived Organizational Support, Leader–Member Exchange, and Employee Reciprocity. ***Journal of applied psychology***, 81(3): 219.

Shachaf, P. 2009. The Paradox of Expertise: Is the Wikipedia Reference Desk as Good as Your Library? ***Journal of Documentation***, 65(6): 977-996.

Shah, C. 2014. Collaborative Information Seeking. ***Journal of the Association for Information Science and Technology***, 65(2): 215-236.

Shamir, B., House, R. J. & Arthur, M. B. 1993. The Motivational Effects of Charismatic Leadership: A Self-Concept Based Theory. ***Organization science***, 4(4): 577-594.

Shibayama, S., Walsh, J. P. & Baba, Y. 2012. Academic Entrepreneurship and Exchange of Scientific Resources: Material Transfer in Life and Materials Sciences in Japanese Universities. ***American Sociological Review***, 77(5): 804-830.

Shipman, M. 1997. ***The Limitations of Social Research***. NY: Routledge.

Shipp, A. J. & Cole, M. S. 2015. Time in Individual-Level Organizational Studies: What Is It, How Is It Used, and Why Isn't It Exploited More Often? In F. P. Morgeson (Ed.), ***Annual Review of Organizational Psychology and Organizational Behavior, Vol 2***, vol. 2: 237-260. Palo Alto: Annual Reviews.

Shore, L. M., Tetrick, L. E., Lynch, P. & Barksdale, K. 2006. Social and Economic Exchange: Construct Development and Validation. ***Journal of Applied Social Psychology***, 36(4): 837-867.

Shore, L. M., Bommer, W. H., Rao, A. N. & Seo, J. 2009. Social and Economic Exchange in the Employee-Organization Relationship: The Moderating Role of Reciprocation Wariness. ***Journal of Managerial Psychology***, 24(8): 701-721.

Sijtsma, K. 2009. On the Use, the Misuse, and the Very Limited Usefulness of Cronbach's Alpha. ***Psychometrika***, 74(1): 107.

Simon, H. A. 1951. A Formal Theory of the Employment Relationship. ***Econometrica: Journal of the Econometric Society***: 293-305.

Singer, J. & Willet, J. 2003. A Framework for Investigating Change over Time. ***Applied longitudinal data analysis: Modeling change and event occurrence***: 3-15.

Smith, C., Organ, D. W. & Near, J. P. 1983. Organizational Citizenship Behavior: Its Nature and Antecedents. ***Journal of applied psychology***, 68(4): 653.

Sobel, M. E. 1990. Effect Analysis and Causation in Linear Structural Equation Models. ***Psychometrika***, 55(3): 495-515.

Song, L. J., Tsui, A. S. & Law, K. S. 2009. Unpacking Employee Responses to Organizational Exchange Mechanisms: The Role of Social and Economic Exchange Perceptions. ***Journal of Management***, 35(1): 56-93.

Sorenson, O. & Stuart, T. E. 2001. Syndication Networks and the Spatial Distribution of Venture Capital Investments1. ***American journal of sociology***, 106(6): 1546-1588.

Sparrowe, R. T. & Liden, R. C. 1997. Process and Structure in Leader-Member Exchange. ***Academy of management Review***, 22(2): 522-552.

Sproull, L. & Kiesler, S. 1986. Reducing Social Context Cues: Electronic Mail in Organizational Communication. ***Management science***, 32(11): 1492-1512.

Sproull, L. & Kiesler, S. 1991. Computers, Networks and Work. ***Scientific American***, 265(3): 116-123.

Srivastava, S., John, O. P., Gosling, S. D. & Potter, J. 2003. Development of Personality in Early and Middle Adulthood: Set Like Plaster or Persistent Change? ***Journal of personality and social psychology***, 84(5): 1041.

Stahl, G. K., Pless, N. M. & Maak, T. 2013. Responsible Global Leadership. In M. Mendenhall, J. S. Osland, A. Bird, G. Oddou, M. L. Maznevski, M. J. Stevens & G.

K. Stahl (Eds.), ***Global Leadership - Research, Practice and Development***. Oxford, UK: Routlege.

Steenkamp, J.-B. E. & Baumgartner, H. 1998. Assessing Measurement Invariance in Cross-National Consumer Research. ***Journal of consumer research***, 25(1): 78-90.

Steiger, J. H. 1980. Tests for Comparing Elements of a Correlation Matrix. ***Psychological bulletin***, 87(2): 245.

Sun, L. Y., Aryee, S. & Law, K. S. 2007. High-Performance Human Resource Practices, Citizenship Behavior, and Organizational Performance: A Relational Perspective. ***Academy of Management Journal***, 50(3): 558-577.

Swap, W., Leonard, D. & Shields, M. & Abrams, L. 2001. Using Mentoring and Storytelling to Transfer Knowledge in the Workplace. ***Journal of management information systems***, 18(1): 95-114.

Szulanski, G. 1996. Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm. ***Strategic management journal***, 17(S2): 27-43.

Takahashi, N. 2000. The Emergence of Generalized Exchange. ***American Journal of Sociology***: 1105-1134.

Tenzer, H. & Pudelko, M. 2016. Media Choice in Multilingual Virtual Teams. ***Journal of International Business Studies***, 47(4): 427-452.

Tesluk, P., Mathieu, J. E., Zaccaro, S. J. & Marks, M. 1997. Task and Aggregation Issues in the Analysis and Assessment of Team Performance. ***Team performance assessment and measurement: Theory, methods, and applications***: 197-224.

Tetrick, L., Shore, L. & Tsui, A. 2004. Development of a Measure of Generalized, Balanced, and Negative Reciprocity in Employment Relationships. ***International Association for Chinese Management Research, Beijing, PRC***.

Thatcher, S. M., Doucet, L. & Tuncel, E. 2003. Subjective Identities and Identity Communication Processes in Information Technology Teams, ***Identity Issues in Groups***: 53-89: Emerald Group Publishing Limited.

Thibaut, J. W. & Kelley, H. H. 1959. The Social Psychology of Groups.

Thompson, E. R. 2008. Development and Validation of an International English Big-Five Mini-Markers. ***Personality and Individual Differences***, 45(6): 542-548.

Thompson, J. D. 1967. ***Organizations in Action: Social Science Bases of Administrative Theory***. NJ: Transaction publishers.

Thompson, L. L., Wang, J. W. & Gunia, B. C. 2010. Negotiation, ***Annual Review of Psychology***, vol. 61: 491-515. Palo Alto: Annual Reviews.

Tomz, M., King, G. & Zeng, L. 2003. Relogit: Rare Events Logistic Regression. ***Journal of statistical software***, 8(i02).

Triandis, H. C. 1990. Cross-Cultural Studies of Individualism and Collectivism. In J. Berman (Ed.), ***Nebraska Symposium on Motivation, 1989***. Lincoln: University of Nebraska Press.

Triandis, H. C. 1995a. Attributes of Individualism and Collectivism, ***Individualism & Collectivism***: 43-80. Oxford, UK: Westveiw Press.

Triandis, H. C. 1995b. ***Individualism & Collectivism***. Oxford: Westview Press.

Tsai, W. 2001. Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. ***Academy of management journal***, 44(5): 996-1004.

Tsui, A. S., Pearce, J. L., Porter, L. W. & Tripoli, A. M. 1997. Alternative Approaches to the Employee-Organization Relationship: Does Investment in Employees Pay Off? ***Academy of Management journal***, 40(5): 1089-1121.

Turillo, C. J., Folger, R., Lavelle, J. J., Umphress, E. E. & Gee, J. O. 2002. Is Virtue Its Own Reward? Self-Sacrificial Decisions for the Sake of Fairness. ***Organizational Behavior and Human Decision Processes***, 89(1): 839-865.

Turner, J. C. 1982. Towards a Cognitive Redefinition of the Social Group. ***Social identity and intergroup relations***: 15-40.

Van Der Vegt, G. S., Emans, B. J. M. & Van De Vliert, E. 2001. Patterns of Interdependence in Work Teams: A Two-Level Investigation of the Relations with Job and Team Satisfaction. ***Personnel Psychology***, 54(1): 51-69.

Van Dyne, L. & Ang, S. 1998. Organizational Citizenship Behavior of Contingent Workers in Singapore. ***Academy of management Journal***, 41(6): 692-703.

Van Maanen, J. & Schein, E. H. 1979. Toward a Theory of Organizational Socialization. In B. M. Staw (Ed.), ***Research in Organizational Behaviour***, vol. 1: 209-264. Greenwich, CT: JAI Press.

Vandenberg, R. J. & Lance, C. E. 2000. A Review and Synthesis of the Measurement Invariance Literature: Suggestions, Practices, and Recommendations for Organizational Research. ***Organizational research methods***, 3(1): 4-70.

Vidyarthi, P. R., Erdogan, B., Anand, S., Liden, R. C. & Chaudhry, A. 2014. One Member, Two Leaders: Extending Leader–Member Exchange Theory to a Dual Leadership Context. ***Journal of Applied Psychology***, 99(3): 468-483.

Von Hippel, E. & Von Krogh, G. 2003. Open Source Software and the “Private-Collective” Innovation Model: Issues for Organization Science. ***Organization science***, 14(2): 209-223.

Vonk, R. 2002. Self-Serving Interpretations of Flattery: Why Ingratiation Works. ***Journal of personality and social psychology***, 82(4): 515.

Vora, D. & Kostova, T. 2007. A Model of Dual Organizational Identification in the Context of the Multinational Enterprise. ***Journal of Organizational Behavior***, 28(3): 327-350.

Wageman, R. 1995. Interdependence and Group Effectiveness. ***Administrative science quarterly***: 145-180.

Wageman, R. 2001. The Meaning of Interdependence. In M. E. Turner (Ed.), ***Groups at Work: Theory and Research***. NY: Routleg.

Wall, T. D. & Martin, R. 1987. ***Job and Work Design***: John Wiley & Sons.

Walster, E., Berscheid, E. & Walster, G. W. 1973. New Directions in Equity Research. ***Journal of personality and social psychology***, 25(2): 151.

Wasko, M. M. & Faraj, S. 2005. Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice. ***MIS quarterly***: 35-57.

Watkins, D., Akande, A., Fleming, J., Ismail, M., Lefner, K., Regmi, M., Watson, S., Yu, J., Adair, J., Cheng, C., Gerong, A., Mcinerney, D., Mpofu, E., Singh-Sengupta, S. & Wondimu, H. 1998. Cultural Dimensions, Gender, and the Nature of Self-Concept: A Fourteen-Country Study. ***International Journal of Psychology***, 33(1): 17-31.

Wayne, S. J., Shore, L. M. & Liden, R. C. 1997. Perceived Organizational Support and Leader-Member Exchange: A Social Exchange Perspective. ***Academy of Management Journal***, 40(1): 82-111.

Weber, M. 1921. Bureaucracy, ***Economy and Society***, vol. 1: 956-963. Barkley, CA: University California Press.

Weijters, B., Schillewaert, N. & Geuens, M. 2008. Assessing Response Styles across Modes of Data Collection. ***Journal of the Academy of Marketing Science***, 36(3): 409-422.

Weiss, H. M. & Cropanzano, R. 1996. Affective Events Theory: A Theoretical Discussion of the Structure, Causes and Consequences of Affective Experiences at Work. ***Research in Organizational Behavior, Vol 18, 1996***, 18: 1-74.

Westphal, J. D. & Stern, I. 2007. Flattery Will Get You Everywhere (Especially If You Are a Male Caucasian): How Ingratiation, Boardroom Behavior, and Demographic Minority Status Affect Additional Board Appointments at Us Companies. ***Academy of Management Journal***, 50(2): 267-288.

Westphal, J. D., Park, S. H., Mcdonald, M. L. & Hayward, M. L. A. 2012. Helping Other Ceos Avoid Bad Press: Social Exchange and Impression Management Support among Ceos in Communications with Journalists. ***Administrative Science Quarterly***, 57(2): 217-268.

Wiggins, J. S. 1991. Agency and Communion as Conceptual Coordinates for the Understanding and Measurement of Interpersonal Behavior. In D. Cicchetti & W. M. Grove (Eds.), ***Thinking Clearly About Psychology: Essays in Honour of Paul E. Meehl***. MN: University of Minnesota Press.

Willer, R., Flynn, F. J. & Zak, S. 2012. Structure, Identity, and Solidarity: A Comparative Field Study of Generalized and Direct Exchange. ***Administrative Science Quarterly***, 57(1): 119-155.

Williams, L. J. & Anderson, S. E. 1991. Job-Satisfaction and Organizational Commitment as Predictors of Organizational Citizenship and in-Role Behaviors. ***Journal of Management***, 17(3): 601-617.

Williamson, O. E. 1985. ***The Economic Intstitutions of Capitalism***: Simon and Schuster.

Williamson, Q. E. 2000. The New Institutional Economics: Taking Stock, Looking Ahead. ***Journal of Economic Literature***, 38(3): 595-613.

Witt, L., Kacmar, K. M. & Andrews, M. C. 2001. The Interactive Effects of Procedural Justice and Exchange Ideology on Supervisor ‐ Rated Commitment. ***Journal of Organizational Behavior***, 22(5): 505-515.

Wright, P. M. & Nishii, L. H. 2007. Strategic Hrm and Organizational Behavior: Integrating Multiple Levels of Analysis. ***CAHRS Working Paper Series***: 468.

Wu, J. B., Hom, P. W., Tetrick, L. E., Shore, L. M., Jia, L., Li, C. & Song, L. J. 2006. The Norm of Reciprocity: Scale Development and Validation in the Chinese Context. ***Management and Organization Review***, 2(3): 377-402.

Wu, P. F. & Korfiatis, N. 2013. You Scratch Someone's Back and We'll Scratch Yours: Collective Reciprocity in Social Q&a Communities. ***Journal of the American Society for Information Science and Technology***, 64(10): 2069-2077.

Yamagishi, T. & Cook, K. S. 1993. Generalised Exchange and Social Dilemmas. ***Social Psychology Quarterly***, 56(4): 235-248.

Yamagishi, T. & Yamagishi, M. 1994. Trust and Commitment in the United States and Japan. ***Motivation and emotion***, 18(2): 129-166.

Yamagishi, T., Jin, N. & Kiyonari, T. 1999. Bounded Generalized Reciprocity: Ingroup Boasting and Ingroup Favoritism. ***Advances in group processes***, 16(1): 161-197.

Yamagishi, T. & Mifune, N. 2008. Does Shared Group Membership Promote Altruism? ***Rationality and Society***, 20(1): 5-30.

Yamagishi, T., Mifune, N., Liu, J. H. & Pauling, J. 2008. Exchanges of Group-Based Favours: Ingroup Bias in the Prisoner's Dilemma Game with Minimal Groups in Japan and New Zealand. ***Asian Journal of Social Psychology***, 11(3): 196-207.

Youngs, G. A. 1986. Patterns of Threat and Punishment Reciprocity in a Conflict Setting. ***Journal of Personality and Social Psychology***, 51(3): 541.

Zaccaro, S. J. 2012. Individual Differences and Leadership: Contributions to a Third Tipping Point. ***The Leadership Quarterly***, 23(4): 718-728.

Zammuto, R. F., Griffith, T. L., Majchrzak, A., Dougherty, D. J. & Faraj, S. 2007. Information Technology and the Changing Fabric of Organization. ***Organization Science***, 18(5): 749-762.

Zander, U. & Kogut, B. 1995. Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test. ***Organization science***, 6(1): 76-92.

Zinko, R., Ferris, G. R., Humphrey, S. E., Meyer, C. J. & Aime, F. 2012. Personal Reputation in Organizations: Two‐Study Constructive Replication and Extension of Antecedents and Consequences. ***Journal of Occupational and Organizational Psychology***, 85(1): 156-180.

Zyphur, M. J. 2009. When Mindsets Collide: Switching Analytical Mindsets to Advance Organization Science. ***Academy of Management Review***, 34(4): 677-688.

Appendix 1: Survey (Chapter 4, Stage 1)

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Dear participants,

The purpose of this survey is to verify the content validity of survey items that measure individuals orientations towards interactions in the workplace.

Your responses to this survey are kept confidential and annonymous. Data will be only used for research purpose and no one will be able to identify individual responses. The results will form part of my dissertation and be used in future publications.
This survey will take approximately 15 minutes to complete.

Your participation is very much appreciated.

Katsuhiko Yoshikawa (k.yoshikawa@lse.ac.uk)
Ph.D Researcher, Department of Management, London School of Economics and Social Science

0% 100%

>> Next

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Social exchange refers to exchanges of benefits, such as support, favours, extra efforts and recognition, between individuals in enduring relationships (e.g. colleagues, supervisor-subordinate). Studies of social exchange identified three distinct forms of social exchange - negotiated, reciprocal and generalised - and proposed individuals have different degree of orientation towards them.

In this study, I develop a set of scales that measure individuals' orientations to three different social exchange forms (the orientation to generalised exchange is consist of three sub-dimensions 3a-3c). Below summarises the definitions of constructs.

----

1. Negotiated exchange orientation:
Individuals' beliefs in favour of having explicit negotiations about the terms of exchange in interactions with other individuals in the workplace.

2. Reciprocal exchange orientation:
Individuals' beliefs in favour of the norm of reciprocity (when one receives something from other person, one should reciprocate to him/her) in interactions with other individuals in the workplace.

3: Unilateral giving, expecting indirect reciprocation:
Individuals' beliefs in favour of unilateral giving of resources in interactions with other individuals in the workplace, while expecting for indirect reciprocation (from someone in the workplace).

4. Paying-it-forward
Individuals' beliefs in favour of giving resources to other individuals when they receive resources from someone in the workplace.

5. Rewarding reputation:
Individuals' beliefs in favour of rewarding a person who unilaterally gives resources to others in the workplace by giving resources.

Please read each of the following items and assign it to one of five constructs that you think the item best describes.

	1. Negotiated exchange orientation	2. Reciprocal exchange orientation	3a. Unilateral giving	3b. Paying-it-forward	3c. Rewarding reputation
I should go the extra mile for others at work, as someone will do the same for me in the future.	○	○	○	○	○
At work, I should be kind to those who are kind to others.	○	○	○	○	○
When a colleague who often gives support to others is in trouble, I should do something for him/her.	○	○	○	○	○
I believe those who often go the extra mile for others at work deserve my effort to help them.	○	○	○	○	○
I think kindness to others in the workplace will eventually come back to me in some way.	○	○	○	○	○
When I receive support from a colleague, I should provide support to others in the workplace.	○	○	○	○	○
I shouldn't do a favour to someone else at work unless what I will get in return is clear.	○	○	○	○	○

	1. Negotiated exchange orientation	2. Reciprocal exchange orientation	3a. Unilateral giving	3b. Paying-it-forward	3c. Rewarding reputation
If I do not ask for something in return before doing something for others at work, I will be taken advantage of.	○	○	○	○	○
My efforts for colleagues will be rewarded by someone at some point, if not immediately.	○	○	○	○	○
If someone in the workplace goes the extra mile for me, I should do the same when he/she needs it.	○	○	○	○	○
When someone asks me to do extra work, I should ask what he/she will do in return.	○	○	○	○	○
It is right to go the extra mile for colleagues after receiving help from someone in the workplace.	○	○	○	○	○
I don't like to be in another person's debt at work.	○	○	○	○	○
How much I do for someone in the workplace should depend on how well that person treats me.	○	○	○	○	○
	1. Negotiated exchange orientation	2. Reciprocal exchange orientation	3a. Unilateral giving	3b. Paying-it-forward	3c. Rewarding reputation
At work, it generally pays to clarify rewards before making extra efforts for others.	○	○	○	○	○
When I receive a colleague's favour, I should pay it forward to others in the workplace.	○	○	○	○	○
If someone helps me at work, I should do something for others in the workplace.	○	○	○	○	○
It is worthwhile to do a favor to those who sometimes do favors to others at work.	○	○	○	○	○
When I receive support from a colleague, I should remember to give something back to him/her.	○	○	○	○	○
It is right to help others at work, as I will receive help from someone in the future.	○	○	○	○	○

0% 100%

>> Next

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

(Question continues from the previous page)

Social exchange refers to exchanges of benefits, such as support, favours, extra efforts and recognition, between individuals in enduring relationships (e.g. colleagues, supervisor-subordinate). Studies of social exchange identified three distinct forms of social exchange - negotiated, reciprocal and generalised - and proposed individuals have different degree of orientation towards them.

In this study, I develop a set of scales that measure individuals' orientations to three different social exchange forms (the orientation to generalised exchange is consist of three sub-dimensions 3a-3c). Below summarises the definitions of constructs.

---

1. Negotiated exchange orientation:
Individuals' beliefs in favour of having explicit negotiations about the terms of exchange in interactions with other individuals in the workplace.

2. Reciprocal exchange orientation:
Individuals' beliefs in favour of the norm of reciprocity (when one receives something from other person, one should reciprocate to him/her) in interactions withother individuals in the workplace.

3a: Unilateral giving, expecting indirect reciprocation:
Individuals' beliefs in favour of unilateral giving of resources in interactions with other individuals in the workplace, while expecting for indirect reciprocation (from someone in the workplace).

3b. Paying-it-forward
Individuals' beliefs in favour of giving resources to other individuals when they receive resources from someone in the workplace.

3c. Rewarding reputation:
Individuals' beliefs in favour of rewarding a person who unilaterally gives resources to others in the workplace by giving resources.

Please read each of the following items and assign it to one of five constructs that you think the item best describes.

	1. Negotiated exchange orientation	2. Reciprocal exchange orientation	3a. Unilateral giving	3b. Paying-it-forward	3c. Rewarding reputation
Receiving kindness from someone in the workplace makes me feel I should do something for others.	○	○	○	○	○
I hesitate to ask colleagues to do something extra for me unless I can offer concrete benefits in exchange.	○	○	○	○	○
When someone at work does me a favour, I want to know what he/she expects from me in return.	○	○	○	○	○
I don't mind to do a favour for colleagues, as it will somehow come back to me.	○	○	○	○	○
When I ask someone to help me with work, I should ask him/her what he/she wants in return.	○	○	○	○	○
When I find someone in the workplace helping others, I feel I should offer help when he/she needs.	○	○	○	○	○

	1. Negotiated exchange orientation	2. Reciprocal exchange orientation	3a. Unilateral giving	3b. Paying-it-forward	3c. Rewarding reputation
If someone does something for me, I often find myself thinking about what I have done for him/her.	○	○	○	○	○
At work, I always repay someone who has done me a favour.	○	○	○	○	○
I preferably treat colleagues who do not hesitate to go the extra mile for others.	○	○	○	○	○
I am happy to do favours for others at work, as I will someday need a favor from someone.	○	○	○	○	○
When someone in the workplace makes extra efforts for me, I often start thinking what I can do for others.	○	○	○	○	○
I am happy to go the extra mile for colleagues who often go the extra mile for others.	○	○	○	○	○
	1. Negotiated exchange orientation	2. Reciprocal exchange orientation	3a. Unilateral giving	3b. Paying-it-forward	3c. Rewarding reputation
When I receive someone's favour at work, I want to repay the debt by doing a favour for others	○	○	○	○	○
It is uncomfortable for me to do extra work for someone without confirming what he/she will do for me in return.	○	○	○	○	○
If someone does something for me, I feel the need to do something for him/her.	○	○	○	○	○

0% 100%

>> Next

Appendix 2: Survey (Chapter 3, Stage 2)

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Dear Participant,

The purpose of this survey is to understand people's views about their relationships with others in the workplace. You will be asked questions about your general beliefs and experiences, including your behaviors and feelings.

All survey responses are strictly confidential and anonymous. Data will only be used for research purposes, and no one will be able to identify individual responses.

Please read each question carefully, and then answer with your first reaction. The usefulness of this survey depends on the frankness and honesty with which you answer the questions. There are no right or wrong answers — this is not a test. Please complete all questions. If a question does not quite fit your circumstances, simply give the answer that is closest to your views. This survey will take approximately 15 minutes to complete.

Your participation is very much appreciated.

Ph.D. researcher: Katsuhiko Yoshikawa (k.yoshikawa@lse.ac.uk)
Department of Management
London School of Economics and Political Science
Houghton Street, London, WC2A 2AE, UK

0% 100%

NEXT

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Are you a full-time employee in an organization?

- ○ Yes
- ○ No

0% 100%

NEXT

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Are you working for an organization with more than 30 employees?

- ○ Yes
- ○ No

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please specify your level of proficiency in reading English.

- Native / bilingual
- Professional
- Limited / elementary
- No practical proficiency

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about yourself. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I enjoy being unique and different from others in many respects.							
I do my own thing, regardless of what others think.							
Personal identity, independent of others, is very important to me.							
I feel it is important for me to act as an independent person.							
I maintain my independence in a group.							
I retain independence even from my family members.							
Family and friends do not influence my important life decisions.							
I am the same at home and in public.							
I have my own ideals and try hard to achieve them.							
I stick to my opinions in any circumstances.							
I think it is most important in life to be true to myself.							

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about yourself. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My close relationships are an important reflection of who I am.							
When I feel very close to someone, it often feels to me like that person is an important part of who I am.							
I usually feel a strong sense of pride when someone close to me has an important accomplishment.							
I think one of the most important parts of who I am can be captured by looking at my close friends and understanding who they are.							
When I think of myself, I often think of my close friends or family also.							
If a person hurts someone close to me, I feel personally hurt as well.							
In general, my close relationships are an important part of my self-image.							
Overall, my close relationships have very little to do with how I feel about myself.							
My close relationships are unimportant to my sense of what kind of person I am.							
My sense of pride comes from knowing who I have as close friends.							
When I establish a close relationship with someone, I usually develop a strong sense of identification with that person.							

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about yourself. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The groups I belong to are an important reflection of who I am.	○	○	○	○	○	○	○
When I feel very close to a group, it often feels to me like the group is an important part of who I am.	○	○	○	○	○	○	○
I usually feel a strong sense of pride when a group I belong to has an important accomplishment.	○	○	○	○	○	○	○
I think one of the most important parts of who I am can be captured by looking at the groups I belong to and understanding what they are.	○	○	○	○	○	○	○
When I think of myself, I often think of the groups I belong to also.	○	○	○	○	○	○	○
If a person hurts a group I belong to, I feel personally hurt as well.	○	○	○	○	○	○	○
In general, the groups I belong to are an important part of my self-image.	○	○	○	○	○	○	○
Overall, the groups I belong to have very little to do with how I feel about myself.	○	○	○	○	○	○	○
The groups I belong to are unimportant to my sense of what kind of person I am.	○	○	○	○	○	○	○
My sense of pride comes from knowing which groups I belong to.	○	○	○	○	○	○	○
When I establish membership with a group, I usually develop a strong sense of identification with that group.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about other people at work. Please answer to what extent you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I trust my close colleagues.	○	○	○	○	○	○	○
My close colleagues are trustworthy.	○	○	○	○	○	○	○
My close colleagues are reliable.	○	○	○	○	○	○	○
My close colleagues are dependable.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about other people at work. Please answer to what extent you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I trust people in the organization.	○	○	○	○	○	○	○
People in the organization are trustworthy.	○	○	○	○	○	○	○
People in the organization are reliable.	○	○	○	○	○	○	○
People in the organization are dependable.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When someone asks me to do extra work, I should ask what he/she will do in return.	○	○	○	○	○	○	○
At work, it generally pays to clarify rewards before making extra efforts for others.	○	○	○	○	○	○	○
If I do not ask for something in return before doing something for others at work, I will be taken advantage of.	○	○	○	○	○	○	○
I shouldn't do a favor to someone else at work unless what I will get in return is clear.	○	○	○	○	○	○	○
It is uncomfortable for me to do extra work for someone without confirming what he/she will do for me in return.	○	○	○	○	○	○	○
I don't hesitate to ask for something in return when someone asks me to help him/her with work.	○	○	○	○	○	○	○
When I ask someone to help me with work, I should ask him/her what he/she wants in return.	○	○	○	○	○	○	○
When someone at work does me a favor, I want to know what he/she expects from me in return.	○	○	○	○	○	○	○
It is a good idea to offer some rewards when I ask colleagues to go the extra mile for me.	○	○	○	○	○	○	○
I hesitate to ask colleagues to do something extra for me unless I can offer concrete benefits in exchange.	○	○	○	○	○	○	○

0% 100%

NEXT

The London School of Economics and Political Science

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
How much I do for someone in the workplace should depend on how well that person treats me.	○	○	○	○	○	○	○
I don't like to be in another person's debt at work.	○	○	○	○	○	○	○
If someone in the workplace goes the extra mile for me, I should do the same when he/she needs it.	○	○	○	○	○	○	○
When I help a colleague, I expect him/her to do something for me in the future.	○	○	○	○	○	○	○
When I receive support from a colleague, I should remember to give something back to him/her.	○	○	○	○	○	○	○
If someone in the workplace does me a favor, I feel obliged to repay him/her in some way.	○	○	○	○	○	○	○
If someone does something for me, I feel the need to do something for him/her.	○	○	○	○	○	○	○
At work, I always repay someone who has done me a favor.	○	○	○	○	○	○	○
If someone does something for me, I often find myself thinking about what I have done for him/her.	○	○	○	○	○	○	○
I feel uncomfortable when a colleague does me a favor which I know I won't be able to return.	○	○	○	○	○	○	○

0% 100%

NEXT

The London School of Economics and Political Science

Recent research on decision making shows that choices are affected by context. Differences in how people feel, their previous knowledge and experience, and their environment can affect choices. To help us understand how people make decisions, we are interested in information about you. Specifically, we are interested in whether you actually take the time to read the directions; if not, some results may not tell us very much about decision making in the real world. To show that you have read the instructions, please ignore the question below **about** how you are feeling and instead check only the "none of the above" option as your answer. Thank you very much.

Please check all words that describe how you are currently feeling.

☐ Interested	☐ Hostile	☐ Nervous
☐ Distressed	☐ Enthusiastic	☐ Determined
☐ Excited	☐ Proud	☐ Attentive
☐ Upset	☐ Irritable	☐ Jittery
☐ Strong	☐ Alert	☐ Active
☐ Guilty	☐ Ashamed	☐ Afraid
☐ Scared	☐ Inspired	☐ None of the above

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When I receive support from a colleague, I should provide support to others in the workplace.	○	○	○	○	○	○	○
It is right to go the extra mile for colleagues after receiving help from someone in the workplace.	○	○	○	○	○	○	○
If someone helps me at work, I should do something for others in the workplace.	○	○	○	○	○	○	○
When I receive a colleague's favor, I should pay it forward to others in the workplace	○	○	○	○	○	○	○
I feel the need to go the extra mile for others in the workplace when someone goes the extra mile for me.	○	○	○	○	○	○	○
When someone does me a favor, I feel obligated to do a favor for others	○	○	○	○	○	○	○
Receiving kindness from someone in the workplace makes me feel I should do something for others.	○	○	○	○	○	○	○
It is uncomfortable for me to do nothing for others after receiving help from someone in the workplace.	○	○	○	○	○	○	○
When someone in the workplace makes extra efforts for me, I often start thinking what I can do for others	○	○	○	○	○	○	○
When I receive someone's favor at work, I want to repay the debt by doing a favor for others	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace.
Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I think kindness to others in the workplace will eventually comes back to me in some way.	○	○	○	○	○	○	○
It is right to help others at work, as I will receive help from someone in the future.	○	○	○	○	○	○	○
I should go the extra mile for others at work, as someone will do the same for me in the future.	○	○	○	○	○	○	○
My efforts for colleagues will be rewarded by someone at some point, if not immediately.	○	○	○	○	○	○	○
In a long run, being supportive to others at work will pay off.	○	○	○	○	○	○	○
It is natural for me to do extra work for others, as I believe someone will do the same for me in the future.	○	○	○	○	○	○	○
I often offer help to others in the workplace, expecting that someone will help me when I need it.	○	○	○	○	○	○	○
Please choose "Somewhat Agree" for this question.	○	○	○	○	○	○	○
I don't mind to do a favor for colleagues, as it will somehow come back to me.	○	○	○	○	○	○	○
I feel uncomfortable not helping someone who needs help, as I might need help from someone in the future.	○	○	○	○	○	○	○
I am happy to do favors for others at work, as I will someday need a favor from someone.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
At work, I should be kind to those who are kind to others.	○	○	○	○	○	○	○
I believe those who often go the extra mile for others at work deserves my effort to help them.	○	○	○	○	○	○	○
When a colleague who often gives support to others is in trouble, I should do something for him/her.	○	○	○	○	○	○	○
It is worthwhile to do a favor to those who sometimes do favors to others at work.	○	○	○	○	○	○	○
How much I do for someone in the workplace depends on how well the person treats others.	○	○	○	○	○	○	○
I preferably treat colleagues who do not hesitate to go the extra mile for others.	○	○	○	○	○	○	○
When I see someone putting effort in helping others at work, I think what I can do for him/her	○	○	○	○	○	○	○
I am happy to go the extra mile for colleagues who often go the extra mile for others	○	○	○	○	○	○	○
I do not to give support to those who do not help colleagues.	○	○	○	○	○	○	○
I sometimes want to personally reward colleagues who does extra work for others.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feeling about yourself, colleagues, and the organisation. Please answer to what extent you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
At work, I consider the organization's wishes and desires to be relevant.	○	○	○	○	○	○	○
At work, I am concerned about the needs and interests of the organization.	○	○	○	○	○	○	○
At work, the goals and aspirations of my close colleagues are important to me.	○	○	○	○	○	○	○
At work, I consider my own wishes and desires to be relevant.	○	○	○	○	○	○	○
At work, I am concerned about my own needs and interests.	○	○	○	○	○	○	○
At work, the goals and aspirations of the organization are important to me.	○	○	○	○	○	○	○
At work, I am concerned about the needs and interests of my close colleagues.	○	○	○	○	○	○	○
At work, I consider my close colleagues' wishes and desires to be relevant.	○	○	○	○	○	○	○
At work, my personal goals and aspirations are important to me.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
If someone does something for you, you should do something of greater value for them.	○	○	○	○	○	○	○
If someone does you a favor, you should do even more in return.	○	○	○	○	○	○	○
Please choose "Disagree" for this question.	○	○	○	○	○	○	○
If someone goes out of their way to help me, I feel as though I should do more for them than merely return the favor.	○	○	○	○	○	○	○
If a person does you a favor, it's a good idea to repay that person with a greater favor.	○	○	○	○	○	○	○
It's not necessary to return favors quickly.	○	○	○	○	○	○	○
As a rule, I don't accept a favor if I can't return the favor.	○	○	○	○	○	○	○
If you frequent a certain restaurant, you should leave large tips to ensure good service.	○	○	○	○	○	○	○
If a stranger helped you start your stalled car, you would not feel obligated to return the favor.	○	○	○	○	○	○	○
If someone returned a wallet you lost, you should try to do something in order to repay him/her.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The most realistic policy is to take more from others than you give.	○	○	○	○	○	○	○
It generally pays to let others do more for you than you do for them.	○	○	○	○	○	○	○
In the long run, it's better to accept favors than to do favors for others.	○	○	○	○	○	○	○
You should only help someone if that person will help you in the future.	○	○	○	○	○	○	○
You should only give help only when it benefits you.	○	○	○	○	○	○	○
You should not bend over backwards to help another person.	○	○	○	○	○	○	○
I feel used when people ask favors of me.	○	○	○	○	○	○	○
Asking for another's help gives them power over your life.	○	○	○	○	○	○	○
People who act nicely toward others are often just trying to get something	○	○	○	○	○	○	○
How many favors you do for someone should depend on how many favors they do for you.	○	○	○	○	○	○	○

0% 100%

NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following questions are about you.

Please provide your age.

Please choose your gender.

- Male
- Female

What is your highest degree or level of education?

- Postgraduate or higher
- University degree
- High school diploma
- Others

Please specify your ethnicity.

- Asian / Asian American
- African American / Caribbean
- Multiple ethnic groups
- White
- Others

Please specify your country of origin.

In which industry are you currently working?

- Manufacturing
- Utility
- Construction
- Wholesale or retail
- Restaurant or hospitality
- Financial or insurance
- Others

How many years have you worked for your current employer?

Please provide your Mturk worker ID.

0% 100%

NEXT

Appendix 3: Survey (Chapter 4 Stage 3)

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Dear Participant,

The purpose of this survey is to understand people's views about their relationships with others in the workplace. You will be asked questions about your general beliefs and experiences, including your behaviors and feelings.

All survey responses are strictly confidential and anonymous. Data will only be used for research purposes, and no one will be able to identify individual responses.

Please read each question carefully, and then answer with your first reaction. The usefulness of this survey depends on the frankness and honesty with which you answer the questions. There are no right or wrong answers — this is not a test. Please complete all questions. If a question does not quite fit your circumstances, simply give the answer that is closest to your views. This survey will take approximately 15 minutes to complete.

Your participation is very much appreciated.

Ph.D. researcher: Katsuhiko Yoshikawa (k.yoshikawa@lse.ac.uk)
Department of Management
London School of Economics and Political Science
Houghton Street, London, WC2A 2AE, UK

0% 100%

>> NEXT

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Are you a full-time employee in an organization?

- Yes
- No

0% 100%

>> NEXT

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Are you working for an organization with more than 100 employees?

- Yes
- No

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please specify your level of proficiency in reading English.

- Native / bilingual
- Professional
- Limited / elementary
- No practical proficiency

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please use the below list of common human traits to describe yourself as accurately as possible. Describe yourself as you really are compared to other people you know of the same age and sex, not as you wish to be. So, generally, is it accurate or inaccurate that you are:

	1. Inaccurate	2.	3.	4.	5. Accurate
Organized	○	○	○	○	○
Systematic	○	○	○	○	○
Neat	○	○	○	○	○
Untidy	○	○	○	○	○
Inefficient	○	○	○	○	○
Outgoing	○	○	○	○	○
Extroverted	○	○	○	○	○
Reserved	○	○	○	○	○
Quiet	○	○	○	○	○
Shy	○	○	○	○	○
Intelligent	○	○	○	○	○
Intellectual	○	○	○	○	○
Philosophical	○	○	○	○	○
Uncreative	○	○	○	○	○
Unimaginative	○	○	○	○	○
Envious	○	○	○	○	○
Jealous	○	○	○	○	○
Moody	○	○	○	○	○
Unanxious	○	○	○	○	○
Unworried	○	○	○	○	○
Cooperative	○	○	○	○	○
Sympathetic	○	○	○	○	○
Warm	○	○	○	○	○
Rude	○	○	○	○	○
Unkind	○	○	○	○	○

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

To what extent are the following values important to you at work?

	Not at all Important	Very Unimportant	Somewhat Unimportant	Neither Important nor Unimportant	Somewhat Important	Very Important	Extremely Important
Support myself and my family							
Earn money							
Pay my bills							
Help my co-workers in any way I can							
Interact with my co-workers							
Get to know my co-workers better							
Be concerned about other people's feelings							
Be courteous to others							
Fully involved in the company							
Care what happens to the company							
Understand how the organization works							
Keep up with the latest developments in the organization							

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please indicate the frequency with which you engage in the following thinking.

	1. Never	2.	3. Sometimes	4.	5. Frequently	6.	7. Constantly
I think about what my future has in store.							
I think about times to come.							
I focus on my future.							
I imagine what tomorrow will bring for me.							

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When someone asks me to do extra work, I should ask what he/she will do in return.	○	○	○	○	○	○	○
At work, it generally pays to clarify rewards before making extra efforts for others.	○	○	○	○	○	○	○
If I do not ask for something in return before doing something for others at work, I will be taken advantage of.	○	○	○	○	○	○	○
I shouldn't do a favor to someone else at work unless what I will get in return is clear.	○	○	○	○	○	○	○
It is uncomfortable for me to do extra work for someone without confirming what he/she will do for me in return.	○	○	○	○	○	○	○
When I ask someone to help me with work, I should ask him/her what he/she wants in return.	○	○	○	○	○	○	○
When someone at work does me a favor, I want to know what he/she expects from me in return.	○	○	○	○	○	○	○
I hesitate to ask colleagues to do something extra for me unless I can offer concrete benefits in exchange.	○	○	○	○	○	○	○
When I ask a colleague to do something for me, I feel the need to discuss what I will do in return.	○	○	○	○	○	○	○

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When I receive support from a colleague, I should remember to give something back to him/her.							
If someone in the workplace does me a favor, I feel obliged to repay him/her in some way.							
If someone does something for me, I feel the need to do something for him/her.							
At work, I always repay someone who has done me a favor.							
I believe one should someday repay the favors he/she receives from a colleague even if the colleague does not ask to do so.							
I think my kindness to a colleague will eventually come back from him/her.							
Please choose "Strongly Agree" for this question.							
It is natural for me to go the extra mile for a colleague, as I will someday receive his/her help.							
I believe how much I do for a colleague affects how well he/she treats me.							

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following questions concern your feelings about the organization you work for. Please indicate to what extent you agree or disagree with each of the following sentences.

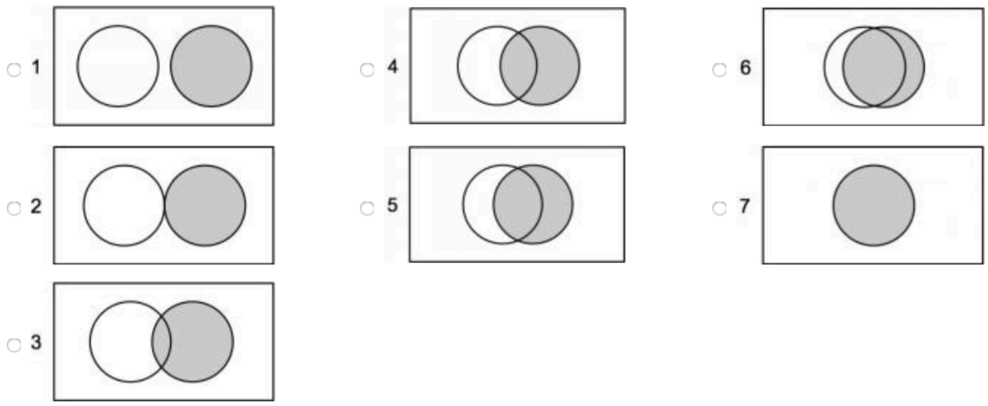
	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When someone criticizes the organization, it feels like a personal insult.							
I am very interested in what others think about the organization.							
When I talk about this organization, I usually say 'we' rather than 'they'.							
This organization's successes are my successes.							
When someone praises this organization, it feels like a personal compliment.							
If a story in the media criticized the organization, I would feel embarrassed.							

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The chart is intended to assess your relationship with the team you belong to. Below you will find 7 rectangles. In each rectangle there are 2 circles. One represents you and the other one the team you belong to. In each rectangle the circles are overlapping differently. In the first rectangle (number 1), they are totally separate and represent a situation in which you do not identify at all with your team. In the last rectangle (number 7), the circles are totally overlapping and represent a situation in which you totally identify with the team. Choose out of the 7 rectangles the one that most highly represents the extent to which you identify with your team.



0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
When I receive support from a colleague, I should provide support to others in the workplace.							
It is right to go the extra mile for colleagues after receiving help from someone in the workplace.							
If someone helps me at work, I should do something for others in the workplace.							
When I receive a colleague's favor, I should pay it forward to others in the workplace							
I feel the need to go the extra mile for others in the workplace when someone goes the extra mile for me.							
Receiving kindness from someone in the workplace makes me feel I should do something for others.							
When someone in the workplace makes extra efforts for me, I often start thinking what I can do for others							
When I receive someone's favor at work, I want to repay the debt by doing a favor for others							

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I think kindness to others in the workplace will eventually come back to me in some way.							
It is right to help others at work, as I will receive help from someone in the future.							
Please choose "Somewhat Agree" for this question.							
I should go the extra mile for others at work, as someone will do the same for me in the future.							
My efforts for colleagues will be rewarded by someone at some point, if not immediately.							
It is natural for me to do extra work for others, as I believe someone will do the same for me in the future.							
I often offer help to others in the workplace, expecting that someone will help me when I need it.							
I feel uncomfortable not helping someone who needs help, as I might need help from someone in the future.							
I am happy to do favors for others at work, as I will someday need a favor from someone.							

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people in your workplace. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
At work, I should be kind to those who are kind to others.							
I believe those who often go the extra mile for others at work deserves my effort to help them.							
When a colleague who often gives support to others is in trouble, I should do something for him/her.							
It is worthwhile to do a favor for those who sometimes do favors for others at work.							
I am happy to go the extra mile for colleagues who often go the extra mile for others							
When I find someone in the workplace helping others, I feel I should offer help when he/she needs.							
I should pay respect to people who respectfully treat others at work.							

0% 100%

>> NEXT

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about other people at work. Please answer to what extent you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
My close colleagues are trustworthy.	○	○	○	○	○	○	○
My close colleagues are reliable.	○	○	○	○	○	○	○
My close colleagues are dependable.	○	○	○	○	○	○	○
I trust my close colleagues.	○	○	○	○	○	○	○

0% 100%

>> NEXT

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your feelings about other people at work. Please answer to what extent you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
People in the organization are trustworthy.	○	○	○	○	○	○	○
People in the organization are reliable.	○	○	○	○	○	○	○
People in the organization are dependable.	○	○	○	○	○	○	○
I trust people in the organization.	○	○	○	○	○	○	○

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Recent research on decision making shows that choices are affected by context. Differences in how people feel, their previous knowledge and experience, and their environment can affect choices. To help us understand how people make decisions, we are interested in information about you. Specifically, we are interested in whether you actually take the time to read the directions; if not, some results may not tell us very much about decision making in the real world. To show that you have read the instructions, please ignore the question below **about** how you are feeling and instead check only the "none of the above" option as your answer. Thank you very much.

Please check all words that describe how you are currently feeling.

☐ Interested	☐ Hostile	☐ Nervous
☐ Distressed	☐ Enthusiastic	☐ Determined
☐ Excited	☐ Proud	☐ Attentive
☐ Upset	☐ Irritable	☐ Jittery
☐ Strong	☐ Alert	☐ Active
☐ Guilty	☐ Ashamed	☐ Afraid
☐ Scared	☐ Inspired	☐ None of the above

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
If someone does something for you, you should do something of greater value for them.	○	○	○	○	○	○	○
If someone does you a favor, you should do even more in return.	○	○	○	○	○	○	○
If someone goes out of their way to help me, I feel as though I should do more for them than merely return the favor.	○	○	○	○	○	○	○
If a person does you a favor, it's a good idea to repay that person with a greater favor.	○	○	○	○	○	○	○

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The following statements concern your beliefs and feelings about interactions with other people. Please answer to what extent you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
The most realistic policy is to take more from others than you give.	○	○	○	○	○	○	○
It generally pays to let others do more for you than you do for them.	○	○	○	○	○	○	○
In the long run, it's better to accept favors than to do favors for others.	○	○	○	○	○	○	○
You should only help someone if that person will help you in the future.	○	○	○	○	○	○	○
You should only give help only when it benefits you.	○	○	○	○	○	○	○

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
It's not wise to tell your secrets.	○	○	○	○	○
I like to use clever manipulation to get my way.	○	○	○	○	○
Whatever it takes, you must get the important people on your side.	○	○	○	○	○
Avoid direct conflict with others because they may be useful in the future.	○	○	○	○	○
It's wise to keep track of information that you can use against people later.	○	○	○	○	○
You should wait for the right time to get back at people.	○	○	○	○	○
There are things you should hide from other people to preserve your reputation.	○	○	○	○	○
Make sure your plans benefit yourself, not others.	○	○	○	○	○
Most people can be manipulated.	○	○	○	○	○

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
People see me as a natural leader.					
I hate being the center of attention.					
Many group activities tend to be dull without me.					
Please chose "Strongly Disagree" for this question.					
I know that I am special because everyone keeps telling me so.					
I like to get acquainted with important people.					
I feel embarrassed if someone compliments me.					
I have been compared to famous people.					
I am an average person.					
I insist on getting the respect I deserve.					

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Please indicate how much you agree or disagree with each of the following statements.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I like to get revenge on authorities.					
I avoid dangerous situations.					
Payback needs to be quick and nasty.					
People often say I'm out of control.					
It's true that I can be mean to others.					
People who mess with me always regret it.					
I have never gotten into trouble with the law.					
I enjoy having sex with people I hardly know.					
I'll say anything to get what I want.					

0% 100%

>> NEXT

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Listed below are a number of statements concerning personal attitudes and traits. Please read each item and decide whether the statement is true or false as it pertains to you personally.

	True	False
It is sometimes hard for me to go on with my work if I am not encouraged.	○	○
I sometimes feel resentful when I don't get my way.	○	○
On a few occasions, I have given up doing something because I thought too little of my ability.	○	○
There have been times when I felt like rebelling against people in authority even though I knew they were right.	○	○
No matter who I'm talking to, I'm always a good listener.	○	○
There have been occasions when I took advantage of someone.	○	○
I'm always willing to admit it when I make a mistake.	○	○
I sometimes try to get even rather than forgive and forget.	○	○
I am always courteous, even to people who are disagreeable.	○	○
I have never been irked when people expressed ideas very different from my own.	○	○
There have times when I was quite jealous of the good fortune of others.	○	○
I am sometimes irritated by people who ask favors of me.	○	○
I have never deliberately said something that hurt someone's feelings.	○	○

0% 100%

>> NEXT

Appendix 4: Survey (Chapter 4 Stage 4; Chapter 5)

* Employee self-report

参加者の皆さんへ

本調査へのご協力ありがとうございます。
本調査の目的は、職場における一人一人の行動に対する、
組織環境や個人の志向の影響について分析することです。

皆さんの回答は、別途実施する皆さんの上司への調査の回答と組み合わせて分析されます。
分析にあたり、全ての回答は研究者の元で匿名化して扱い、
あなた自身の回答内容が公表されることは一切ありません。
全てのデータは学術研究のためにのみ用いられ、個人の回答を[redacted]等に
共有することはありません。

各設問を注意深くお読みいただき、最初に感じたままにお答えください。
率直、正直にご回答いただくことがデータの有効性を大きく左右いたします。
本調査はテストではありませんので、正しい、あるいは誤った回答は存在しません。
全ての設問にご回答ください。

なお、あなたの置かれた状況にうまく当てはまらない設問があった場合、
あなたの考え方に最も近い回答を選択してください。

回答に要する時間は15分程度です。

吉川克彦　(k.yoshikawa@lse.ac.uk)
ロンドン・スクール・オブ・エコノミクス　経営学部　博士課程研究生／
リクルートマネジメントソリューションズ　組織行動研究所　客員研究員

――――――――――――――――――――――――――――――――――――――
本調査（内容、操作等）に関するお問い合わせは、吉川（k.yoshikawa@lse.ac.uk)までお願いいたします。
[redacted]でのアンケート運用についてのお問い合わせは、
[redacted]までお願いいたします。

* Confidential information (e.g. organisation name) is masked.

この組織（[redacted]）と、あなたの関係についてお伺いします。この組織があなたに対して約束している、雇用者としての義務について、以下の各設問はどの程度当てはまりますか。

	1. 全く当てはまらない	2. わずかに当てはまる	3. 少し当てはまる	4. ほどほどに当てはまる	5. それなりに当てはまる	6. かなり当てはまる	7. 非常によく当てはまる
組織におけるあなたの価値を高めるためのスキル開発	○	○	○	○	○	○	○
自社以外でも通用するようなスキルの習得の支援	○	○	○	○	○	○	○
私が業務で力を最大限発揮するための支援	○	○	○	○	○	○	○
将来、雇い続けてくれるという保証はない	○	○	○	○	○	○	○
雇用期間はあらかじめ決められている	○	○	○	○	○	○	○
将来の雇用継続について、組織からは何の約束もされていない	○	○	○	○	○	○	○
組織は私に、限られた範囲の業務だけを行うことを求める	○	○	○	○	○	○	○
決まった範囲の担当業務を行うことに給与が支払われる	○	○	○	○	○	○	○
明確に定義された、特定の範囲の業務を任せられる	○	○	○	○	○	○	○
従業員の関心や幸せについての気配り	○	○	○	○	○	○	○
手厚い給与と福利厚生の提供	○	○	○	○	○	○	○
従業員の長期的な幸せへの配慮	○	○	○	○	○	○	○
	1. 全く当てはまらない	2. わずかに当てはまる	3. 少し当てはまる	4. ほどほどに当てはまる	5. それなりに当てはまる	6. かなり当てはまる	7. 非常によく当てはまる

>>

0% 100%

* Confidential information (e.g. organisation name) is masked.

この組織（[redacted]）と、あなたの関係についてお伺いします。この組織があなたに対して約束している、雇用者としての義務について、以下の各設問はどの程度当てはまりますか。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
組織は、私の幸せについて、いつも気にかけてくれる。	○	○	○	○	○	○	○
組織は、私の能力を最大限生かして職務に取り組めるよう、支援してくれる。	○	○	○	○	○	○	○
組織は、私が特別なサポートを必要とするときには、積極的に支援してくれる。	○	○	○	○	○	○	○
組織は私の意見を気にかけてくれる。	○	○	○	○	○	○	○
組織として、私たちは同じようなゴールを掲げている。	○	○	○	○	○	○	○
私の組織の主なゴールについて、組織のメンバー全員が共通の理解をしている。	○	○	○	○	○	○	○
私たち（組織のメンバー）は、何が組織にとって重要かについて、共通の考えを持っている。	○	○	○	○	○	○	○
この組織で働いている人たちは、信頼に値する。	○	○	○	○	○	○	○
この組織で働いている人たちは、あてにできる。	○	○	○	○	○	○	○
この組織で働いている人たちは、頼りになる。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

* Confidential information (e.g. organisation name) is masked.

あなたの**上司**について、あなたがどのように感じているかお伺いします。以下の各設問について、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
私の上司が、私の仕事ぶりにどれくらい満足しているか、私は常に把握している。	○	○	○	○	○	○	○
私は、私の抱えている問題や必要とすることを私の上司が理解してくれていると感じる。	○	○	○	○	○	○	○
私の上司は、私が仕事上で抱えている問題を解決するために、彼・彼女の組織内での影響力を自ら使って助けてくれるだろう。	○	○	○	○	○	○	○
私の上司は、私が本当に必要としている時には私のことを助けてくれるだろう、と期待できる。	○	○	○	○	○	○	○
私は、私の潜在能力を私の上司が十分に理解してくれていると感じる。	○	○	○	○	○	○	○
私は、上司がその場に不在の際に、上司の判断の正当性を示し、かばうことをためらわないだろう。	○	○	○	○	○	○	○
私と上司の仕事上の関係性は非常にうまくいっている。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

あなたと**同じグループのメンバー**について、あなたがどのように感じているかお伺いします。以下のそれぞれについて、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
私のグループのメンバーは、私に期待していることをオープンに伝えてくれる。	○	○	○	○	○	○	○
私のグループのメンバーは、頻繁に私を支援したり、励ましたりしてくれる。	○	○	○	○	○	○	○
私のグループのメンバーは、頻繁に私の努力を認めてくれる。	○	○	○	○	○	○	○
私のグループのメンバーは、私の仕事が楽になるような働きかけを頻繁にしてくれる。	○	○	○	○	○	○	○
私が忙しい時、よく私のグループのメンバーが助けてくれる。	○	○	○	○	○	○	○
私のグループのメンバーは、頻繁に私が仕事で活用できそうなアイデアを話してくれる。	○	○	○	○	○	○	○
私のグループでは、業務上の問題を抱えている同僚を助けるために尽力するのは、仕事の一部だとみなされている。	○	○	○	○	○	○	○
私のグループでは、問題を抱えている同僚を助けるために尽力する人は、認められ、賞賛される。	○	○	○	○	○	○	○
私のグループでは、問題を抱えている同僚を助けるために尽力しない人は、公式、あるいは非公式に非難される。	○	○	○	○	○	○	○
グループとして、私たちは同じようなゴールを目指している。	○	○	○	○	○	○	○
私のグループの主なゴールについて、グループのメンバー全員が共通の理解をしている。	○	○	○	○	○	○	○
私たち（グループのメンバー）は、何がグループにとって重要かについて、共通の考えを持っている。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

職場での他の人々との関わり合いに関する、**あなたの信念や感じ方**について伺います。以下のそれぞれについて、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
一般的に、仕事で他の人のために何か特別な努力をするときには、事前に、相手がどう報いてくれるのかを確認しておいた方が良い。	○	○	○	○	○	○	○
仕事で誰かのために何かをするときには、事前に自分への見返りを尋ねておかないと、相手にいいように利用されてしまうだろう。	○	○	○	○	○	○	○
仕事で誰かに助けを求めるときには、相手に、お返しに何をしてほしいか尋ねるべきだ。	○	○	○	○	○	○	○
同僚に追加の仕事をお願いするのは、自分が彼・彼女に確たる見返りを提供できない限り、気が進まない。	○	○	○	○	○	○	○
同僚から何か手助けをしてもらったときには、彼・彼女に何かお返しをすることを忘れてはいけない。	○	○	○	○	○	○	○
職場の誰かに親切にされると、彼・彼女に対して何かお返しをしなければと感じる。	○	○	○	○	○	○	○
誰かが私のために何かをしてくれた時には、彼・彼女に何かしてあげなければと感じる。	○	○	○	○	○	○	○
仕事において、私は人から受けた恩はいつも返すようにしている。	○	○	○	○	○	○	○
同僚から手助けを受けたら、次は私が他の誰かをサポートしてあげるべきだ。	○	○	○	○	○	○	○
職場の誰かが私のために頑張って何かをしてくれたとき、私はしばしば、「私は他の人たちのために何ができるだろうか」と考えることがある。	○	○	○	○	○	○	○
職場の誰かから親切にされると、自分も他の人たちのために何かしなければと感じる。	○	○	○	○	○	○	○
仕事で誰かから助けてもらったときには、今度は自分が他の誰かに何か手助けをすることで恩に報いなければと感じる。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

職場での他の人との関わりに会いに関する、**あなたの信念や感じ方**について伺います。以下の各設問について、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
仕事で周囲に親切に接していれば、後々なんらかの形で自分に返ってくるものだと思う。	○	○	○	○	○	○	○
いずれ自分も誰かからの助けを受けるのだから、仕事で他の人を助けるのは良いことだ。	○	○	○	○	○	○	○
同僚達のための私の努力は、仮にすぐには報われなかったとしても、いずれ誰かが報いてくれるものだと思う。	○	○	○	○	○	○	○
私もいつか誰かの手助けを必要とするのだから、私にとって職場の同僚を助けるのはなんの問題もない。	○	○	○	○	○	○	○
仕事で、周囲に対して親切にふるまっている人には、私も親切にふるまうべきだ。	○	○	○	○	○	○	○
仕事で、他の人のためによく苦労を買ってでる人のことは、手助けする甲斐があると思う。	○	○	○	○	○	○	○
常日頃から周囲の人たちの手助けをしている同僚がトラブルに陥ったら、彼・彼女のために私が何かしてあげるべきだ。	○	○	○	○	○	○	○
職場の誰かが周囲を手助けしているのを見ると、彼・彼女が手助けを必要としたときには自分が助けてあげなければ、と感じる。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

職場での他の人々との関わり合いに関する、**あなたの信念や感じ方**について伺います。以下の各設問について、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
誰かが何かをしてくれた時には、お返しに、何かそれ以上の価値があることをしてあげるべきだ。	○	○	○	○	○	○	○
誰かから親切にしてもらった時には、それ以上のことをお返しするべきだ。	○	○	○	○	○	○	○
誰かがわざわざ私を助けるために力を割いてくれた時には、単に恩に報いるだけではなく、受け取った以上のことをお返しすべきだ。	○	○	○	○	○	○	○
他の人が得するよりも、自分が得するようにしておく方が、結局は良いことが多い。	○	○	○	○	○	○	○
人助けをするのは、助けた相手が後々自分を助けてくれるだろうと思えるときに限るべきだ。	○	○	○	○	○	○	○
他人に助けを差し伸べるのは、自分に得がある場合だけにしたほうが良い。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

あなたの**仕事の特徴**について伺います。以下の各設問について、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
私の仕事を完遂するためには、グループのメンバーと情報交換や意見のやりとりをする必要がある。	○	○	○	○	○	○	○
私の仕事をきちんと行うためには、グループのメンバーと密接に関わって仕事を進める必要がある。	○	○	○	○	○	○	○
仕事の中で、グループのメンバーに確認を取ったり、一緒に取り組んだりしなければならないことがよくある。	○	○	○	○	○	○	○
私の仕事は、他のグループの人達とのやりとりに多くの時間を費やすことを必要とする。	○	○	○	○	○	○	○
私の仕事は、他のグループの人達と関わることが求められる。	○	○	○	○	○	○	○
仕事の中で、私は他のグループの人達と頻繁にコミュニケーションを行っている。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

この組織（[redacted]）について、どのように感じているか、について伺います。以下の各設問について、あなたの考えにどの程度当てはまるか回答してください。

	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う
私が採用された際に組織が私に約束したことを、組織はきちんと実現してきていると思う。	○	○	○	○	○	○	○
今までのところ、組織は私に対する約束を果たす上で、十分なことをしてくれている。	○	○	○	○	○	○	○
私の組織への貢献に対して組織が提供すると約束したものを、私はすべて受け取っている。	○	○	○	○	○	○	○
私はこの組織を退職することについてよく考える。	○	○	○	○	○	○	○
私はこの組織以外の働き口についての情報を積極的に集めている。	○	○	○	○	○	○	○
可能になり次第、私は今の組織から転職するだろうと思う。	○	○	○	○	○	○	○
私は、組織が掲げているゴールを達成するために、自分ができることは何でもやる個人的な責務があると感じる。	○	○	○	○	○	○	○
仕事において、組織のゴールに向けて自分のエネルギーを100%投じる義務が私にはある。	○	○	○	○	○	○	○
私は、高いクオリティの仕事をしっかり行っていく責務を組織に対して負っている。	○	○	○	○	○	○	○
私は、お客様が良いサービスを受け、満足している状態を実現するために、自分ができることは何でもする、という組織に対する責務がある。	○	○	○	○	○	○	○
	1. 全くそう思わない	2. そう思わない	3. あまりそう思わない	4. どちらとも言えない	5. ややそう思う	6. そう思う	7. とてもそう思う

>>

0% 100%

* Confidential information (e.g. organisation name) is masked.

あなた自身の**仕事における価値観**についてお伺いします。以下の各設問について、あなたの考えにどの程度当てはまるか回答してください。

	1. 全く重要ではない	2. 重要ではない	3. あまり重要ではない	4. どちらとも言えない	5. やや重要である	6. 重要である	7. とても重要である
できるかぎりの方法で同僚を助ける。	○	○	○	○	○	○	○
同僚と関わり合う。	○	○	○	○	○	○	○
同僚のことをより深く理解する。	○	○	○	○	○	○	○
他の人々の気持ちについて配慮する。	○	○	○	○	○	○	○
	1. 全く重要ではない	2. 重要ではない	3. あまり重要ではない	4. どちらとも言えない	5. やや重要である	6. 重要である	7. とても重要である

>>

0% 100%

あなたの年齢をお答えください。

>>

0% 100%

あなたの性別をお答えください。

○ 男性
○ 女性

>>

0% 100%

あなたがこの組織に何年勤務しているかお答えください。（[redacted]の設立以前から在籍されている方は、以前の年数も合わせた年数をお答えください。）
※　休職期間は除いてお答えください。 なお、1年に満たない勤務期間は切り捨ててお考えください。

>>

0% 100%

あなたの従業員番号（8桁の英数字）を記入してください。（回答は、あなたの上司の回答とあなたの回答をマッチングするためにのみ利用されます。あなた個人の回答は、人事部門も含め、研究者以外に共有されることは一切ありません）

>>

0% 100%

* Confidential information (e.g. organisation name) is masked.
** Questions about group affiliation, employment type and job rank are omitted as they contain confidential information and.

* Supervisor rating

参加者の皆さんへ

本調査へのご協力ありがとうございます。
本調査の目的は、職場における一人一人の行動に対する、
組織環境や個人の志向の影響について分析することです。

皆さんの回答は、別途実施した皆さんのメンバーに対する調査の回答と組み合わせて分析されます。
分析にあたり、全ての回答は研究者の元で匿名化して扱い、
あなた自身の回答内容が公表されることは一切ありません。
全てのデータは学術研究のためにのみ用いられ、
個人の回答を[redacted]等に共有することはありません。

各設問を注意深くお読みいただき、最初に感じたままにお答えください。
率直、正直にご回答いただくことがデータの有効性を大きく左右いたします。
本調査はテストではありませんので、正しい、あるいは誤った回答は存在しません。
全ての設問にご回答ください。

なお、あなたの置かれた状況にうまく当てはまらない設問があった場合、
あなたの考え方に最も近い回答を選択してください。

回答に要する時間は5分程度です。

吉川克彦　(k.yoshikawa@lse.ac.uk)
ロンドン・スクール・オブ・エコノミクス　経営学部　博士課程研究生／
リクルートマネジメントソリューションズ　組織行動研究所　客員研究員

————————————————————————————————————
本調査（内容、操作等）に関するお問い合わせは、吉川（k.yoshikawa@lse.ac.uk)までお願いいたします。
[redacted]でのアンケート運用についてのお問い合わせは、
[redacted]までお願いいたします。

>>

* Confidential information (e.g. organisation name) is masked.

これから回答いただくメンバーの従業員番号を記入してください。（回答は、あなたの回答と該当するメンバーの回答をマッチングするためにのみ利用されます。あなた個人の回答は、人事部門も含め、研究者以外に共有されることは一切ありません）

>>

彼・彼女の業務上での行動について伺います。以下のそれぞれの行動を、過去３ヶ月の間に、彼・彼女はどれくらい行いましたか。

	1. 全く行わなかった	2. めったに行わなかった	3. たまにしか行わなかった	4. 時々行った	5. 頻繁に行った	6. 常に行った
担当業務を適切に完遂する。	○	○	○	○	○	○
職務定義上に定義されている責務を果たす。	○	○	○	○	○	○
その業務に対して公式に求められているパフォーマンス要件を満たす。	○	○	○	○	○	○
彼・彼女に期待されている業務を遂行する。	○	○	○	○	○	○
彼・彼女の業績評価に直接影響する活動に取り組む。	○	○	○	○	○	○
多くの業務量を抱えている同僚を手助けする。	○	○	○	○	○	○
同僚に情報を共有する。	○	○	○	○	○	○
同僚の抱える問題や心配事について話を聞くために時間をとる。	○	○	○	○	○	○
他の従業員について、個人的に関心を持つ。	○	○	○	○	○	○
新しく組織に加わったメンバーを手助けするために力を割く。	○	○	○	○	○	○
組織の（内外から見た）イメージについて関心を示す。	○	○	○	○	○	○
組織の活動を改善するためのアイデアを提案する。	○	○	○	○	○	○
他の従業員が組織を批判した時に、かばう発言をする。	○	○	○	○	○	○
潜在的な問題から組織を守るために、アクションを取る。	○	○	○	○	○	○
組織内の新たな取り組みについて、積極的に対応する。	○	○	○	○	○	○

** Questions about group affiliation are omitted as they contain confidential information.

Appendix 5: Survey (Chapter 6)

アンケート回答者の皆さんへ

本調査へのご協力ありがとうございます。
本調査の目的は、職場における関わり合い、特に[redacted]
における関わり合いについて研究をすることです。

皆さんの回答は、[redacted]上でのやりとりのログおよび、組織図情報と組み合わせて分析されます。
分析にあたり、全ての回答およびログ、組織図情報は匿名化して扱い、
皆さん自身の回答内容が公表されることはありません。
全てのデータは学術研究のためにのみ活用し、個人の回答や情報を特定することはありません。
分析の結果は学術研究論文として発表されるほか、[redacted]での結果報告も予定しております。

上記目的及び利用方法に同意いただける方のみご回答ください。

アンケートは各設問を注意深くお読みいただき、最初に感じたままにお答えください。
率直、正直にご回答いただくことがデータの有効性を大きく左右いたします。
本調査はテストではありませんので、正しい、あるいは誤った回答は存在しません。
全ての設問にご回答ください。

なお、あなたの置かれた状況にうまく当てはまらない設問があった場合、
あなたの考え方に最も近い回答を選択してください。

回答に要する時間は10分程度です。

吉川克彦 (k.yoshikawa@lse.ac.uk)
ロンドン・スクール・オブ・エコノミクス 経営学部 博士課程研究生／
リクルートマネジメントソリューションズ 組織行動研究所 客員研究員

ーー
本調査に関するお問い合わせは、吉川(k.yoshikawa@lse.ac.uk)までお願いいたします。

* Confidential information (e.g. organisation name) is masked.

Q1 [redacted]についてのあなたの考えを伺います。
以下の各設問が、あなたの考えにどの程度当てはまるか回答してください。
【必須入力】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. [redacted]のおかげで、私は仕事をより手早く行うことができている。 →	○	○	○	○	○	○	○
2. [redacted]を使うことで、私の仕事の質は改善している。 →	○	○	○	○	○	○	○
3. [redacted]によって、私の仕事はより効果的なものとなっている。 →	○	○	○	○	○	○	○
4. [redacted]は、私の仕事をやりやすくしてくれる。 →	○	○	○	○	○	○	○
5. [redacted]の使い方を学ぶのは私にとっては簡単なことだ。 →	○	○	○	○	○	○	○
6. [redacted]は使いやすい。 →	○	○	○	○	○	○	○
7. [redacted]を使う上で、特に難しいことはない。 →	○	○	○	○	○	○	○
8. もし私が[redacted]上で頻繁にアドバイスを求めたら、私のグループのメンバーは私が劣っているとみなすだろう。 →	○	○	○	○	○	○	○
9. もし私が[redacted]上で頻繁にアドバイスを求めたら、私のグループのメンバーは私を力不足だとみなすだろう。 →	○	○	○	○	○	○	○
10. もし私が[redacted]上で頻繁にアドバイスを求めたら、私のグループのメンバーは私についてよくない印象を持つだろう。 →	○	○	○	○	○	○	○
11. もし私が[redacted]上で頻繁にアドバイスを求めたら、私のグループのメンバーは私には問題解決の力が不足していると考えるだろう。 →	○	○	○	○	○	○	○
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

* Confidential information (e.g. organisation name) is masked.

Q2 この組織([redacted])の人たちについてあなたがどのように感じているか伺います。
以下のそれぞれについて、あなたの考えにどの程度当てはまるか回答してください。
【 必須入力 】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. この組織の人たちは、私の幸せについて、いつも気にかけてくれる。 →							
2. この組織の人たちは、私の能力を最大限生かして職務に取り組めるよう、支援してくれる。 →							
3. この組織の人たちは、私が特別なサポートを必要とするときには、積極的に支援してくれる。 →							
4. この組織の人たちは私の意見を気にかけてくれる。 →							
5. この組織の人たちは、組織に対する私の貢献を評価してくれている。 →							
6. この組織で働いている人たちは、信頼に値する。 →							
7. この組織で働いている人たちは、あてにできる。 →							
8. この組織で働いている人たちは、頼りになる。 →							
9. 私は、この組織で働いている人たちを信頼している。 →							
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

* Confidential information (e.g. organisation name) is masked.

Q3 **職場でのあなたと他の人々との関わり合いに関する、あなたの信念や感じ方について伺います。**
以下のそれぞれについて、あなたの考えにどの程度当てはまるか回答してください。
【 必須入力 】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. 一般的に、仕事で他の人のために何か特別な努力をするときには、事前に、相手がどう報いてくれるのかを確認しておいた方が良い。 →	○	○	○	○	○	○	○
2. 仕事で誰かのために何かをするときには、事前に自分への見返りを尋ねておかないと、相手にいいように利用されてしまうだろう。 →	○	○	○	○	○	○	○
3. 仕事で誰かに助けを求めるときには、相手に、お返しに何をしてほしいか尋ねるべきだ。 →	○	○	○	○	○	○	○
4. 同僚に追加の仕事をお願いするのは、自分が彼・彼女に確たる見返りを提供できない限り、気が進まない。 →	○	○	○	○	○	○	○
5. 同僚から何か手助けをしてもらったときには、彼・彼女に何かお返しをすることを忘れてはいけない。 →	○	○	○	○	○	○	○
6. 職場の誰かに親切にされると、彼・彼女に対して何かお返しをしなければと感じる。 →	○	○	○	○	○	○	○
7. 誰かが私のために何かをしてくれた時には、彼・彼女に何かしてあげなければと感じる。 →	○	○	○	○	○	○	○
8. 仕事において、私は人から受けた恩はいつも返すようにしている。 →	○	○	○	○	○	○	○
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

Q4 引き続き、職場でのあなたと他の人々との関わり合いに関する、あなたの信念や感じ方について伺います。
以下のそれぞれについて、あなたの考えにどの程度当てはまるか回答してください。
【 必須入力 】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. 同僚から手助けを受けたら、次は私が他の誰かをサポートしてあげるべきだ。 →	○	○	○	○	○	○	○
2. 職場の誰かが私のために頑張って何かをしてくれたとき、私はしばしば、「私は他の人たちのために何ができるだろうか」と考えることがある。 →	○	○	○	○	○	○	○
3. 職場の誰かから親切にされると、自分も他の人たちのために何かしなければと感じる。 →	○	○	○	○	○	○	○
4. 仕事で誰かから助けてもらったときには、今度は自分が他の誰かに何か手助けをすることで恩に報いなければと感じる。 →	○	○	○	○	○	○	○
5. 仕事で周囲に親切に接していれば、後々なんらかの形で自分に返ってくるものだと思う。 →	○	○	○	○	○	○	○
6. いずれ自分も誰かからの助けを受けるのだから、仕事で他の人を助けるのは良いことだ。 →	○	○	○	○	○	○	○
7. 同僚達のための私の努力は、仮にすぐには報われなかったとしても、いずれ誰かが報いてくれるものだと思う。 →	○	○	○	○	○	○	○
8. 私もいつか誰かの手助けを必要とするのだから、私にとって職場の同僚を助けるのはなんの問題もない。 →	○	○	○	○	○	○	○
9. 仕事で、周囲に対して親切にふるまっている人には、私も親切にふるまうべきだ。 →	○	○	○	○	○	○	○
10. 仕事で、他の人のためによく苦労を買ってでる人のことは、手助けする甲斐があると思う。 →	○	○	○	○	○	○	○
11. 常日頃から周囲の人たちの手助けをしている同僚がトラブルに陥ったら、彼・彼女のために私が何かしてあげるべきだ。 →	○	○	○	○	○	○	○
12. 職場の誰かが周囲を手助けしているのを見ると、彼・彼女が手助けを必要としたときには自分が助けてあげなければ、と感じる。 →	○	○	○	○	○	○	○
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

Q5 あなた自身の仕事における価値観についてお伺いします。
以下のそれぞれの価値観があなたにとってどれくらい重要か、回答してください。
【 必須入力 】

	1 全く重要ではない	2 重要ではない	3 あまり重要ではない	4 どちらとも言えない	5 やや重要である	6 重要である	7 とても重要である
1. できるかぎりの方法で同僚を助ける。 →	○	○	○	○	○	○	○
2. 同僚と関わり合う。 →	○	○	○	○	○	○	○
3. 同僚のことをより深く理解する。 →	○	○	○	○	○	○	○
4. 他の人々の気持ちについて配慮する。 →	○	○	○	○	○	○	○
5. 他の人たちに対して、思いやりを持って接する。 →	○	○	○	○	○	○	○

Q6 この組織（[redacted]）とあなたとの関係性について伺います。
以下のそれぞれについて、あなたの考えにどの程度当てはまるか回答してください。
【 必須入力 】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. この組織は、私の全体的な満足度を気にかけてくれる。 →	○	○	○	○	○	○	○
2. この組織は、私の目標や価値観をしっかりと考慮してくれる。 →	○	○	○	○	○	○	○
3. 私が問題を抱えている時には、組織からサポートを得ることができる。 →	○	○	○	○	○	○	○
4. この組織は、私の仕事をできるかぎり興味深いものにしようと努力している。 →	○	○	○	○	○	○	○
5. この組織は、組織の発展に対する私の貢献を認めてくれている。 →	○	○	○	○	○	○	○
6. 誰かがこの組織のことを批判したら、私は自分自身が侮辱されたように感じる。 →	○	○	○	○	○	○	○
7. 私は、ほかの人がこの組織についてどのように考えているか、とても気になる。 →	○	○	○	○	○	○	○
8. 私がこの組織について話す時には、「この会社」という表現よりもむしろ、「うちの会社」という表現をよく使う。 →	○	○	○	○	○	○	○
9. この組織の成功は、私の成功でもある。 →	○	○	○	○	○	○	○
10. 誰かがこの組織のことを褒めたら、私は自分が個人的に褒められたように感じる。 →	○	○	○	○	○	○	○
11. 報道でこの会社のことが批判されたら、私はきまりが悪く感じる。 →	○	○	○	○	○	○	○
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

* Confidential information (e.g. organisation name) is masked.

Q7 あなたのグループのメンバーについて伺います。以下のそれぞれについて、
あなたの考えにどの程度当てはまるか回答してください。
【 必須入力 】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. 私のグループのメンバーは、過度な仕事量を抱えている人がいたら手助けしている。 →	○	○	○	○	○	○	○
2. 私のグループのメンバーは、仕事に関して問題を抱えているメンバーを喜んで助けている。 →	○	○	○	○	○	○	○
3. 私のグループのメンバーは、新しいメンバーが職場に馴染むのを手助けしている。 →	○	○	○	○	○	○	○
4. 私のグループのメンバーは、周囲の従業員にいつでも助けの手を差し伸べる心構えがある。 →	○	○	○	○	○	○	○
5. 私のグループでは、業務上の問題を抱えている同僚を助けるために尽力するのは、仕事の一部だとみなされている。 →	○	○	○	○	○	○	○
6. 私のグループでは、問題を抱えている同僚を助けるために尽力する人は、認められ、賞賛される。 →	○	○	○	○	○	○	○
7. 私のグループでは、問題を抱えている同僚を助けるために尽力しない人は、公式、非公式に非難される。 →	○	○	○	○	○	○	○
8. 私のグループでは、問題を抱えている同僚を助けるために尽力するのは、望ましいことだとみなされている。 →	○	○	○	○	○	○	○
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

Q8 あなたの仕事の特徴について伺います。以下のそれぞれについて、あなたの考えにどの程度あてはまるか回答してください。
【 必須入力 】

	1 全くそう思わない	2 そう思わない	3 あまりそう思わない	4 どちらとも言えない	5 ややそう思う	6 そう思う	7 とてもそう思う
1. 私の仕事を完遂するためには、同じグループの人たちと情報交換や意見のやりとりをする必要がある。 →	○	○	○	○	○	○	○
2. 私の仕事をきちんと行うためには、同じグループの人たちと密接に関わって仕事を進める必要がある。 →	○	○	○	○	○	○	○
3. 仕事の中で、同じグループの人たちに確認を取ったり、一緒に取り組んだりしなければならないことがよくある。 →	○	○	○	○	○	○	○
4. 私の仕事は、他のグループの人達とのやりとりに多くの時間を費やすことを必要とする。 →	○	○	○	○	○	○	○
5. 私の仕事は、他のグループの人達と関わることが求められる。 →	○	○	○	○	○	○	○
6. 仕事の中で、私は他のグループの人達と頻繁にコミュニケーションを行っている。 →	○	○	○	○	○	○	○
7. 私の仕事では、必ずしも明確な正解のない問題に直面する。 →	○	○	○	○	○	○	○
8. 私の仕事は、創造的であることが求められる。 →	○	○	○	○	○	○	○
9. 私の仕事では、過去に出会ったことがないような問題を扱うことがよくある。 →	○	○	○	○	○	○	○
10. 私の仕事では、問題についてユニークなアイデアや解決策を必要とする。 →	○	○	○	○	○	○	○
11. 私の仕事では、様々な知識が必要とされる。 →	○	○	○	○	○	○	○
12. 私の仕事において業務を完遂するためには、様々な異なる知識を活用することが必要である。 →	○	○	○	○	○	○	○
13. 私の仕事では、幅広い知識を用いることが求められる。 →	○	○	○	○	○	○	○
	全くそう思わない 1	そう思わない 2	あまりそう思わない 3	どちらとも言えない 4	ややそう思う 5	そう思う 6	とてもそう思う 7

あなた自身の属性についてお伺いします

Q11 あなたの年齢をお答えください。
【 必須入力 】

歳 (半角数字)

Q12 あなたの性別をお答えください。
【 必須入力 】

1 男性	2 女性
○	○

Q13 あなたの現在のグレードをお答えください。
【 必須入力 】

1 マネジャー	2 シニアプロ	3 プロ
○	○	○

Q14 あなたがこの組織に何年勤務しているかお答えください。
([redacted]が[redacted]と[redacted]の合併によって設立される以前から在籍されている方は、その年数も含めてください)
※休職期間は除いてお答えください。なお、1年に満たない勤務期間は切り捨ててお考えください。

【 必須入力 】

＿＿＿＿ 年 (半角数字)

* Confidential information (e.g. organisation name) is masked.